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Editorial

Covid-19 Vaccine for Children

Mohsin Masud Jan

Editor

In the whole world, 196 countries affected with Covid-19. About 157500000 cases are positive and 3300000 death occur in the world up till know. Worst affected countries are USA, UK, Brazil, Italy, France, Span, Mexico, Russia, Columbia, Germany and India.

Canada approved the use of the Pfizer-BioNTech Covid-19 vaccine in children aged 12 years and up, becoming the first nation to do so.

"This is the first vaccine authorised in Canada for the prevention of Covid-19 in children and marks a significant milestone in Canada's fight against the pandemic," Canada Chief Medical Advisor Supriya Sharma told.

Data from a clinical trial in the United States involving more than 2,000 youths who were given two doses showed it is as safe for adolescents as it is for adults, she said.

There were no cases of Covid-19 recorded among the vaccinated children. In adults it has been shown to be at least 95 percent effective in preventing infection.

The vaccine was authorised in December for use in Canadians 16 and older. Other manufacturers of the four vaccines authorised in Canada -- the others are Astra Zeneca, Johnson & Johnson and Moderna -- are conducting or planning their own studies in children as young as six months old.

Sharma said Health Canada will expedite reviews of those results. Since the start of the pandemic, about 20 percent of all Covid-19 cases in Canada were recorded in people under the age of 19. As of Wednesday, nearly 1.25 million people in this country have been diagnosed with Covid-19. More than 24,000 died.

While younger people are less likely to experience serious illness from Covid, Sharma said, "having access to a safe and effective vaccine will help control the disease's spread to their families and friends, some of whom may be at higher risk complications." "It'll also support the return to a more normal life for our children who've had such a hard time over the past year," she said.

The United States is reportedly expected to authorise the Pfizer-BioNTech vaccine for use in 12-15 year olds next week.

Meanwhile, Malaysia will tighten corona virus curbs in the capital to combat a fresh spike in cases, with only essential businesses allowed to operate and restaurant dining-in banned.

The Southeast Asian nation was hit by a fresh Covid-19 outbreak at the start of 2021, prompting authorities to re-introduce curbs not seen since the start of the pandemic and declare a state of emergency.

Infection rates fell and measures were eased -- but cases started climbing again in recent weeks as people went out to shop and socialised more. Kuala Lumpur, Defence Minister Ismail Sabri Yaakob said at least 17 new infection clusters were detected in the city last month.

Health authorities in the country of 32 million reported 3,744 Covid-19 cases -- around half in the capital and neighbouring Selangor state — and 17 deaths.

Daily cases have frequently topped 3,000 in recent days. Malaysia's outbreak remains less severe than in many other countries, with officials reporting over 400,000 cases and almost 1,600 deaths. The World Health Organization announced it would set up a global data hub in Berlin to analyse information on emerging pandemic threats, filling the gaps exposed by Covid-19.

The WHO Hub for Pandemic and Epidemic Intelligence, which will start operating later this year, is set to analyse data quickly and in detail, in order to predict, prevent, detect, prepare for and respond to risks worldwide.

The hub will try to get ahead of the game, looking for pre-signals that go far beyond current systems that monitor publicly available information for signs of emerging outbreaks. "The Covid-19 pandemic has exposed gaps in the global systems for pandemic and epidemic intelligence," WHO chief Tedros Adhanom Ghebreyesus told journalists.

"There will be more viruses that will emerge with the potential for sparking epidemics or pandemics. "Viruses move fast. But data can move even faster. With the right information, countries and communities can stay one step ahead of an emerging risk and save lives."

Hyperuricemia in Patients with Chronic Liver Disease

Faheem Ahmed Memon[1], Siraj Ahmed Butt[1], Muhammed Kashif Shaikh[2], Shakeel Ahmed Memon[1], Irshad Ahmed Bhutto[1] and Ashfaque Hussain Mir Jat[1]

ABSTRACT

Objective: To determine the serum uric acid in patients with chronic liver disease.
Study Design: Case Series Descriptive Study
Place and Duration of Study: This study was conducted at the Tertiary Care Hospital during July 2018 to December 2018.
Materials and Methods: During the study period, all individuals with chronic liver disease admitted to the hospital were included in the study. The inclusion criteria were fifty patients with chronic liver disease attended tertiary care hospital of 12-60 year of age and either gender while the exclusion criteria were hematological malignancy, already on immunosuppressive or chemotherapeutic drugs, gout, medications as frusemide, thiazide or uric acid lowering agents as allopurinol, probenecid and febuxostat, chronic kidney disease, recent surgery, lesch nyhan syndrome and trauma. The duration and severity of chronic liver disease was assessed and the haematological and biochemical workup was done while the serum uric acid was determined by having venous blood sampling and sent for analysis. The frequency and percentages were computed for categorical variables whereas the mean ± SD was computed for numerical variables.
Results: During study period total fifty patients with chronic liver disease were recruited and studied had mean age ± SD identified as 51.20±6.67 (yrs) with male gender predominance. Regarding gender, the male and female population was 20 (40%) and female 30 (60%), residence the urban 23 (46%) and rural 27 (54%), etiology as hepatitis C 22 (44%), hepatitis B as 10 (20%), alcohol 13 (26%) and autoimmune 05 (10%), Child-Pugh Class A 22 (44%), B 14 (28%) and C 14 (28%), co-morbidities as Diabetes mellitus 13 (26%), Hypertension 10 (20%), obesity 08 (16%), osteoporosis 05 (10%) and no any 14 (28%) while the hyperuricemia was observed in 32 (64%) patient
Conclusion: The serum uric acid is arbiter of inflammation and tissue harm and considered as a marker for severity of chronic liver disease.
Key Words: Uric acid, Chronic liver disease, Hyperuricemia

Citation of article: Memon FA, Butt SA, Shaikh MK, Memon SA, Bhutto IA, Jat AHM. Hyperuricemia in Patients with Chronic Liver Disease. Med Forum 2021;32(4):2-4.

INTRODUCTION

Liver diseases are common all over the world as well as in India and the prevalence of liver diseases are likely to increase in the future.[1] Chronic liver disease is a disease process of progressive destruction and regeneration of liver parenchyma results in fibrosis and cirrhosis and is a major cause of mortality worldwide.[2] The diagnosis of chronic liver disease is made by clinical, biochemical, imaging and liver biopsy.[3] Uric acid is the final result of purine and is delivered in conditions wherein there is cell obliteration and consequently, destruction of the atomic material. Uric acid isn't just a result of cell demise; it is additionally a mediator of aggravation and tissue harm. Uric acid in tissues might be a significant activator of inflammation and accordingly, it elevates harm to encompassing tissues. In persistent liver disease, there is reformist harm to liver parenchyma with resulting loss of capacity.[4] In chronic liver illness of various etiologies, uric acid levels are discovered to be high. A high uric acid level is known impact of alcohol metabolism and along these lines, hyperuricemia might be found in alcoholic liver disease.[5] Contrasted with the serum levels, the tissue levels of uric acid might be far and away superior indicators of tissue injury. Hence, UA might be considered as a marker of tissue harm.[6] The study was conduct to determine the level of serum uric acid in individuals with chronic liver diseases presented at tertiary care hospital Hyderabad / Jamshoro.

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MATERIALS AND METHODS

The case series descriptive study was conducted at tertiary care hospital during July 2018 to December 2018. During the study period, all individuals with chronic liver disease admitted to the hospital were included in the study. The inclusion criteria were fifty patients with chronic liver disease attended tertiary care hospital of 12-60 year of age and either gender while the exclusion criteria were hematological malignancy, already on immunosuppressive or chemotherapeutic drugs, gout, medications as frusemide, thiazide or uric acid lowering agents as allopurinol, probenecid and febuxostat, chronic kidney disease, recent surgery, lesch nyhan syndrome and trauma. The duration and severity of chronic liver disease was assessed and the haematological and biochemical workup was done while the serum uric acid was determined by having venous blood sampling and sent for analysis while the its level was assessed as per normal reference range of uric acid level. The proforma was designed for data collection while the analysis was done through SPSS to manipulate the categorical and numerical variables.

RESULTS

Table No.1: The Clinical Profile of Study Population

Parameter	Frequency (N=50)	Percentage (%)
AGE (yrs)		
12-19	07	14
20-29	09	18
30-39	15	30
40-49	08	16
50-60	11	22
GENDER		
Male	20	40
Female	30	60
RESIDENCE		
Urban	23	46
Rural	27	54
ETIOLOGY		
Hepatitis C	22	44
Hepatitis B	10	20
Alcohol	13	26
Autoimmune	05	10
CHILD-PUGH CLASS		
A	22	44
B	14	28
C	14	28
CO-MORBIDS		
Diabetes mellitus	13	26
Hypertension	10	20
Obesity	08	16
Osteoporosis	05	10
No any	14	28
HYPERURICEMIA		
Yes	32	64
No	18	36

During study period total fifty patients with chronic liver disease were recruited and studied had mean age ± SD identified as 51.20±6.67 (yrs) with male gender predominance. The clinical profile of study population is presented in Table I.

DISCUSSION

The serum uric acid level is estimated by the purine intake and uric acid formation and uric acid elimination by kidney and extrarenal routes.[7] The normal serum uric acid levels in males is 3.4 -7.2 mg/dL and in females is 2.4– 6.1 mg/dL.

The Long-term hyperuricemia is a risk factor to disturb joints, kidney, vessels, renal and connective tissues and may predispose to diabetes, hypertension, renal disease and cardiovascular disorders.[8]

Liver cirrhosis is a gradual chronic disease of the liver which involves the organ and is the irreversible consequence of various chronic liver disorders of different etiologies or the long term result of exposure to various harmful compounds.[9,10]

Karim SF, et al demonstrated that there is positive correlation between AST, ALT and prothrombin time in CLD subjects without cirrhosis.[11]

Jayabal M, observed raised BMI was related with an expanded frequency of NAFLD. Serum uric acid levels are altogether connected with NAFLD, and raised uric acid showed a high frequency of NAFLD.[12]

Hyder MA, et al demonstrated that there were 10 fold increases in mean value of AST in viral hepatitis, 13 folds increase in alcoholic liver disease and 5 fold in liver cirrhosis.[13]

Lee WC, et al demonstrated serum uric acid level related with the advancement of liver cirrhosis and the presence of raised serum liver proteins are significant causes and hazard components of chronic liver illness.[14]

Another study by Lee YJ, et al revealed that Serum uric acid is autonomously connected with the presence of NAFLD and uric acid might be a significant additional apparatus of appraisal.[15]

Paul R, et al observed that serum uric acid levels increased with high Child-Pugh class in chronic liver disease patients.[16]

Study by Siddiqui SA, et al observed coagulation abnormalities were profound in chronic liver disease patients.[17]

Study by Garcovich M, et al determined the low serum albumin levels in chronic liver disease patients.[18]

CONCLUSION

The serum uric acid level is an important part of spectrum of chronic liver disease and in tissues and

may play an important role in inflammation and promote damage to surrounding tissue. It is an arbiter of inflammation and tissue harm and considered as a marker for severity of chronic liver disease.

Author's Contribution:

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Hyperhomocysteinemia in Patients with Hypothyroidism

Siraj Ahmed Butt[1], Faheem Ahmed Memon[1], Muhammed Kashif Shaikh[2], Irshad Ahmed Bhutto[1], Ashfaque Hussain Mir Jat[1] and Syed Zulfiquar Ali Shah[3]

ABSTRACT

Objective: To determine the hyperhomocysteinemia in patients with hypothyroidism.
Study Design: Cross Sectional Descriptive Study
Place and Duration of Study: This study was conducted at the Liaquat University Hospital Hyderabad from January 2018 to December 2018.
Materials and Methods: The inclusion criteria were the patients of age ≥18 year, either gender and aged 18 years and newly diagnosed case of hypothyroidism (TSH >15mU/l) while the exclusion criteria were the patients with <18yrs, already on thyroid replacement therapy and vitamin B12 and folic acid, the subjects with subclinical hypothyroidism, the individuals who developed hypothyroidism as a result of thyroidectomy or radioablation, the patients already on phenytoin, phenobarbitone and valproate, niacin and cholestyramine. The relevant and specific investigations were advised and 2 ml venous blood was taken after aseptic measure and sent to laboratory for serum homocysteine level. The frequency and percentages were computed for categorical variables whereas the mean ± SD was computed for numerical variables.
Results: During one-year study period total fifty patients with hypothyroidism were recruited and studied had mean age ± SD identified as 47.87±7.52 (yrs) with female gender predominance 34 (68%). Regarding residence, the urban and rural population was identified as 22 (44%) and 28 (56%) while the clinical features observed were weight gain 42 (84%), fatigue 30 (66%), puffiness of face 28 (56%), leg swelling 23 (46%), cold intolerance 18 (36%). the hyperlipidemia was observed in 30 (60%) while the other comorbities observed were diabetes mellitus 35 (70%), hypertension 28 (56%), obesity 23 (46%), osteoporosis 21 (42%) whereas the hyperhomocysteinemia was observed in 32 (64%) patients respectively.
Conclusion: The patients with hypothyroidism are at risk for hyperhomocysteinemia and dyslipidaemia and are more prone to premature atherosclerosis and increased adverse cardiovascular events.
Key Words: Thyroid, Hypothyroidism, Homocysteine, Lipid, Hyperlipidemia and Dyslipidemia

Citation of article: Butt SA, Memon FA, Shaikh MK, Bhutto IA, Jat AHM, Shah SZA. Hyperhomocysteinemia in Patients with Hypothyroidism. Med Forum 2021;32(4):5-7.

INTRODUCTION

The thyroid name was derived from Greek language and the thyroid hormones are important for growth and development of a human being.[1] The thyroid gland weighs 15 to 20 grams while the thyroid gland is composed of two lobes connected by a thin tissue bands called as isthmus.[2] The hypothyroidism due to iodine deficiency remains the leading etiology for hypothyroidism.[3]

Thyroid disease is associated with atherosclerotic cardiovascular disease and may be due to thyroid hormones regulation of fat metabolism and its effects on blood pressure.[4,5] Thyroid hormones have various effects and influence the function of most organs.[6] Coronary artery atherosclerosis is common observed in individuals with hypothyroidism while the adequate thyroid hormone replacement may have protective effect on the progression of disease.[7] The atherogenic profile of fat and the hyper-homocysteinemia in hypothyroid patients suggest greater risk of coronary atherosclerosis in such population.[8,9] The evidence of association between homocysteine and coronary artery disease was given by Wilcken EL, et al.[10] The study conducted by Shaloob M et al shown 16.88% individuals found to have serum homocysteine level of >20 µmol/L.[11]

Thus, in the light of above facts, this study aimed to explore the association between the homocysteine levels and thyroid disturbance (hypothyroidism) at tertiary care teaching hospital. Hyperhomocysteinemia is the risk factors for atherosclerotsis and

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cardiovascular deaths in hypothyroidism and by timely exploration and diagnosis along with abrupt treatment of thyroid dysfunction, the burden of complications, morbidity and mortality associated with hypothyroidism in relation to atherosclerosis can be reduced.

MATERIALS AND METHODS

The cross sectional descriptive study was conducted from January 2018 to December 2018 at Liaquat University Hospital Hyderabad. Total fifty cases were selected from the Medicine and allied ward with clinical presentation suggestive of hypothyroidism. After revealing the need for relevant investigations and necessity for further management, the patients were recruited by having informed consent obtained from patient or attendant before including the participant in the study. The inclusion criteria were the subjects of age ≥18 year, either gender and newly diagnosed case of hypothyroidism (TSH > 15mU/l) while the exclusion criteria were the patients with <18yrs, already on thyroid replacement therapy and vitamin B12 and folic acid, the subjects with subclinical hypothyroidism, the individuals who developed hypothyroidism as a result of thyroidectomy or radioablation, the patients already on phenytoin, phenobarbitone and valproate, niacin and cholestyramine. The demographical profile was inquired while the clinical examination was performed and recorded on pre-designed proforma. The relevant and specific investigations were advised and 2 ml venous blood was taken after aseptic measure and sent to laboratory for serum homocysteine level while the data was analyzed in SPSS 21. The frequency and percentages were computed for categorical variables whereas the mean ± SD was calculated for numerical variables.

RESULTS

During one-year study period total fifty patients with hypothyroidism were recruited and studied had mean age ± SD identified as 47.87±7.52 (yrs) with female gender predominance. The demographical and clinical profile of study population is presented in Table I.

Table No.1: The Demographical and Clinical Profile of Study Population

Parameter	Frequency (N=50)	Percentage (%)
AGE (yrs)		
12-19	06	12
20-29	09	18
30-39	16	32
40-49	19	38
GENDER		
Male	16	32
Female	34	68
RESIDENCE		
Urban	22	44
Rural	28	56
HYPERLIPIDEMIA		
Yes	30	60
No	20	40
SYMPTOMS		
Weight gain	42	84
Fatigue	30	66
Puffiness of face	28	56
Leg swelling	23	46
Cold intolerance	18	36
CO-MORBIDS		
Diabetes mellitus	35	70
Hypertension	28	56
Obesity	23	46
Osteoporosis	21	42
HYPERHOMOCYSTEINEMIA		
Yes	32	64
No	18	36

DISCUSSION

The prevalence of hypothyroidism directly proportion to age and more predominant in female population while Turhan S, et al raised the research question of a association between atherosclerosis and hypothyroidism.[12] Thyroid disturbance is associated with atherosclerotic CV disease and has various adverse effects on heart and blood pressure.[13] Hypothyroidism composed of multiple metabolic risk factors that initiates atherosclerosis and adverse cardiovascular events.[14] The hypothyroidism is associated with co-morbids as obesity, overweight, hypertension, diabetes and hyperlipidemia.[15] Hypothyroid patients with subclinical picture, drug compliance and lately diagnosis of hypothyroidism associated with metabolic syndrome.[16] Asvold BO, et al in his study found the positive relationship of TSH within serum fat concentration.[17] The atherogenic profile of serum lipids and hyperhomocysteinemia in hypothyroid patients suggests greater risk for ischemic heart diseases, cerebrovascular accidents and young age mortalities.[18] Al-Habori M, et al conducted a study in Kuwait comprised fifty patients with hypothyroidism, the age stratification was between 25 to 64 years with mean ± SD 39.2 years and entire population was female.[19] Al-Habori M, et al study comprised 50 patients with hypothyroidism and significant rise in serum homocysteine in hypothyroid subjects than in control groups was observed respectively.[19]

Thus, the association of lipid disturbance and hyperhomocysteinemia observed in hypothyroid individuals may represent a dynamic atherogenic state responsible for adverse cardiovascular events.

CONCLUSION

The Thyroid dysfunction is common in Pakistani population while the TSH is directly proportional to serum homocysteine levels. The patients with hypothyroidism are at risk for hyperhomocysteinemia and dyslipidaemia and are more prone to premature atherosclerosis and increased adverse cardiovascular events.

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Immediate Dentin Sealing versus Dentin Air Abrasion Prior to Composite Inlay luting Procedures

Dentin Sealing VS Dentin Air Abrasion

Ola Mohamed Sakr[1,2]

ABSTRACT

Objective: The aim of this in vitro study was to investigate the shear bond of Immediate Dentin Sealing versus dentin air abrasion prior to Composite luting Procedures.

Study Design: Comparative Study

Place and Duration of Study: This study was conducted at the College of Dentistry, Qassim University, Kingdom of Saudi Arabia from January 2019 till December 2020.

Materials and Methods: The study design was comprised 30 non carious molars which were divided into three equal groups. The occlusal third of the crowns were cut with a slow-speed diamond saw. The groups were as follows: group A, dentin etched with 35% phosphoric acid for 10 s directly prior to luting procedures. group B, immediate dentin sealing is done directly after cavity preparation. group C, dentin surface was abraded at 60 psi with 50-µm aluminum oxide for 30 sec directly prior to luting procedures. The resin composite inlays were adhered to different treated dentin surface using adhesive resin cement. The specimens with their adhered inlays of each group were subjected to shear bond strength testing. Analysis of the recorded shear bond strength values (Mpa) were done using one-way analysis of variance and Tukey post hoc test. Statistical analysis was performed using Graph pad Prism-6 statistics software for Windows P values ≤ 0.05 are considered to be statistically significant in all tests

Results: Mean shear bond strength values are presented in Table1: The shear bond strength values (Mpa) were analyzed using one-way analysis of variance and Tukey post hoc test and were revealed a significant influence of the main groups type tested ($p \leq 0.05$) on shear bond strength mean values (Group C > group B > group A)

Conclusion: Dentin Surface treatment by air abrasion can increase the bond strength of total-etch adhesives. Immediate dentin sealing bonding strength is less than air abraded dentin bond strength.

Key Words: Immediate dentin sealing – Air abrasion – Adhesion - Composite inlay

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INTRODUCTION

Dentin with a higher organic content, fluid pressure from dentin tubules, and the presence of the smear layer are all factors cleared that achieving successful dentin bonding is still a major challenge [1,2].

It is already accepted that the interaction is mainly micromechanical for total-etch adhesives: hybrid layers and resin tags must be created in order to obtain a reliable dentin adhesion.

The interdiffusion of the resin into the collagen develops a hybrid layer,

Etched dentin surface should show patency of the dentinal tubules themselves to allow resin tags into dentinal tubes [3,4].

Several dentin pretreatment methods have been tentatively implemented in order to enhance the relationship between resin and dentin [5,6]. Pretreatments can be used to remove debris that can affect final bonding restoration in addition to the micromechanical adhesion requirement. [7].

Various methods are used to prepare the cavity or alter the surface of dentin, may result in good features of the smear layer [8,9].

The smear layer characteristics obtained with various dentin pretreatments can be expected to impair different bonding interactions [10, 11].

It is important to determine their effect on the attachment of various adhesives to dental hard tissues

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due to modern different preparation techniques used in conservative dentistry.

Air abrasion, a mechanical pretreatment method, using Aluminum oxide is an effective surface roughening technique which can improve mechanical retention [12, 13]. Air abrasion is now widely used to improve the roughness of composite or ceramic restorations and increase the bond's surface area, potentially increasing bonding values.[14, 15].

Recently, immediate dentin sealing (IDS) approach to freshly cut dentin directly after indirect restoration cavity preparation and prior to the temporalization stage was proposed as a modality of dentin surface pretreatment to improve final luting cement bonding [16, 17].

IDS Studied and greatly enhanced over the years with good findings with regard to the strength of bonds, void formations, Bacterial leakage, and post cementation hypersensitivity [18].

MATERIALS AND METHODS

The teeth used in the study were 30 caries-free human molars that were extracted for periodontal purposes. Any residual soft tissue on the tooth surfaces was removed, and the teeth were preserved at room temperature in distilled water. The teeth were mounted vertically in auto polymerizing acrylic resin (Meliodent; Bayer Dental, Newbury, UK). The occlusal enamel was removed using a slow-speed diamond saw sectioning machine under water cooling (Isomet; Buehler, Lake Bluff, IL). The teeth were randomly divided into three groups. Guided grooves were made to a depth sufficient to expose 0.5 mm dentin depth below dentinoenamel junction. Under water-cooling, the dentin surface was abraded with decreasing grits of silicon carbide (SiC) paper (from #800 to #1200) for 30 seconds per paper. A standard superficial dentin surface of about 0.5 mm from the dentinoenamel was formed, along with a standard smear layer.

Dentin surface area for testing was determined with the aid of an adhesive tape punched by a modified Ainsworth rubber-dam punch to provide 3 mm diameter holes. Finally, ten dentin samples were obtained for each group.

The treatment groups were classified as follows:

Group A: Dentin etched with 35% phosphoric acid for 10 s directly prior to luting procedures.

Group B: Immediate dentin sealing is done directly after cavity preparation.

Group C: Dentin surface abraded in a perpendicular direction at 60 psi with 50-µm aluminum oxide for 30 sec directly prior to luting procedures.

The dentin treatments were as follows:

Group A- Acid etching: 35% phosphoric acid gel (Scotchbond etchant gel, 3M, USA) was applied to the dentin surface for 10 s, followed by water rinsing for 10 s and gentle indirect air drying 5 s, followed by luting cement.

Group B-immediate dentin sealing:

Immediately following tooth preparation, the IDS was achieved.

With 35% H3PO4 (Scotchbond etchant gel, 3M, USA) for 10 s, Dentin was washed with copious amount of water for 30 seconds.

Primer and adhesive resin are then applied (Optibond FL, Kerr, USA), indirect air-thinned then 10 s photopolymerized using halogen curing light (3 M ESPE, St Paul, USA) with a light output of 1000 mW / cm2.Thin layer of Glycerin gel was applied and, the surface was photopolymerized for 40 s.

Group C- Abrasion: A Microetcher ERC (Danville Engineering, San Ramon, CA) was used to abrade the dentin surface at 60 psi for 1 minute with 50-m aluminum oxide. The nozzle was held 2 mm away from the sample surface during abrasion.

II-Preparation of the composite inlays:

Resin composite discs with 4 mm thickness and 5 mm in diameter were prepared by layering 2-mm-thick per increment of a nanohybrid resin composite ((Filtek Z350XT, 3 M ESPE, St Paul, USA) into a silicone mold. Each increment was photopolymerized using halogen curing light (3 M ESPE, St Paul, USA) with a light output of 1000 mW / cm2 for 40 seconds.

Fitting side of the resin composite discs was abraded, under water cooling system, with 600-grit SiC paper to standardize the surface roughness.

All perpetrated teeth specimens were stored in water at 37°C for five days before the luting procedures.

III: Luting Procedures:

Before starting luting procedures, ultrasonic cleaning for 10 minutes, of the resin composite discs with distilled water. Discs were dried with air, and silanated with (Scotchbond, Universal Adhesive,3M ESPE) for 20 sec, air dried for 5 sec.

Dentin specimens were gently dried using cotton pellets. Air Abrasion procedure for group C: Acid etching with 35% phosphoric acid gel (Scotchbond etchant gel, 3M, USA) was applied to the dentin surface for 10 s, followed by copious water rinsing for 10 s and indirect air drying gently for 5 s. Dentin specimens were rubbed with (Scotchbond, Universal Adhesive, 3M ESPE) for 20 sec. According to the manufacturer's instructions, luting agents (RelyX, Ultimate Adhesive Resin Cement, 3M ESPE) were applied. Resin composite discs were pressed on the cement using digital pressure, which was maintained for 20 seconds per surface. Light curing was performed from the buccal, lingual, and occlusal directions. For 24 hours, cemented specimens were maintained in distilled water.

IV- Measurement of shear bond strength:

The specimens of each group were subjected to shear bond strength testing. The cemented specimens were clamped to a universal testing machine (LLOYD

Universal Testing Machine LR5R series UK). Each specimen in its resin block was hold in the lower jaw of the testing machine. In the upper jaw, a knife edge chisel was attached and allowed force application on interface between the test material and the dentin surface, the test machine was run at a constant speed of 0.5 mm/min and until the inlays separated. Shear bond strength values were registered in Newton and transformed into Mpa by dividing the maximum load by the surface area. One-way study of variance and the Tukey post hoc test were used to examine the shear bond strength values (Mpa). Statistical analysis was performed using Graph pad Prism-6 statistics software for Windows P values ≤ 0.05 are considered to be statistically significant in all tests.

RESULTS

Mean shear bond strength values are presented in Table1: The shear bond strength values (Mpa) were analyzed using one-way analysis of variance and Tukey post hoc test and were revealed a significant influence of the Main groups type tested (p≤ 0.05) on shear bond strength mean values (Group C > group B > group A).

Table No.1: Shear bond strength results (Mean ± SD) for all groups with different surface treatment of the dentin

	Shear bond strength	P value
Group A	5.06±1.1	0.0001*
Group B	6.198±1.15	0.0277*
Group C	9.15±1.5	0.0001*

different letters indicating statistical significances P≤ (0.05)

DISCUSSION

Etching of dentin with phosphoric acid showed a well-known ability to remove the smear layer. Also, there are many studies documented the effect of air abrasion on dentin surfaces (12,19).

In the current study, shear bond test was used to compare the dentin adhesion of resin cement after different approach of dentin pretreatment.

Many studies strongly suggest that the immediate dentin sealing approach has strengthened the bond strength of the final restoration. The increased bond strength has been shown with either both total-etch or self-etch dentin bonding agents (20-22).

The results of the present study showed a significant improvement of the final restoration bond strength of immediate dentin sealed group .These findings may be explained that the bonding to freshly cut dentin without any temporary cement remnants which may impairment with bond strength .Many studies confirmed these findings as a contaminant-free substrate, such as that obtained at the time of preparation when dentin is freshly cut and clean, is a primary prerequisite for optimum bonding(23,24).

Many authors suggested the immediate dentin sealing as a strategic approach for sealing the dentinal tubules. The application of dentin bonding agent to freshly prepared dentin lead to influence of the retention and placement of the indirect inlay restoration (25).

On the other hand, current study results showed that air abraded dentin pretreatment showed highest bond strength.

Air abrasion treatment may create a rough dentin surface, retaining the original diameter of the orifices of the dentin tubule and consequently the intertubular dentin quantity (13).

According to the literature, the increased adhesive strength reported with abraded specimens could have been achieved by increasing the adhesive system's wettability and micromechanical retention. Air abrasion help in removal of the remnants of the temporary cements and increase the dentin surface roughness (26).

Dentin copious rinsing with water and acid etching could remove Aluminum Oxide powder particles, improving adhesive penetration to dentin which could explain the higher bond strength of abraded dentin surfaces (27).

More over some authors tested different dentin cleansing treatments on the bond strength of composite resin restoration, and they found that the highest bond strength is achieved with the air abrasion dentin cleaning technique (28).

CONCLUSION

Dentin Surface treatment by air abrasion can increase the bond strength of total-etch adhesives.

Immediate dentin sealing bonding strength is less than air abraded dentin bond strength.

Author's Contribution:

Concept & Design of Study:	Ola Mohamed Sakr
Drafting:	Ola Mohamed Sakr
Data Analysis:	Ola Mohamed Sakr
Revisiting Critically:	Ola Mohamed Sakr
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Incidence of Reactionary Hemorrhage Among Patients After Open Hemorrhoidectomy at Surgical Unit of Tertiary Care Hospital

Asif Imran[1], Manzoor Ahmad[2], Zarka Sarwar[3], Abbas Ali Raza[1] and Waqas Ahmad[2]

ABSTRACT

Objective: To determine frequency of delayed post haemorrhoidectomy bleeding

Study Design: Cross-sectional study

Place and Duration of Study: This study was conducted at Surgical Department of Mardan Medical Complex, Mardan from June 2017 to May 2019.

Materials and Methods: Upon a sample of 336 consecutive patients (chosen via non-probability, consecutive sampling) of either gender, presenting with 3rd and 4th degree haemorrhoids and scheduled to undergo haemorrhoidectomy. After taking written informed consent, data was recorded onto a pre-structured questionnaire containing inquiries pertaining to basic biodata, sociodemographic details, disease history, inferences obtained from thorough examination (including proctoscopy) and follow up (after two weeks) findings (especially reactionary haemorrhage). The data obtained was analyzed using SPSS v. 21.0.

Results: The mean age of the sample stood at 45.5 ± 6.85 SD and the gender distribution was largely equal. The incidence rate of reactionary haemorrhage was revealed to be 3.57% and stratification revealed reactionary haemorrhage did not vary with gender and age.

Conclusion: After careful consideration, it can be concluded that the frequency of reactionary haemorrhage is low at the study setting and the findings are consistent across both genders and all age groups.

Key Words: Reactionary Haemorrhage, Haemorrhoids, Treatment Outcome, Adverse Events, & Post-Operative Complication

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INTRODUCTION

Hemorrhoids are displaced venous cushion in the lower rectum. Because of their rich vascular supply, highly sensitive location, tendency to engorge and prolapse, hemorrhoidal venous cushions are common causes of anal pathology.[1] Above the age of 50 years around 50% of population experience some kind of discomfort from hemorrhoids but the percentage of patients presenting to physicians is very less so the exact prevalence is not known.[2]

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In UK the prevalence was reported to be 16-36% in general population.[3,4]

Symptoms can range from mildly bothersome, such as pruritus, to quite concerning, such as rectal bleeding. Although hemorrhoids are a common condition diagnosed in clinical practice, it is important to rule out more serious conditions, such as other causes of gastrointestinal (GI) bleeding, before reflexively attributing symptoms to hemorrhoids therefore proctoscopy, and if necessary lower GI endoscopy is done to rule out other causes of bleeding per rectum .[5]

Management depends on degree of hemorrhoids. And includes lifestyle modification, laxatives, injection sclerotheraphy for 1st degree hemorrhoids, band ligation for 1st and 2nd degree hemorrhoids. For 3rd, 4th and failed outpatient procedures (sclerotheraphy and band ligation) Hemorrhoidectomy, Hemorrhoidal Artery ligation (HAL) and Procedure for Prolapsed Hemorrhoids (PPH) are performed.[6-9]

Hemorrhoidectomy is the most commonly performed procedure for hemorrhoids in surgical department. There are two techniques of hemorrhoidectomy, open (Milligan Morgan hemorrhoidectomy) and closed technique. In both the procedure the hemorrhoidal

tissues are excised while saving sphincters and hemorrhoidal vessels are ligated.[10]

Open hemorrhoidectomy is most commonly performed procedure in our setup for hemorrhoids. There are many complications of open hemorrhoidectomy. The most common early complications are pain, urinary retention, bleeding, while late complications include abscess, fistula formation, incontinence, anal stenosis.[11-13]Bleeding following anorectal procedure is a common complication and accounts for 0.4–1.2% of cases[14]. Post-hemorrhoidectomy bleeding varies from 0.3% to 6% after hemorrhoidectomy[15]. There is no difference for open and closed technique. Post-hemorrhoidectomy bleeding is divided into two groups early occurring in 24 to 48 hrs following surgery and these result from slippage of ligature (secondary hemorrhage) whereas bleeding up to 2 weeks from hemorrhoidectomy is referred to as delayed bleeding (reactionary hemorrhage) and is often resulting from local trauma or infection. [16] The frequency of delayed post-hemorrhoidectomy in different studies reported to be 0.9% to 10%.[17]

Although there are sufficient studies on delayed post-hemorrhoidectomy bleeding but there is limited local data. The aim of this study is to determine the frequency of delayed post hemorrhoidectomy bleeding at tertiary care hospital Mardan, this study will provide us the latest and updated information regarding post-hemorrhoidectomy bleeding and help us find effective & easy therapy for the control of post-hemorrhoidectomy bleeding that will prevent or reduce financial & psychological burden, hospital stay & complications.

MATERIALS AND METHODS

This cross-sectional study was conducted at Surgical Department of Mardan Medical Complex, Mardan from June 2017 to May 2019.

Ethical Approval: After approval from hospital ethical committee, a total of 336 consecutive patients with 3rd and 4th degree hemorrhoids, of both gender and any age group were included.

Inclusion and Exclusion criteria: Patients with chronic liver disease, 1st and 2nd degree hemorrhoids, bleeding disorder and not giving consent were excluded from this study.

Sampling technique: All the patients were selected through non- probability consecutive technique. Patients were included in the study after taking informed consent. Detailed history and thorough examination including proctoscopy of the patients were done. All patients underwent open hemorrhoidectomy. Patients were asked for follow up after two weeks and assessed for reactionary hemorrhage.

Data Analysis: All the data was recorded on a standardized Performa. Bias and confounders in the study were controlled by strictly following the exclusion criteria. The data was analyzed with the help of computer software SPSS for windows version 21. For categorical variables, frequencies were calculated while for continuous variables; mean and standard deviation were calculated.

RESULTS

In Age Wise Distribution, 165 (49.10%) patients were recorded in 20-45 Years Age Group. 171 (50.59%) patients were recorded in 46-65 Years Age Group. (Table No. 1) In Gender Wise Distribution, 175 (52.08%) patients were recorded as Male while 161 (47.91%) patients were recorded as Females. (Table No. 2).

Table No. 1: Frequencies and Percentages for Age (n=336)

Age Group	Frequencies	Percentages
20-45 Years	165	49.10%
46-65 Years	171	50.59%
Total	**336**	**100%**
Mean and SD for Age	**45.5 ± 6.85**	

Table No. 2: Frequencies and Percentages for Gender (n=336)

Gender	Frequencies	Percentages
Male	175	52.08%
Female	161	47.91%
Total	**336**	**100%**

Table No. 3: Frequencies and Percentages for Reactionary Hemorrhage (n=336)

Reactionary Hemorrhage	Frequencies	Percentages
Yes	12	3.57%
No	324	96.42%
Total	**336**	**100%**

Table No. 4: Stratification of Reactionary Hemorrhage with respect to Age (n=336)

Age	RH	Frequencies	Percentages	P Value
20-45 Years	Yes	06	1.78%	0.949
	No	159	47.32%	
46-60 Years	Yes	06	1.78%	
	No	165	49.10%	

Table No. 5: Stratification of Recreational Hemorrhage with respect to Gender (n=336)

Gende	RH	Frequencie	Percentage	P

r		s	s	Value
Male	Yes	07	2.08%	0.658
	No	168	50%	
Female	Yes	05	1.48%	
	No	156	46.42%	

As per frequencies and percentages for reactionary hemorrhage, 12 (3.57%) patients experienced reactionary hemorrhage. (Table No. 3). Stratification of reactionary hemorrhage with respect to age and gender is recorded at Table No. 4 and 5 respectively.

DISCUSSION

Hemorrhoids are dilated rectal veins & a disorder of the anal cushions[1]. They are common with raised intra-abdominal pressure e.g. constipation & pregnancy[11]. Thomson showed they occur due to fragmentation of Parks' ligament which causes their distal enlargement. Hemorrhoids usually occur at 3, 7 & 11 o'clock position & cause bright red painless bleeding, mucus discharge, mucosal prolapse, pruritus & pain[18]. They are classified into 4 degrees: 1st; only bleed, 2nd; prolapse & return automatically, 3rd; prolapse but return on reduction & 4th; permanently prolapsed[19]. Open excisional hemorrhoidectomy is the gold standard for third and fourth degree hemorrhoids. Milligan Morgan hemorrhoidectomy is easier to perform and is the most common operation performed in Pakistan for hemorrhoids. Ferguson hemorrhoidectomy is little bit difficult for the juniors to learn and perform and takes more time. Stapler hemorrhoidectomy may replace the open hemorrhoidectomy in future but due to high cost of Stapler gun it is not going to replace open hemorrhoidectomy in Pakistan.

CONCLUSION

After careful consideration, it can be concluded that the frequency of reactionary haemorrhage is low at the study setting and the findings are consistent across both genders and all age groups.

Author's Contribution:

Concept & Design of Study:	Asif Imran
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Data Analysis:	Abbas Ali Raza, Waqas Ahmad
Revisiting Critically:	Asif Imran, Manzoor Ahmad, Zarka Sarwar
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Benign Biliary Stricture - Outcome Analysis at Tertiary Care Hospital Quetta

Benign Biliary Stricture

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ABSTRACT

Objective: To understand the varied presentation and outcome of patients with Benign Biliary Strictures.
Study Design: Observational / analytical study
Place and Duration of Study: This study was conducted at the Bolan university of Medical and Health Sciences between January 2007 and July 2019.
Materials and Methods: Data was collected through review of patients charts. Malignant biliary stricture and age <15 years were excluded. The patients were divided into Endoscopic and surgery groups. Variables included demographic, etiology, type of stricture.
Results: Results of surgical (Hepaticojejunostomy) and endoscopic stenting in term of hospital stay, morbidity, mortality were evaluated. Thirty-five patients were treated. 22 female and 13 male. Age ranged between 21--80 years. There were 19 patient in surgical group and 16 patients in the endoscopic group. The stricture were type1, (13) type11, (16). And type 111, (6). The outcome was good in 27 patients. 8 patients developed cholangitis. Cholangitis was more in the endoscopic group.
Conclusion: The morbidity was higher in endoscopic group 37.5%. The overall excellent result was 77%. Stricture recurrence was 5.7%.The endoscopic procedure hadmore complications as compared to the surgical management.
Key Words: Benign biliary stricture. Bismuth classification, cholangitis, hepatico-jejunostomy

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INTRODUCTION

Benign bile duct stricture {BBS} are uncommon and challenging clinical conditions that requires a coordinated multidisciplinary approach[1] by involving Gastroenterology, Radiology, and surgery.
The benign biliary strictures occurs following injury to bile duct during surgery[2] or idiopathic, when the most likely cause is an infection. The injury leads to inflammation around the injured duct leading to fibrosis and stenosis leading to stricture[3].
Bismuth classification for BBS.
Type 1,low common hepatic duct stricture, hepatic duct stump> 2cm.
Type 2, Mid common hepatic duct stricture, hepatic duct stump< 2cm
Type 3, Hillar stricture with no residual common hepatic duct, hiler confluence is intact
Type 4, Destruction of hilar stricture confluence right and left ducts separated.
Type 5, Involvement of aberrant right sectoral duct or including common hepatic duct.[4]
Bile duct stricture may be asymptomatic but, can cause life threatening complications, such as ascending cholangitis[5]. Long term survival is possible with proper management of benign biliary strictures. A good prognosis is seen in those cases diagnosed early[6]. Work up includes history, clinical examination, laboratory and radiological investigation. Ultra sound shows intra or extra hepatic duct dilatation[7]. ERCP is both diagnostic and therapeutic. MRCP and transhepatic cholangiography also has role in the management of benign biliary stricture.[8] Modalities for the management of BBS are endoscopic and surgical. The excellent results with endoscopic management is 80 -88%, with a morbidity of 36-40%. The endoscopic treatment need frequent changing of the stent.[9]
Draganov et al, reviewed 29 patients retrospectively, the etiology for BBS was 66%post-surgery, 31% chronic pancreatitis, and 3% idiopathic. The endoscopic therapy was successful in 18 (62%). Recurrence of stricture occur in 11 (38%) patients, Type 1 and type 2 stricture had the highest success rate(80%).[10]
Surgery has excellent results 90- 95 % in relieving obstruction with less-complications 18-26 % and long term outcome is good compare to endoscopy.
Lille Moe KD et al. reviewed 142 patients with benign biliary strictures, underwent surgical treatment, with follow up of 57.7 months. The excellent or good results in 91% , Stricture recurrence in 11 patients (7.9%).[11] In a case series Pitt et al found a higher success rate in

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surgical 88 % vs endoscopic 55 % and concluded that the hepatojejunostomy is the best procedure for benign biliary stricture management.[6]

The purpose of this study was to review the patients with benign biliary strictures in Balochistan, in this era of laparoscopic surgery. Where laparoscopic surgery is still in the premature stage. There is great need to understand the clinical presentation and management of benign condition with its life threatening complications.

MATERIALS AND METHODS

Inclusion criteria: Patients diagnosed as benign biliary stricture presented at Bolan medical complex hospital Quetta, between January 2007 to July 2019, were divided into.

Group 1: Endoscopic group

Group 11: surgery group

Exclusion criteria:

1, malignant biliary stricture

2, Age< 15 years

3, Any benign condition other than biliary stricture requiring hepatico-jejunotomy.

Data was collected reviewing the charts from hospital record.

Variables were.

1, Age

2, Gender

3, Tlkaline phosphatase, serum bilirubin,

4, type of stricture,

5, Mode of treatment surgical or endoscopic

6, Follow up

Sub group analysis were performed to see the effect of the various variables on the outcome parameters,

(a) Hospital stay
(b) Morbidity
(c) Mortality.
(d) Follow up

Mortality was defined death occurring within 30 days of hospital stay.

Analysis plan: Descriptive analysis includes frequencies and proportion of demographic variables such as age sex of the patient. Measure of central tendency such as mean and standard deviation were calculated for continuous variables. Chi square test was applied for categorical variables and t- test for continuous variables at 5 % significance level (alpha =0.05).the data was entered and stored in Espino version 6.04.(a word processing data base and statistical program public health, CDC,WHO).and would be converted to SPSS version 11.0.(statistical package for social sciences**).**

RESULTS

Thirty five patients with BBS were treated during the study period, patient were divided in to Endoscopic group and surgical group.

Demographic and clinical characteristic of patients are listed in table 1

Table No.1: Demographic and clinical characteristic of patients

Characteristics	Endoscopy	Surgery	P value
age Mean +_ SD ,Y	49.3+_17.2	46.0+_14	.34
Sex ,F/M	9/7	13/6	.36
Symptoms Jaundice Pain Fever	 12 11 7	 17 15 10	 38 .54 .65
Labs mean +_ SD Albumin.g/l Bilirubin mg/dl Alkaline phos.u/l	 2.87+_.756 4.3+_2.8 372+_53	 3.1+_1.25 7.5+_5.2 520+_74	 .60 .12 .26
Bismuth classififcation Type 1 Type 2 Type 3	 12 4 0	 1 12 6	 .31
Hospital stay mean +_SD	5.4+_2	9.5+_2	<.05
Lenghth of follow up, mean +_SD month	9+_5.2	26+_8.6	.025
Complication no of patients 1.Cholangitis 2.Wound infection 3.pneumonia	6 5 0 1	4 1 3 0	.08

There were 22 female and 12 male patients. All patients underwent Ultrasonographic scan of abdomen. ERCP done in 31 (89%) patients. MRCP was done in 4 patients. Post traumatic strictures were 60%, and 40% had post inflammatory strictures.

Endoscopic treatment was successful in 16 patients. 13 patient received one 10F to 12F stents, 3 received two stents. In endoscopic group the cause of benign biliary strictures was traumatic in 10 patients and inflammatory in 6 patients. Majority of the patients had Bismuth type1, stricture12 patients. None of the patient treated endoscopically had type111 or typeIV strictures. The morbidity in Endoscopic group was 37.5%, sixdeveloped cholangitis, four required multiple exchange of stent, and one underwent hepaticojejunostomy. Cholangitis and clogging was the major cause of stent exchange. Over all stent exchange

was needed in 10 instances. One mortality 6.25% occurs due to sepsis secondary to stent clogging.

Surgery group: Hepaticojejunostomy with Roux-en-Y was done in 14 patients (73%),5 patient's underwent, Choledocho-jejunostomy in 2,Choledochoduo-denostomy 1, Primary end-end anastomosis in 1, and in 1 patient whippl's procedure with Roux-en-Y hepaticojejunostomy was performed. The strictures weretype1. (1), type11. (12),and type111. (6).Morbidity was (21%) 3 wound infections, and 1 patient had cholangitis. Mortality was 5.7%. Restenosis occurred in 1 patient 5.7% at the 32 month follow up.

Outcome: Endoscopic group MEAN +_SD follow up time was 9 +_ 5.2 months and 26+_ 8.6 months in the Surgery group. Hospital stay was higher for surgical group (9.5 days vs 5.4 days: $p<0.05$). Morbidity was high in endoscopic than surgery group (6 vs 4). Hospital mortality was 5.7 %, 1 patient died in each group. In endoscopic group 4 patients developed recurrent stricture (25%) requiring resenting and 1 patient underwent hepaticojejunostomy. While in surgery group, 1 patient developed a late restenosis after 32 months, requiring revision hepaticojejunostomy.

Surgery achieved excellent or good result in 16 patients (84%), and fair or poor results in 3 patients (16%). Endoscopic biliary stinting was successful (excellent or good) in 12 patients (75%) and fair or poor results in 4 patients (25%). Overall excellent or good results were achieved in 27 patients (77%) and fair or poor results in 8 patients (23%).

No statistically differences was found between treatment groups, except for the length of hospital stay and serum bilirubin level, which achieved a borderline significance. However univariate analysis showed significance of the albumin and serum bilirubin on the outcome.

DISCUSSION

The benign biliary stricturesrepresent a significant clinical problem.The treatment goal for these patients is long-term absence of symptoms.[14]

Various studies[15] have reported bilio-enteric anastomosisa good modality for the treatment of benign biliary strictures.[6] However outcome of repair of benign biliary stricture is difficult to evaluatebecause reports in the literature don't discern morbidity and mortality directly associated with the primary or secondary stricture repair.[16]

Although excellent or good results with surgery is 90-95%, with a morbidity of 18-26%[4]. Advances in endoscopic technology have increased non-operative options[18]. The endoscopy has an excellent or good results up to 80%,with morbidity 36-40%[19]. It is difficult to compare endoscopic and surgical treatment, because of the variable criteria in selecting the patients[20]. Surgical modality is considered the definitive treatment for benign biliary strictures[21]. There are, reports of endoscopic treatment result comparable with surgery, with lower morbidity and mortality[22]. Nevertheless, stricture dilatation and stent insertion is still regarded as a second line or bridging therapy to surgery ,The limitations of nonsurgical management are (1) the need for multiple procedures (2) Morbidity by stent dysfunction[10]. Endoscopic therapy is difficult to compare with surgical due to lack of both randomized trial and agreement on definition for successful outcome.[18] In the absence of randomized control trial, Case series with careful patient selection, strict definition of successful outcome, and long follow up provide the most accurate information on success rate.

Tocchi A, studied 42 patients with BBS (6), with follow up longer than 60 months. 20patients were treated with endoscopic stenting and 22 with surgery. Morbidity was more in endoscopic than surgical group (9 vs 2; P = .34). Surgery achieved excellent or good long-term outcome in 17 of 22 patients. Endoscopic stenting was successful in 16 of 20 patients.

In our study 35 patients with BBS, Nineteen (19) patients underwent surgical treatment (bilo-enteric anastomosis), and 16 were treated with endoscopy. In surgical group excellent or good results were achieved in 16 patients (84%). Endoscopic group12 patients achieved excellent or good results (75%)Endoscopic group had more complications, 6 had cholangitis, and 1 patient developed restenosis. Surgical group had 3 wound infections and 1cholangitis.

In a retrospective study[23] the surgeryhad success rate of 88% as compared to Endoscopic which achieved 55 % success rate[5].Draganov et al[10] Reviewed retrospectively 29 patients, Endoscopic was successful in 18 (62%). Therapy failed in 11 (38%) patients. Out 11 patients, 4 underwent Roux-en-Y hepaticojejunostomy, 5 underwent restenting.

The endoscopic stenting is greatly useful not only as a bridgetherapy, Butalso as definitive treatment in patients with associated medical disease. However endoscopic stenting has many disadvantages.[26]

BBS secondary to inflammatory condition like, chronic pancreatitis, is difficult to managed endoscopically[24],

Hepatojejunostomy has good results in the literature, Tocchi et al[15], 84 patients with post traumatic bile strictures, 42 underwent, Hepatico-jejunostomythe mortality was 2.2% and morbidity 21%.The commonest complications were wound infection. Excellent or good result was achieved in 83% and fair or poor results in 17%.[6]

In our series out of 19 surgery group patients, 14 underwent hepaticojejunostomy (73%). excellent or good results was 79% and fair or poor results was 16%.

We achieved a follow up (mean 2 years), maximum 8 years in surgical group, in endoscopic group a mean follow up (9 months) and maximum 7 years. The patients leveltype1 and type 11 strictures had the best

prognosis with hepaticojejunostomy. The type 111 and type 1V has comparatively poor results.

Farizio et al[27] The basic principle forbiliary-enteric anastomosis are (1) expose the healthy portion of bile duct (2) perform muco-mucosal anastomosis (2) avoid tension (3) performed water tight anastomosis with single layer of interrupted stiches.[30]

In conclusion optimal management of patients with bile ducts injuries and strictures in the current era remains surgical reconstruction. First step is ERCP to define the stricture stenting to relieve obstruction, followed bysurgical reconstruction with Roux-en-Y hepaticojejunostomy associated with success rate of more 90%.

We feel at present time on the basis of our results and those in the literature, the surgical option is the best for management of benign biliary strictures. However it still need to be confirmed by randomized controlled trials.

CONCLUSION

The study shows better results with surgery group, as compared to endoscopic group. The endoscopic group has a high recurrent rate and morbidity need for multiple procedures.

Author's Contribution:

Concept & Design of Study:	Allauddin
Drafting:	Abdul Kareem Zarkoon, Azmatulah
Data Analysis:	Gulalai Rehman, Nadia Niaz
Revisiting Critically:	Allauddin, Abdul Kareem Zarkoon
Final Approval of version:	Allauddin

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Combination of Sofosburvir and Daclatsvir in the treatment of Hepatitis C Genotype 2 and Genotype 3

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ABSTRACT

Objective: To see the result of combination of Sofosburvir and Daclatsvir in the treatment of Hepatitis C Genotype 2 and Genotype 3

Study Design: Observational intent-to-treat study

Place and Duration of Study: This study was conducted at the Department of Medicine, Lady Reading Hospital, Peshawar from January 2020 to December 2020.

Materials and Methods: 172 HCV patients i.e., HCV genotype 2 and genotype 3were included. Qualitative PCR including genotyping were done for all these patients. Liver status was evaluated through ultrasound. All patients were given combination of Sofosbuvir 400mg OD and Daclatasvir 60mg OD ± Ribavirin 400mg TDS. SVR was obtained at 12 weeks. Data was analyzed by SPSS version 22.

Results: Among 172 patients, 76 (44.2%) were males and 96 (55.8%) were females. The mean age was 40.84 years ± 12.0 SD. In these patients, 52(30.2%) patients and 120 (69.8%) were HCV genotype 2 and genotype 2 respectively. Among these patients, 86.1% of patients with HCV genotype 3 and 84.1% of HCV genotype 2 patients achieved SVR at 12 weeks. Sixty percent of the cirrhotic patients and 91.2% of those patients who had previously experienced treatment, obtained SVR at 12 weeks. Ninety-two percent male patients and 94.8% of female patients obtained SVR at 12 weeks.

Conclusion: Combination of Daclatasvir and Sofosbuvir with or without Ribavirin (DCV+SOF±RBV) have impressive results in achieving SVR at week 12 while treating HCV genotype 2,3.

Key Words: Chronic HCV, genotype 3, genotype 2, Sofosbuvir, Daclatasvir

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INTRODUCTION

It has been estimated that around 71 million people are infected with chronic hepatitis C globally with an estimated prevalence is 2.5% (1.8% to 5.6%). Globally, genotype 3 is the second most common strain, responsible for 30% of HCV infection, followed by genotype 2 (9%), genotype 4 (8%), and genotype 6 (5%). In Pakistan, HCV prevalence is 3.8% (92.8%-3.9%) with genotype 3(79%) and genotype 2(2.6%)[1-4].

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Direct-acting antiviral agents (DAAs) have shown excellent results by providing high rates of SVR in patients infected with any subtype of HCV[5].

Sofosbuvir, an NS5B polymerase inhibitor, has been evaluated in combination with Daclatasvir, an NS5A inhibitor, for clinical trials in the treatment of CHC genotype 2 and genotype 3 with 92% to 100% SVR at 12 or 24 weeks for genotype 2 and 86% to 97% SVR in genotype 3 patients[6]. These patients experienced this combination as treatment- naïve or have already experienced Ribavirin or pig interferon. In patients with liver cirrhosis, the SVR rates are usually 70% to 89% with 12 to 24 weeks with SOF+DAV±RBV[7,8].

This above-mentioned combination is effective in other subtypes of HCV, making it possible to eliminate hepatitis C from the world as aimed by WHO till 2030 defined as a 90% reduction in new cases and 65% reduction in mortality[9,10]. However, in resource-poor countries, this achievement seems to be difficult due to affordability issues[11].

In this study, we had given the combination of Sofosbuvir and Daclatasvir with or without Ribavirin to the patients infected with CHC genotype 2 and genotype 3 and obtained the SVR at 12 weeks.

MATERIALS AND METHODS

In this open-label, phase II observational intent-to-treat study, 172 patients were enrolled which was conducted at the department of medicine Lady Reading Hospital, Peshawar from January 2020 to December 2020. Patients aged >18 years and both gender were included. Those patients who did not experience treatment or those who experienced treatment, both, were included. Informed consent was taken from all the patients and data was collected on the predesigned preform. PCR HCV was done for all of the patients. Liver status was evaluated through ultrasound by CPSP qualified radiologist. All the patients were allowed for baseline investigations including full blood counts, liver functions, and renal functions tests. All the patients were given SOF + DCV ± RBV for 12 weeks. Those patients who had experienced treatment before or those who had cirrhotic liver on ultrasound were given SOF + DCV + RBV while the rest of the patients who had not experienced treatment or who had normal liver on ultrasound were given SOF + DCV. All the patients who had given this particular regime were planned for PCR at 12 weeks. All the data were entered into and analyzed by SPSS version 22. Mean and standard deviation were calculated for numerical variables while percentages and frequencies were calculated for categorical variables. For comparison of categorical variables, Chi-square test was applied while student t-test was applied for comparison of numerical variables. Statistical significance level was considered as $p < 0.05$.

RESULTS

Among these 172 patients, 76 (44.2%) were males and 96 (55.8%) were females. Mean age 40 ± 12.23 years. Ninety-one patients (53%) were in young aged group, defined as aged 18-40 years. Seventy-one patients (41.3%) were in middle-aged group (40-60 years). While 10 patients (5.7%) were in elderly-aged group i.e., aged >60 years. Among these patients, 120 (69.8%) patients were infected with HCV genotype 3 and 52 (30.2%) patients were infected with HCV genotype 2. Among these 172 patients, 138 (80.2%) patients did not experienced treatment while 34 (19.8%) patients experienced treatment either with Sofosbuvir + Ribavirin or with interferon. On ultrasound, 157 patients (91.3%) had normal liver status while 15 (8.7%) patients had cirrhotic liver. Among these 172 patients treated with SOF + DCV ± RBV, 161 patients (93.6%) had SVR at 12 weeks, while the remaining 11 patients (6.4%) did not achieve SVR at 12 weeks. Among the 120 patients with HCV genotype 3, 114 patients (95%) achieve SVR at 12 weeks while the remaining 6 patients (5%) didn't achieve SVR at 12 weeks. While those 52 patients infected with HCV genotype 2, 47 patients (90.4%) achieve SVR at 12 weeks while the remaining 5 patients (9.6%) did not achieve SVR at 12 weeks.

Table No.1: Distribution of patients

Gender wise distribution	Males 76 (44.2%)	172 (100%)
	Females 96 (55.8%)	
Genotype wise distribution	genotype3 HCV 120 (69.8%)	172 (100%)
	Genotype 2 HCV 52 (30.2%)	
Aged wise distribution	Young aged (18-40 years) 91 (53%)	172 (100%)
	Middle-aged (41-60 years) 71(41.3%)	
	Elderly aged (>60 years) 10 (5.7%)	
Treatment experienced	Did not experience Rx 138 (80.2%)	172 (100%)
	Experienced Rx 34 (19.8%)	
Liver status on ultrasound	Normal liver 157 (91.3%)	172 (100%)
	Cirrhotic liver 15 (8.7%)	

Table No.2: Results of the study

Patients	SVR at 12 weeks	Did not achieve SVR at 12 weeks
172 patients (100%) in total	161 patients (93.6%)	11 patients (6.4%)
HCV Genotype 3	114 patients (95%)	6 patients (5%)
HCV genotype 2	47 patients (90.4%)	5 patients (9.6%)
157 patients with Normal liver US status	152 patients (96.8%)	5 patients (3.2%)
Cirrhotic liver on US 15 patients	9 Patients (60%)	6 patients (40%)
Treatment not experienced 138	130 patients (94.2%)	8 patients (5.8%)
Treatment experienced 34	31 patients (91.2%)	3 patients (8.8%)
Male patients 76	70 patients (92%)	6 patients (8%)
Female patients 96	91 patients (94.8%)	5 patients (5.2%)

In both HCV genotype 2 and genotype 3, SVR results were tested with age and sex but the results were

statistically not significant. Among the 157 patients having normal liver status on ultrasound 152 (96.81%) achieved SVR at week 12 while the remaining 5 patients (3.19%) did not achieve SVR at week 12. Among 15 cirrhotic patients, 9 patients (60%) achieve SVR at week 12 while the remaining 6 patients (40%) didn't achieve SVR at week 12. Among 138 patients who did not experience treatment before, 130 patients (94.2%) achieve SVR at week 12 while the remaining 8 patients (5.8%) did not achieve SVR at week 12. Among those 34 patients who experienced treatment either with SOF + RBV or with interferon, 31 patients (91.2%) achieve SVR at week 12 while the remaining 3 patients (8.8%) did not achieve SVR at week 12. In gender-wise distribution, 70 male patients (92%) achieve SVR while 6 patients (8%) didn't achieve SVR at week 12. In females, 91 patients (94.8%) achieve SVR while 5 patients (5.2%) did not achieve SVR at week 12. Among the 11 non-responder patients, 3 (27.3%) were in young-age group (18-40 years), 7 patients (63.6%) were in middle-aged group (40-60 years) while one patient (9.1%) was in elderly-aged group (>60 years). The most common adverse events were headache, fatigue, nausea, and skin rashes.

DISCUSSION

HCV is considered to be endemic in Pakistan and an estimated 6.8% of the Pakistani population is infected with HCV which is around 40% increase in seroprevalence of HCV in recent years[12]. Data suggests that SOF based oral regimens are considered to be the most effective in the treatment of HCV and once-daily regimen of sofosbuvir/daclatasvir is associated with high SVR rates among patients infected with HCV genotype 1,2 and 3[13,14]. The results of this study show that sofosbuvir/daclatasvir± ribavirin are effective in the treatment of chronic HCV genotype 2 and 3, both in naïve and treatment-experienced as well as cirrhotic patients.

Results of a meta-analysis conducted by Li T et al. suggest that SVR rates for DAAs are 66.7 to 98.3%. The results of our study are consistent with it[15]. (table #2)

In our study, the cure rate for HCV genotype 2 and genotype 3 was 90.4% and 95% respectively by achieving SVR at 12 weeks which is consistent with the results of Belperio PS et al. They concluded in their study that the cure rate for HCV genotype 2 and genotype 3 was 94% and 90% respectively. We also concluded that Ribavirin does not affect the cure rates which is also consistent with Belperio PS et al[16]. In our study, SVR rates were low in cirrhotic patients i.e. 60% SVR at 12 weeks VS 94.2% in treatment-naïve patients and in treatment-experienced patients i.e. SVR 91.2% VS 94.2% at 12 weeks which is also consistent with Belperio PS et al.

Wehmeyer MH et al conducted a multicenter study on a different treatment regimens of HCV genotype 3. They achieved an SVR of 90% at 12 weeks which is consistent with the results of our study. They also concluded that daclatasvir/sofosbuvir ± ribavirin is effective in treating-naïve, cirrhotic and treatment-experienced HCV genotype 3 patients which is also consistent with the conclusion of our study[17].

Tacke F et al conducted a cohort study on the treatment of HCV genotype 2 and concluded that patients treated with daclatasvir/sofosbuvir ± ribavirin achieved SVR up to 90% which is consistent with the results of our study. They also concluded that SVR rates were low in cirrhotic patients which supports the results of this study as well[18].

Sulkowski MS et al. Concluded in their study that the single daily regimen of Sofosbuvir/Daclatasvir had 92% and 89% SVR in HCV genotypes 2 and 3 respectively which is also consistent with the results of our study[19].

Moshyk A et al. Concluded in their study that Sofosbuvir/Daclatasvir combination was effective in treating chronic HCV treatment-experienced patients which is consistent with the results of our study and found in cost effective comparatively[20].

Zanaga LP et al. concluded in their study that the combination of Sofosbuvir and Daclatasvir had an SVR of 59-69% in chronic HCV genotype 3 cirrhotic patients which is consistent with the results of our study[21].

Mushtaq S et al. Conducted a study on the treatment of chronic HCV and concluded that Sofosbuvir/ Daclatasvir + Ribavirin had SVR of 94% in chronic HCV genotype 3 patients which is consistent with the results of our study. They also concluded that SVR was lower in patients with advanced liver diseases which is again consistent with our study[22].

CONCLUSION

Generic Sofosbuvir /Daclatasvir + ribavirin achieve high SVR rates in chronic HCV genotype 2 and 3. This combination is safe, effective and well-tolerated in patients with liver cirrhosis as well.

RECOMMENDATIONS: Further studies with large sample size are recommended for clarifying this regimen further and for optimal duration particularly in patients with liver cirrhosis.

Author's Contribution:

Concept & Design of Study:	Ziauddin,
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Oral Leisons in Cancer Patients Receiving Chemotherapeutic Treatment in Fauji Foundation Hospital

Farah Farhan[1], Faiza Hassan[1], Batool Zara[2], Muhammad Wajahat Ghafoor[3], Amna Talaat[1] and Aroma Irfan Qureshi[1]

ABSTRACT

Objective: To establish an association between effects of chemo therapeutic treatment in oral cavity in cancer patients reported in Fauji Foundation Hospital.

Study Design: Randomizes controlled trial study

Place and Duration of Study: This study was conducted at the Fauji Foundation Hospital among dental students and patients from May to July 2019.

Materials and Methods: Cross-sectional study was conducted in Fauji Foundation Hospital, Pakistan from 1st May to 24th July 2019. Sample size of 100 patients was examined for oral manifestations. They were undergoing various cycles of cancer chemotherapeutic treatment. Treatment included cycles of chemotherapy and radiation. The study included patients of various types of cancers including Squamous Cell Carcinoma, Carcinoma breast, non-Hodgkin's lymphoma, chronic myeloid leukemia etc. A scale with end points NO ORAL DISCOMFORT to WORST IMAGINABLE ORAL DISCOMFORT was used. History taking and non-invasive intra oral examination was carried out to check for any lesions, ulcers, pigmentation, xerostomia, taste alterations etc. Data was analyzed using SPSS version 21.

Results: This was an observational type of study that included patients suffering from various malignancies. Overall 100 patient's data were collected for this study. Lesions were seen in 76% of patients, of which 65% patients reported with ulcerative lesions, 21% with white lesions and 13% other category lesions. The most common symptomatic finding included taste alteration seen in 94% of patients and 74% with xerostomia

Conclusion: This study suggests that the patient's quality of life is related to chemotherapy cycles. Patients undergoing chemotherapy reported milder symptoms than patients undergoing radiotherapy. Xerostomia and taste alterations were among most significant findings. Data showed a correspondence between oral manifestations and cancer chemotherapeutic treatment.

Key Words: Oral manifestations, carcinoma, chemotherapy, taste alterations

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INTRODUCTION

Cancer can be defined as a group or collection of related diseases involving abnormal cell proliferation with the ability to invade or spread to other parts of the body. Cancer is having a diverse aetiology ranging from age extremes to pathogens. Cancers usually begin as uncontrolled cell growth lacking differentiation. They may form growths called tumors. Tumors can be benign or malignant. The factors that decide whether a tumor is benign or malignant include rate of growth, extent of differentiation, local and distant metastasis etc.The most common type of cancer are those arising from epithelial cells.

Cancers arise from various types of tissues including bone, soft tissue and blood. Major head and neck tumors include tumors of the salivary glands, pleomorphic adenoma, Warthin's tumor, adenoid cystic carcinoma.Oral lesions are a common manifestation as a side effect in patients receiving cancer treatment either due to anticancer drugs or radiation. These oral lesions affect morbidity and in some cases may also effect mortality of severely immune-compromised patients. Some systemic fungal or bacterial infections caused by opportunistic bacteria in the normal flora due to immunosuppression may even lead to formation of new cancers.

The recent advances in cancer treatment has not only affected previously recognized oral complications but

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are also becoming a source of producing new side effects.

Treatment options include chemotherapy, radiotherapy and surgical interventions. Choice of treatment depends on extent and severity of disease.

Chemo-radiation therapies are the mainstay of treatment for locally advanced head and neck cancers or as adjuvants for tumors with poor clinical features. All of these techniques have varied intensities and surface of radiation exposure hence oral complications also differ in each of the therapies. The most noted complication is Xerostomia. Chemotherapeutic drugs, which are also used as adjuvants to radiation and/or surgery have very high potential of causing oral mucositis. Mucositis does not affect mortality to that extent but may interfere with further chemotherapeutic treatment.Common drugs causing mucositis include are fluorouracil, methotrexate and doxorubicin. Other drugs also include azathioprine, cediranib etc.

Chemotherapy induced oral lesions pose significant morbidity in patients. Mucositis, candidiasis, radiation caries, osteoradionecrosis, soft tissue necrosis, progressive periodontal attachment loss, trismus and xerostomia are some complications of chemotherapeutic treatment. Quality of life is also affected by Increase the use of antibiotics, narcotics, length of hospitalization and Increase the overall cost of treatment.

Mortality of patients is also affected. Some chemotherapy induced oral lesions like Lichen planus and oral sub-mucous fibrosis are the most common oral mucosal diseases that have a very high malignant transformation rate.

Post therapy follow ups should be arranged. A simple lesion would not appear as harmful to the patient due to lack of proper knowledge, but may convert to malignancy. To prevent such consequences oral health care should be provided to patients receiving chemotherapeutic treatment. A good and properly maintained oral hygiene and gingival condition during chemotherapy lead to a less chances and severity of oral complications.

To establish an association between effects of chemo therapeutic treatment in oral cavity in cancer patients reported in Fauji Foundation Hospital.

MATERIALS AND METHODS

This was a cross-sectional study carried out at Fauji Foundation Hospital 1st May to 24th July 2019. Non-invasive oral examination was carried out for 50 cancer patients receiving treatment at FFH Islamabad. Oral symptoms and visible oral lesions were evaluated and recorded. Oral manifestations were scored on a scale with end points i.e. No Oral Discomfort To Worst Imaginable Oral Discomfort.

The research team members visited inpatient wards of oncology department Fauji Foundation Hospital. Each patient was separately examined for oral lesions in the wards. Examination performed was non-invasive oral examination. Each patient was explained the procedure and reasons for performing such examination in terms easily understood by the patients. Patients were asked individually for informed consent (after explaining procedure properly).

Separate set of sterile instruments were used for each patient keeping in view cross infection control measure. Examination included mirrors, tongue retractors, torches, gauze, cotton swabs and gloves. After examination the results for individual patients were recorded. The results were compiled and final statistics and results were summarized using SPSS 21.

The study did not require photographs or any specific Bio-data e.g. names etc. of patients so confidentiality of patients was fully preserved.

The inclusive criteria of our study is female patients having age of 20 to 80 years, receiving chemotherapy, radiotherapy or both treatment options for any kind of cancer. The exclusive criteria of our study is patients with age greater than 80 years, having comorbidities that can alter results e.g. autoimmune diseases like Sjogren syndrome and those receiving any kind of treatment to supress oral symptoms of these lesions.

RESULTS

This was an observational type of study that included patients suffering from various malignancies. Overall 100 patient's data were collected for this study. Patients of Carcinoma breast, Carcinoma ovaries, lymphomas, squamous cell carcinomas etc. were included as mentioned in chart 1.

Most of these examined patients were undergoing chemotherapy and some were receiving radiotherapy illustrated in chart 2.

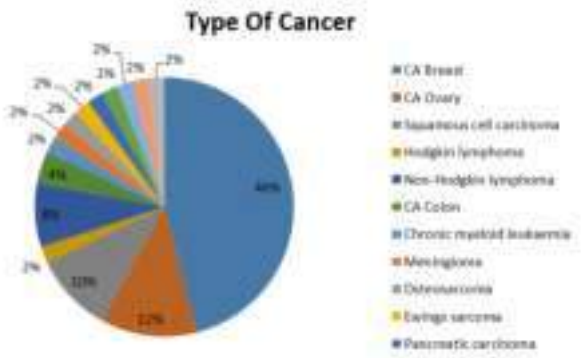

Chart No.1: Type of cancer

Lesions were seen in 76% of patients, of which 65% patients reported with ulcerative lesions, 21% had white lesions and 13% had other category lesions. In our study during chemotherapy the most common symptomatic finding included taste alteration and oral ulcers are seen in 94% of patients and xerostomia seen

in 74% of patients. Other symptomatic findings like ptylism, odynophagia, sore throat and osteoradionecrosis were among less common findings.
Based on these manifestations when the patients were asked about oral discomfort following statistics were obtained illustrated in chart 3.

Chat No.2: Therapy options

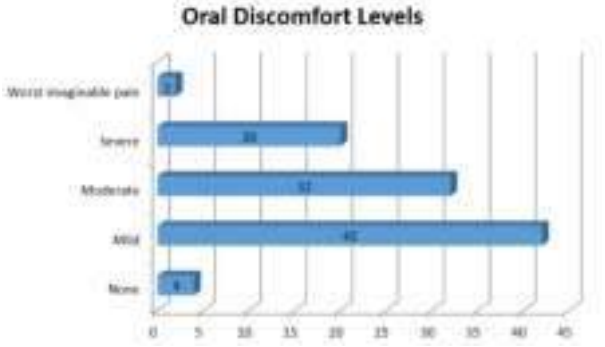

Chart No.3: Oral Discomfort Levels

DISCUSSION

This study was carried out basically to establish an association between oral lesions and cancer chemotherapeutic treatment. Firstly it should be well understood that not all patients who undergo cancer treatment are at equal risk of developing oral lesions. Nevertheless, as the study revealed, the fact that it is a common circumstance to observe oral lesions in patient receiving cancer chemotherapy cannot be ignored.Chemotherapeutic drugs, used as adjuvants to radiotherapy and/or surgery have a very high risk of causing oral mucositis .The oral complications of chemotherapy are either due to Direct Stomatological Toxicity , that is direct action of the drug upon the oral mucosa, or an Indirect Stomatological Toxicity , that is indirect consequence of chemotherapeutic drug-induced bone marrow suppression or myelosuppression .
Chemotherapy can result in a temporary but rather clinically significant decrease in salivary flow that later improves as the bone marrow recovers. Such a decrease in salivary flow in turn results the appearance of mucositis. The symptoms of xerostomia or dry mouth include generalized dryness of mouth, burning sensation or discomfort (especially of the tongue), changes in the tongue surface, cracked lips, and problems in wearing removable dentures especially pertaining to oral ulcerations. Xerostomia condition may lead to a metallic taste sensation that subsequently results in Dysgeusia and Glossodynia secondary to the effects of chemotherapy upon the tongue papillae and demineralization of the nerve fibers.It was observed that oral symptoms intensified during chemotherapy thus required professional dental care. The most common symptoms included xerostomia, ulcers and sore throat other than dysphagia and odynophagia.
After compiling statistics an association between stage of cancer, extent of treatment and oral lesions was seen in patients who underwent examination. The statistics of the study manifested an association between cancer treatment and appearance of oral symptoms. However, it has some limitations due to the diverse aetiology of these oral lesions the confounding effect of various variables cannot be overlooked. Hence the results of the study are affected by various factors.
This study was carried out as a cross sectional study in which the participants/patients were randomly selected as per convenience of time and place. Hence the sample was not a representative of the whole population. Moreover, during the time of study no male patients reported to oncology OPD hence the sample did not represent data of male patients.
This study opinionated that it should be carried out on a larger scale on a more representative population. Once the results are confirmed, professional dental care should be provided to cancer patients to improve morbidity. Post therapy follow ups should be arranged. Patients should be provided post therapy dental care, so if any potentially malignant lesion appears as a result of treatment it can be addressed promptly. A simple lesion may convert to malignancy so to prevent such consequences oral health care should be provided to patients receiving chemotherapeutic treatment. Meticulous oral hygiene and a good gingival condition during chemotherapy lead to a less likelihood and severity of mucositis.

CONCLUSION

Patients undergoing chemotherapy reported milder symptoms then patients undergoing radiotherapy. Chemotherapy results to a temporary but clinically significant decrease in salivary flow that improves as the bone marrow recovers. Xerostomia and altered taste sensations were among the most significant findings. Data showed a correspondence between oral manifestations and cancer chemotherapeutic treatment.

Author's Contribution:

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Diagnostic Accuracy of Doppler Ultrasound in Diagnosis of Morbidly Adherent Placenta (MAP) Keeping per Operative Diagnosis as Gold Standard

Maham Munir Awan[1], Uzma Shaheen[2], Afshan Noreen[3], Farah Kalsoom[4], Neelam Malik[1] and Irum Aslam[3]

ABSTRACT

Objective: To determine the accuracy of Obstetrical Doppler ultrasound as a diagnostic modality in detection of patients with morbidly adherent placenta (MAP) and keeping per operative diagnosis as gold standard.
Study Design: Cross sectional study
Place and Duration of Study: This study was conducted at the department of Radiology Nishtar Hospital Multan from March 2020 to March 2021 in one-year duration.
Materials and Methods: A total of one hundred and eighty patients were enrolled in study. Positive predictive value, negative predictive value, sensitivity, specificity and diagnostic accuracy were main variables of study. SPSS version 23 was used for data analysis. Tests of significance were applied and p value ≤0.05 was taken as significant.
Results: The estimated sensitivity was 87.0%. The estimated specificity was 85.1%. Positive predictive value was 66.7% and negative predictive value was 95.0%. The overall diagnostic accuracy was found as 40.6%.
Conclusion: Diagnostic accuracy of transabdominal Color Doppler ultrasound is much higher in detection of morbidly adherent placenta. It is safe, useful and easily available imaging technique for diagnosis of potentially harmful and life threatening obstetrical conditions.

Key Words: Doppler ultrasound, morbidly adherent placenta, diagnostic accuracy, sensitivity, specificity

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INTRODUCTION

Morbidly adherent placenta (MAP) is a condition that covers different abnormalities of placenta like abnormal adherence of placenta to underlying wall of uterus [1]. In this condition placenta may be partially or fully abnormally attached to implantation site [2]. Extent of trophoblastic involvement or invasion via uterine serosa and myometrium are main determinant of MAP and its variants. Morbidly adherent placenta s variants include placenta accreta, increta and percreta.

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Frequency of MAP is increasing day by day because of increase in number of cesarean deliveries. It was noted about 8.7% increase in cesarean section deliveries every year [3].

In Pakistani population after uterine atony and rupture MAP is the 3rd most common cause of emergency obstetrical hysterectomy. It is a life threatening condition which can lead to many complications such as need for blood transfusion [4], maternal heamorrhage, damage to adjacent organs, peripartum hysterectomy, need of ventilator support, ICU admission, and morbidities[5].

Ultrasonography in antenatal period considered as main diagnostic tool for MAP and its complications. Myometrial invasion can easily be predicted with Doppler ultrasound when myometrium involved more than Imm with large placental lakes [6]. Prenatal diagnosis of MAP results in reduction of morbidities due to MAP because of planned treatment during pregnancy. In ultrasonography (USG); Color doppler ultrasound have capability of easy detection of abnormal placental attachment and myometrial involvement[7].

Diagnostic accuracy of color Doppler ultrasound was documented 97.1% in previous literature when used for antenatal diagnosis of invasive placentation in gravid females[8]. Preoperative diagnosis of MAP is the ultimate diagnostic approach as it allows obstetricians to examine the degree of placental invasion in myometrium with naked eyes [9]. In a study, prevalence of morbidly adherent placenta was found to be 28.0% and sensitivity and specificity of ultrasonography in diagnosing morbidly adherent placenta as 85.7% and 83.3% respectively [10]. 1n another study, sensitivity and specificity of ultrasonography in diagnosing morbidly adherent placenta was found to be 50.8% and 86.4% respectively [11]. Prenatal diagnosis of morbidly adherent placenta is very important as this helps in timely management of complications by involving multidisciplinary team care i.e., obstetricians, pediatricians, surgeons, radiologists [12]. This reduces the maternal and perinatal mortality. Since there is variation in previous literature and also local study has shown variable results as compared to other available studies, so, there is a need of re-evaluation of its results in local population [13,14].

The rationale of this study is that results of our study will provide an accurate imaging modality for accurate prenatal identification of morbidly adherent placenta and will help clinicians for optimal obstetric management, because site of delivery, timing of delivery, availability of blood products and recruitment of a skilled surgical and anesthesia team can be organized in advance.

MATERIALS AND METHODS

This study was conducted at radiology department of Nishtar hospital, Multan from March 2020 to March 2021 in one-year duration. The study was subjected to approval by the hospital ethical board. After approval, patient recruitment was started. Thorough history, examination and investigation were done by senior residence officer. Informed written consent was taken from the patients after detailed purpose and objective research. Sampling technique was based on non-probability consecutive sampling. Patients of age 20-45 yrs, gestational age more than 28 weeks, patients having previous vaginal or abdominal deliveries, with ultrasound finding of obliteration of space between uterus and placenta were included in the study. Patients maternal bleeding disorders, placenta abruption on ultrasound. Sensitivity of Doppler ultrasound was calculated as ability of identification true positive cases for diagnosis of morbidly adherent placenta also termed as true positive rate. Similarly, specificity of Doppler ultrasound is calculated as ability of identification of true negative cases for morbidly adherent placenta also labeled as true negative rate. Positive cases in Doppler ultrasound for intraoperative finding for MAP were labeled as True positive. Negative cases in Doppler ultrasound for intraoperative finding for MAP were labeled as True negative. Normal intraoperative findings for MAP and positive for Doppler ultrasound were labeled as false positive cases. Intraoperative positive findings for MAP and negative for Doppler ultrasound were labeled as false negative. Positive predictive value calculated as cases with Doppler ultrasound findings positive for morbidly adherent placenta should be true positive. Negative predictive value is calculated those cases with Doppler ultrasound findings negative for morbidly adherent placenta should be true negative.

Patients with presence or absence of abnormal placental invasion were investigated by Doppler ultrasound (done by a consultant sonologist with at least 3 years post-fellowship experience) and were followed till their surgery; whether elective or emergency by senior residence officer. Doppler ultrasound has findings in patients of morbidly adherent placenta as exophytic mass invading bladder, interruption of posterior uterine serosa-bladder interface, obliteration of space between uterus and placenta, morbidly adherent placental Variants. Per operative findings in patients with the diagnosis of morbidly adherent placenta as blood vessels invading myometrium, invasion of vessels into adjacent structures e.g bladder, placenta not separated. Surgery was planned after decision made jointly by patient and obstetrician. Details of medical and obstetric history and information on the intraoperative was recorded and analyzed.

SPSS version 23 was used for data entry and analysis. Mean value and standard deviation was calculated for quantitative variables like age, gestational age and number of previous cesarean sections and qualitative variables like parity, gravidity, history of previous C-section and presence/absence of morbidly adherent placenta on USG and operative findings were presented as frequency and percentages. Sensitivity, specificity, positive and negative predictive values were used for calculation of diagnostic accuracy of Doppler ultrasound and preoperative findings. Test of significance were applied and p value ≤ 0.05 was taken as significant.

RESULTS

One hundred and eighty patients were included in this study.The mean age, gestational age, mean number of previous caesarean sections and parity of the patients was 31.93±4.12 years, 31.48±1.47 weeks, 1.95±0.57 caesarean sections and 1.58±0.49 paras, respectively. Gravidity distribution of the patients was recorded as n=25 (13.9%) patients had 1 gravidity, n=61 (33.9%) had 2 gravidity and n=94 (52.2%) patients had 3 gravidities. History of previous caesarian section was recorded in n=55 (30.6%) patients. All the patients were subjected to color Doppler ultrasound. While,

morbidly adherent placenta findings intra operatively was presented in n=46 (25.6%) patients. (Figure. I).

It was observed that 40 patients with morbidly adherent placenta findings intra operatively as well as on Doppler ultrasound, known as true positive. Twenty patients were found with morbidly adherent placental findings intra operatively but absent on Doppler ultrasound known as false positive. Six patients had morbidly adherent placental findings intra operatively but absent on Doppler ultrasound, labeled as false negative. 114 patients had absent on morbidly adherent placenta findings intra operatively and also on Doppler ultrasound known as true negative. The difference was statistically significant (χ^2=79.95,d.f=1, odds ratio=38.0, p=0.000) (Table .I).

Therefore, the estimated sensitivity was 87.0%. The estimated specificity was 85.1%. Positive predictive value was 66.7% and negative predictive value was 95.0%. The overall diagnostic accuracy was found as 40.6%(Table. II).

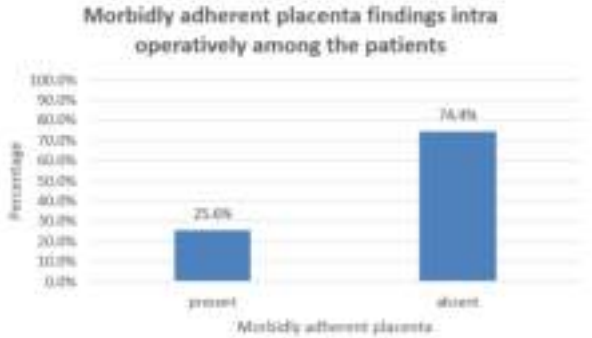

Figure No.1

Table No.1: Comparison of morbidly adherent placenta Doppler ultrasound and morbidly adherent placenta findings intra operatively

Doppler ultrasound	Morbidly adherent placenta findings intra operatively		Total	P-value
	Positive	Negative		
Positive	True positive 40	False positive 20	**60**	0.000
Negative	False Negative 6	True negative 114	**120**	
Total	**46**	**134**	**180**	

Table No.2: Diagnostic Accuracy

Diagnostic Measures	Value
Sensitivity	87.0%
Specificity	85.1%
Positive Predictive Value (PPV)	66.7%
Negative Predictive Value (PPV)	95.0%
Diagnostic accuracy	40.6%

DISCUSSION

Doppler ultrasonography during antenatal period is a main diagnostic tool that helps obstetricians for early detection and management of morbidly adherent placenta (MAP)[15].

On other hand ultrasound is a safe and cost effective radiological modality which is a complete alternative replacement of high cost diagnostic tools like magnetic resonance imaging (MRI) specifically in low cost or under developed countries. In under developed countries poverty, low education rate and lack of awareness about family planning increase the number of pregnancies that can cause placenta previa, uterine surgeries and abnormal attachment of placenta[16].

In our study diagnostic accuracy of Doppler ultrasound was found 40.6% when per operative findings were taken as gold standard. A study was conducted by Thai et al[17] in 2007 and reported diagnostic accuracy of color Doppler ultrasound is 97.10% in diagnosis of morbidly adherent placenta during antenatal period. Another similar study was conducted by Khalid et al[18] and reported higher diagnostic accuracy of Doppler ultrasound than our study. Mean age of patients in this study was 27.78+2.65 years while in our study mean age of patients was 31.93±4.12 years.

Our study reveals sensitivity 87.0% and specificity 85.1%. In 2006 Warshak et al[19] conducted a study on use of Doppler ultrasound in detection of placenta previa and reported sensitivity 0.77% and specificity 0.96% and low lying anterior position is most common. But location of placenta previa was not our variable. Calìet al[20] reported similar finding that Doppler ultrasound is main diagnostic tool for placenta previa, not only diagnosis but also useful in pointing the type of placental abnormality either placenta accrete or placenta percreta.

D'Antonio et al[21] conducted a review analysis on comparison of ultrasound and MRI and reported sensitivity and specificity of MRI as 94.4% and 84% respectively and sensitivity and specificity of Doppler ultrasound was 90.75 and 96.9% respectively. Similarly, Menget al[22] reported sensitivity of ultrasound 83% and diagnostic odds ratio was 63.41. These findings were compared with MRI which is detected with 82% sensitivity and diagnostic accuracy 22.9%. Both these studies reported good accuracy of ultrasound and MRI in diagnosis of placental invasion.

Color Doppler USG is widely used diagnostic tool of radiology during antenatal period for screening of placental adherence and localization, in parallel it is safe, cost effective easily available[23]. Doppler ultrasound can easily predict placenta accrete or abnormal adherence of placenta to myometrium. A variable diagnostic accuracy of Doppler ultrasound was found in literature like sensitivity varies from 85-100% and specificity from 35-96%[24].

Another study was conducted by Asghar S et al[25] and concluded that Doppler ultrasound is highly effective

tool in diagnosis of MAP, its accuracy was calculated 87.6% with sensitivity 86.5 and specificity 90.24%.

CONCLUSION

Results of our study reveal that diagnostic accuracy of transabdominal Color Doppler ultrasound is much higher in detection of morbidly adherent placenta. It is safe, useful and easily available imaging technique for diagnosis of potentially harmful and life threatening obstetrical conditions.

Limitations: Most of patients in our study belongs to tribal areas of South Punjab, because of low literacy rate and some religious believes they did not allow them for participation in study, that's why study was conducted on small sample size.

Author's Contribution:

Concept & Design of Study:	Maham Munir Awan
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Data Analysis:	Farah Kalsoom, Neelam Malik, Irum Aslam
Revisiting Critically:	Maham Munir Awan, Uzma Shaheen
Final Approval of version:	Maham Munir Awan

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Fruitful Clinical Results of L-Arginine Supplementation in Illnesses of Various Etiologies

Saleem Ahmed Bhutto[1], Muhammad Muqeem Mangi[2], Abdullah Khilji[1], Zulfiqar Ali Bhatti[1], Rehana Guddi Siddiqui[3] and Mir Khater Ali Talpur[1]

ABSTRACT

Objective: To evaluate pros and cons of L-Arginine supplementation as protective adjuvant against lithium hepatitis in rats.

Study Design: Experimental Study

Place and Duration of Study: This study was conducted at the Basic Medical Sciences Institute, Jinnah Post Graduate Medical Centre, Karachi, Sindh from October 2012 to March 2013.

Materials and Methods: Sixty adult rats were selected and divided into four groups A, B, C and D with further division into three Subgroups based on periods of treatment 2, 6 and 12 weeks respectively. A was control group, B was on lithium, C was on both lithium and Arginine and group D was on Arginine alone. The initial and final body and absolute and relative liver weights of rats were recorded after scarification at the end of each treatment period. Livers were cut into 3um thick sections stained with hematoxylin and eosin for histological & morphometrical examination

Results: The findings in groups A and D were normal while in group B animals body and liver weights were increased with morphological changes.

Group C animals exhibited significant changes in body and liver weights in comparison with B animals with least inflammation and morphological changes due to L-Arginine co-administration with lithium

Conclusion: It is suggested that lithium induced hepatic-toxicity could be attenuated with L-Arginine.

Key Words: lithium, L-Arginine, liver, anti-oxidant, anti-platelet

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INTRODUCTION

One of the anti-psychotic drugs used is lithium carbonate. It is the drug of choice for bipolar disorder routinely used in clinical practice. There is little margin between toxic and safety dose [2]. Lithium reduces the synthesis of cyclic adenosine monophosphate (cAMP) and inhibits the influx of calcium ions by limiting its channel opening [3].

Lithium affects the transport of mono or divalent cations throughout the whole body. It cannot maintain an electrical gradient across biological membranes therefore disturbs the action potential in the brain and the organs.

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Lithium replaces sodium and Potassium for the production of single action potential therefore hampers the transmission processes in the brain. It disturbs the biological clock of brain by disturbing the glycogen synthase kinase 3-beta. Lithium inhibits inositol phosphatase and other important enzymes in the normal recycling of membrane phosphoinositides and G-proteins are made to be uncoupled from their receptors [4, 2].

Lithium produces toxic effects on neuromuscular, cardiovascular, gastrointestinal and renal tissues [5, 2]. Lithium administration significantly reduces the activities of anti-oxidant enzymes in liver, e.g. superoxide dismutase (SOD), glutathione peroxidase (GPx). It also decreases the concentration of malonyl dialdehyde (MDA), abnormally raises lipids e.g. cholesterol, triglycerides, phospholipids, and fatty acids in liver tissues with parallel decline in ATP. Lithium damages the DNA and biological membranes [6, 7].

Basically cytotoxic effects of lithium in the liver tissue are manifested by the disturbance of Nitric Oxide metabolism.[8]

Nitric oxide, in the body and Liver is synthesized by L-arginine a semi-essential amino acid[9]. Hypercholesterolemia, diabetes Mellitus and vascular endothelial dysfunction can be corrected by Arginine via Nitric Oxide metabolism [10].

Keeping in view the above facts, this study was designed to observe the effects of lithium on rat liver with protective role of Arginine and this was done by:

- Observing the morphometric and histological effects of lithium alone and lithium and Arginine combined on rat liver under light microscope.
- Statistical analysis of observations.

MATERIALS AND METHODS

Sixty healthy adult albino rats of Massachusetts breed of either sex, of 90-120 days of age, weighing 200-250 grams were selected for this experimental study. The standard protocol of healthy living and diurnal rhythm of the body and mind to day & Night variation cycle was observed appropriately. All animals were divided into four groups; A, B and C. Each group was further divided into three subgroups e.g. A1, A2 & A3, B1, B2 & B3 and C1, C2 & C3. This subdivision is based on duration of treatment and that period is 2, 6 and 12 weeks respectively. The drugs used in this study were Lithium Carbonate (as "neurolith"-Adamjie Pharma) and L-arginine as "Arginine" (as General Nutrition Corporation- Pittsburg USA).

Group A animals served as Control and were on normal diet alone. Group B animals were treated with Lithium carbonate. Group C animals were given both Lithium carbonate and arginine alone. The Lithium in water and the arginine in feed were administered. The dosage of lithium was 20 mg/kg body weight per day [11] and that of Arginine was 300mg/ kg body weight per day [12].

Initially all the animals were weighed and their initial body weights and final body weights were recorded before scarification after every 2, 6 and 12 weeks of treatment. Livers were carefully removed and weighed to determine absolute and relative liver weights.

Liver was cut into 3 microns thick sections and stained with H&E for morphological examination. Micrometry was done with the help of a stage micrometer scale, Ocular micrometer scale and Ocular counting graticule.

The statistical significance of the differences of various quantitative changes between Lithium Carbonate and Lithium Carbonate + L-arginine treated rats from control rats were evaluated by the students ''t'' test [13], using computer software SPSS version 16 in the windows XP2000. The differences were statistically significant if the P- value was equal to or less than 0.05.

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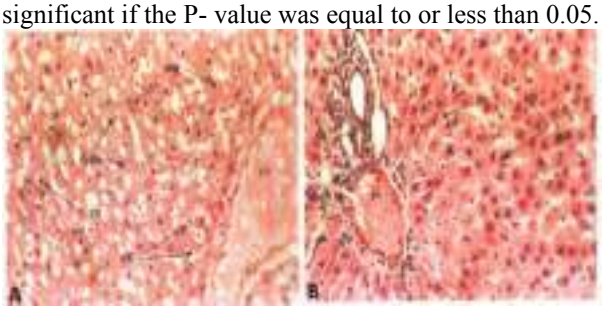

Figure No.1: Photomicrographs A & B stained with H&E depicting morphological changes.
KFC= kuffer cells, HC= Hepatic cords, CV= central vein, BD= Bile duct, BnH= Binuclear Hepatocytes, S= Sinusoids, Pykna= pyknotic nuclei, HNc= Hepatic Nuleus

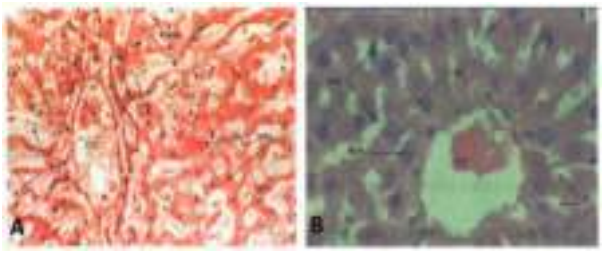

Figure No.2: Photomicrographs A & B stained with H&E revealing morpho-metrical differences of liver lobule under various magnifications

DISCUSSION

The study results revealed an increase in body weight only in group B animals. This can be explained on the basis of altered body and hepatic metabolism.

The Group C Animals showed decrease in body weight. It was comparable more or less to control group. The loss of body weight can be explained by the modulating effect of arginine on body weight [14]. who also found that the dietary arginine reduced fat mass in Zucker diabetic fatty rats.

There was an increase in Absolute & Relative Liver Weight in B group animals due to lithium toxicity. It might be due to edema, inflammatory infiltrate, pyknosis & karyorrhexis, apoptosis and necrosis and compensatory cellular hypertrophy and hyperplasia, marked venous and sinusoidal congestion, more Fatty deposits in cells in liver as suggested by [15]. Also, these observations agree with the work of [17], who described similar findings after co-administration of zinc with lithium in rats.

In C group animals the Absolute & Relative Liver Weight were decreased when compared with B group but the weight loss was not like control. It might be due to less inflammatory and pathological changes in liver, reduced cellular hyperplasia and hypertrophy, less Fatty Deposits, less sinusoidal congestion and inflammatory infiltrate. These findings match with the findings of [16].

Morphological & morphometrical changes increasingly worsened sequentially with the increase in treatment duration e.g 2, 6 and 12 weeks with lithium. As depicted by data, a full-blown inflammation, congestion and apoptosis and necrosis occurred in liver tissue with compensatory responses as suggested by [17]. These observations are also in conformity with the work of [18]. Vijaimohan studied the protective effect of Sobatum against lithium induced toxicity in rats.

Observations in Group C Animals showed the protective effect of Arginine against the Lithium toxicity. Liver morphology was restored to the near normal. Examination revealed an organized Lobular cytoarchitecture of liver as is depicted in the results of [19] who used L-arginine for liver damage in experimental acute cholestasis, an immuno-histochemical study.[20]

CONCLUSION

The present study suggests that L – Arginine supplementation as an adjuvant with treatment is beneficial and significantly attenuates hepatotoxicity of Lithium in albino rats. This further warrants research on man & animal.

Author's Contribution:

Concept & Design of Study:	Saleem Ahmed Bhutto
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Data Analysis:	Zulfiqar Ali Bhatti, Rehana Guddi Siddiqui, Mir Khater Ali Talpur
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Incidence of Sensor Neural Deafness in Children with Cerebral Palsy

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ABSTRACT

Objective: To study the Incidence of Sensor Neural Deafness in Children with Cerebral palsy.
Study Design: Observational and Experimental Study
Place and Duration of Study: This study was conducted at the Idris Teaching Hospital Sialkot Medical College Feb 2018 to Jan 2020.
Materials and Methods: One hundred and seventeen patients of sensor neural deafness of cerebral palsy were included in this observational and experimental study. History, examination and demographic data was recorded in the design Performa. Informed Written consent was taken Priorly in every case. The permission of ethical committee of the institute was also considered. The results were analyzed on SPSS version 20.
Results: The incidence of Cerebral palsy was maximum 34(29.05%) Quadriplegia patients and minimum 13 (11.11%) Hemiplegia.
The incidence of Audiometry Behavioral threshold was maximum in Athetoid 9(36.00%) in mild behavioral threshold and minimum in Athetoid 2(8.00%) and atonic threshold 2(10.50%). In Hearing screening there was incidence maximum refer patients 40(54.79%) and minimum in atonic 7(17.50%). The type of hearing was maximum in type B 8(42.10%) in spastic patients and minimum in type B Atonic 3(23.07%). ABR in incidence was maximum 10(41.66%) in moderate spastic and Athetoid patients and minimum in severe atonic patients 2(33.33%).
The incidence of hearing impairment was maximum in spastic cerebral palsy 9(37%) in conductive patients and minimum in hypotonic cerebral palsy 6(25%).
The incidence of cerebral palsy was maximum 35(62.50%) in male in age group 11-15 years and minimum 21(37.50%) in age group 5-10 years. The incidence of cerebral palsy in female was maximum 39(63.93%) in age group 11-15 years and minimum 22(36.06%) at age group 5-10 years.
Conclusion: Cerebral palsy (CP) is often accompanied by other disorders of cerebral function. Auditory disorders are very frequent in this population. The identification of hearing impairment also important as disorders of hearing is changeable and manageable with wide range of medical, to restore to good health devices, and treatment techniques. Therefore, the identification of hearing impairment in children with CP may suggest appropriate line of management and can provide important prognostic information.

Key Words: Sensor neural, Deafness, cerebral Palsy, Children

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INTRODUCTION

Kids with CP have a natural inconvenience in the fringe and focal sensory systems. [1],[2],[3] Therefore, CP is regularly joined by different clutters and issues of cerebral capacity, specifically discourse and language hindrance, scholarly disability, issue of vision and hearing, consideration, carefulness, and conduct. [4] [5]

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Consequently most of the influenced people can't take an interest and discover their place in ordinary society. [6] [7] [8]

Advances in treatment of perinatal contaminations and improved clinical offices for neonatal consideration have brought about additionally enduring babies, however with entanglements that may incorporate hearing weakness. Specifically, decreased death paces of untimely children with low birth weight are liable for additional babies with complexities might be of hearing debilitation. [6] Recent examinations have indicated that conference hindrance happens in 4-25% of youngsters with cerebral paralysis. [6] Hearing hindrance is

generally normal in kids with exceptionally low birth weight or serious hypoxic-ischemic put-down. [7] [11] [12]
Presence of hearing issues with extraordinary engine issue in CP, present a scope of exceptional instructive and mental needs, to a much more prominent degree than for youngsters with single incapacity. [11],[12],[13]
Untreated decreased hearing sharpness during early stages and youth intensified with extra incapacity may have progressively harmful impact on correspondence capacities, discourse and language, and intellectual improvement that can seriously meddle with their psycho, challenges in parent-kid and companion youngster collaborations, low confidence, phonetic, sound-related perceptual, and instructive turn of events. [7] [11] [12]
Be that as it may, the impacts of hearing disability are manageable to the mechanical treatment and restoration systems whenever recognized at an early age and powerful mediation program is initiated. [11-13] Thus, by and large future and accomplishment of a kid can be improved and decreasing the complexities of concealed hearing impedance. [14] [15] [16]
Be that as it may, there is no information with respect to commonness, degree, and sort of hearing debilitation in CP is accessible in the Indian setting. Thus, we propose to consider the nearness of hearing hindrance in kids with CP. Our point is to build the consciousness of conceivable correctable audio logical weakness that thwart improvement and learning in kids with CP.

MATERIALS AND METHODS

One hundred and seventeen patients of sensoneural deafness of cerebal palsy were included in this observational and experimental study. History, examination and demographic data was recorded in the design Performa. Informed Written consent was priorly in every case. The permission of ethical committee of the institute was also considered. The results were analyzed on SPSS version 10.

RESULTS

The incidence of Cerebral palsy was maximum 34(29.05%) Quadriplegia patients and minimum 13(11.11%) Hemiplegia as shown in table no1.

Table No.1: Distribution of types and subtypes and severity of children with cerebral palsy

Cerebral types	N (%)	Mild	Moderate	Severe
Spastic				
Quadriplegia	34(29.05%)	7(20.58%)	12(35.29%)	10(29.41%)
Diplegia	26(22.22%)	- (00.00%)	13(50%)	11(42.30%)
Hemiplegia	13(11.11%)	4(30.76%)	9(69.23%)	7(53.84%)
Athetoid	25 (21.36%)	-(00.00%)	10(40%)	11(44%)
Hypotonic	19 (16.23%)	5(26.31%)	9(47.36%)	9(47.36%)
Total	117(100%)	16(13.67%)	53(45.29%)	48(41.02%)

The incidence of Audiometry Behavioral threshold was maximum in Athetoid 9(36.00%) in mild behavioral threshold and minimum in Athetoid 2(8.00%) and atonic threshold 2(10.50%). In Hearing screening there was incidence maximum refer patients 40(54.79%) and minimum in atonic 7(17.50%). The type of herening was maximum in type B 8(42.10%) in spastic patients and minimum in type B Atonic 3(23.07%). ABR in incidence was maximum 10(41.66%) in moderate spastic and Athetoid patients and minimum in severe atonic patients 2(33.33%) as shown in table no2.

Table No.2: Distribution of types and subtypes and severity of children with cerebral palsy

	Spastic	**Athetoid**	**Atonic**
Number	73(62.39%)	25(21.36%)	19(16.23%)
Audiometry: Behavioral threshold			
Mild	4(5.47%)	9(36.00%)	-(00.00%)
Moderate	3(4.10%)	3(12.00%)	2(10.52%)
Severe	-(00.00%)	2(8.00%)	2(10.52%)
TEOAE: Hearing screeing			
Refer	40(54.79%)	15(37.5%)	7(17.50%)
Pass	33(45.21%)	10(30.30%)	12(36.36%)
Tympanogram: Type of hearing impairment			
Type : A	7(36.84%)	5(33.33%)	6(46.15%)
Type: B	8(42.10%)	6(40.00%)	3(23.07%)
Type: C	4(21.05%)	4(26.66%)	4(30.76%)
ABR (click): Threshold estimation			
Mild	9(37.50%)	-(00.00%)	-(00.00%)
Moderate	10(41.66%)	10(62.50%)	4(66.66%)
Severe	5(20.83%)	6(37.50%)	2(33.33%)

PTA: Pure tone audiometry, OAE: Otoacoustic emission, ABR: Auditory brainstem response, TEOAE: Transient evoked otoacoustic emission

The incidence of hearing inpairement was maximum in spastic cerebral palsy 9(37%) in conductive patients and minimum in hypotonic cerebral palsy 6(25%) as shown in table no3.

Table No.3: Types of hearing impairment

Cerebral palsy	Children	Conductive n (%)	Sensorineural n (%)	Mixed n (%)
Spastic	24	9(37%)	9(37%)	6(25%)
Quadriplegic	12	7(58%)	3(25%)	2(17%)
Diplegic	07	3(42%)	2(29%)	2(29%)
Hemiplegic	06	4(66%)	-	2(34%)

Athetoid	16	-	13(81%)	3(19%)
Hypotonic	06	5(83%)	-	1(17%)
Total	46	14(31%)	22(48%)	19(41%)

Table No.4: Age and gender distribution in cerebral palsy patients

Sr. No	Age(years)	Male	Female
1	5-10	21(37.50%)	22(36.06%)
2	11-15	35(62.50%)	39(63.93%)
Total		56(100%)	61(100%)

The incidence of cerebral palsy was maximum 35(62.50%) in male in age group 11-15 years and minimum 21(37.50%) in age group 5-10 years. The incidence of cerebral palsy in female was maximum 39(63.93%) in age group 11-15 years and minimum 22(36.06%) at age group 5-10 years as shown in table 4.

DISCUSSION

Cerebral palsy (CP) comprises of a heterogeneous gathering of non-progressive clinical conditions that are described by engine and postural brokenness because of the harm to creating cerebrum. An associative inability, for example, hearing weakness frequently exits with cerebral palsy (CP). The conjunction of unidentified hearing debilitation can influence the treatment plan and long haul result of CP. In this manner, a comprehension of the communication of the engine segments and connected shortages in kids with CP is fundamental for defining far reaching and reasonable objectives and better results. [2],[6],[7]

We contemplated 117 instances of CP to analyze the sorts and level of hearing impedance in CP. The examination discovered 46 (39%) out of 117 youngsters with hearing debilitation alongside CP. The aftereffects of unadulterated tone audiometry, tympanometry, otoacoustic outflow, and sound-related cerebrum stem reactions have recorded hearing hindrance in 46 (39%) out of 117 subjects.

Our information varies from Morales et al. who expressed predominance of 60% hearing hindrance among CP, though odding and Roebroech Hendrik announced 25% rate of hearing disability in cerebral-palsied populace. The distinctions in recurrence of hearing weakness in CP in these investigations may because of the varieties in kinds of CP for each situation study or potentially the variable reasons for CP in these cases.

The most elevated number of kids with CP found to have sensorineural hearing disability followed by conductive and blended sort of hearing hindrance that can be represented harm to the developing mind and aggravated with the related issues, for example, poor body development, oral-aural cleanliness, and continuous cold and hack. All youngsters who have hearing weakness displayed imperfect discourse and language aptitudes. Inadequate discourse has been seen in 63% of contemplated populace.

CONCLUSION

Cerebral palsy (CP) is often accompanied by other disorders of cerebral function. Auditory disorders are very frequent in this population. The identification of hearing impairment also important as disorders of hearing is changeable and manageable with wide range of medical, to restore to good health devices, and treatment techniques. Therefore, the identification of hearing impairment in children with CP may suggest appropriate line of management and can provide important prognostic information.

Author's Contribution:

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Data Analysis:	Muhammad Faizan, Raffad, Junaid Ghaffar
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Frequency of Golden Proportion and Golden Percentages in Maxillary Anterior Teeth Widths

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ABSTRACT

Objective: To determine the frequency of Golden Proportion and Golden Percentages in maxillary anterior teeth widths.

Study Design: A Cross-Sectional Descriptive Study

Place and Duration of Study: This study was conducted at the Department of Prosthodontics, FMH College of Medicine and Dentistry, Lahore from October 2015 till April 2016 for a period of six months.

Materials and Methods: Standardized digital photographs of 115 participants, of both genders were captured during smile displaying maxillary anterior teeth. The apparent tooth width of maxillary anterior teeth was measured with the help of the software. The calculations were done to determine golden proportion and golden percentages. The data was subjected to statistical analysis, (descriptive statistics and chi -square test, level of significance was set at $p<0.05$).

Results: The golden proportion was found to be existed only 7% of the participants between the widths of right central incisor and right lateral incisor.Among them 2.6 % male and 4.3% female. The results revealed that golden percentages existed in maxillary anterior tooth widths in natrural dentition of our population.The value of golden percentage for each maxllary anterior tooth is 22% for central incisors,15% for lateral incisors and 12% for canines of the total canine to canine width. There was statistically significant difference existed between the ages and genders for golden proportions and golden percentages.

Conclusion: The golden percentage theory can beutilized to develop proportion and symmetry in maxillary anterior teeth widths to achieve aesthetically pleasing restorations. It can be taken as an aesthetic guideline if the percentages of tooth widths are adjusted according to the ethnicity of the population.

Key Words: Golden proportion, Golden percentages, aesthetics dentistry.

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INTRODUCTION

A prosthodontist replaces the missing teeth and associated oral structures to restore the facial aesthetics primarily. [1,2] Perception of esthetically pleasing smile may vary in different populations. The facial aesthetics of patients is greatly affected by the proportional display of maxillary anterior teeth to label the smile as attractive.[1,3,4,5] There are some mathematical parameters, such as the Golden Proportion, the Golden Percentages, Recurring Esthetic Dental Proportion or Width: Height ratios which provide useful guidance to determine tooth dimension. [2,4] The objects which follow the golden proportion fall in the category of being esthetically pleasant and beautiful to human psyche. This ratio is 1.618:1 approximately [6,7,8] to evaluate and to develop the attractive relationship between the various facial structures Ricketts invented a golden caliper [9,10] Many clinicians favored the use of the Golden proportion in determining tooth size in dentistry and its systematic application to determine tooth size (width) and improve dental aesthetic in predictable ways. [11,12,13] The apparent mesiodistal width of a maxillary central incisor is **0.62 or 62%** greater than the adjacent lateral incisor. Same relationship exists when comparing the maxillary lateral incisor to the canine. According to a research conducted by Preston only a small proportion of the American population had the ratio of golden proportion in their teeth. [2, 14] In 2007, an another study by Ward illustrated that seventy- five percent of North American dentists when designing smiles with normal-length teeth preferred using the RED proportion over the golden proportion,[15,16] He recommended a ratio of 70 %(0.7) to be more

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useful than the traditional 62 % (0.62) of golden proportion. [2,15 2-4]

MATERIALS AND METHODS

Type of Study: Cross sectional descriptive study.
Place of Study: Department of Prosthodontics, FMH College of Medicine & Dentistry, Lahore.
Duration of Study: Starting from 6th October 2015 to 5th April 2016
Sampling Technique: Non probability consecutive sampling
Sample Size: Sample size is of 115 cases with 95% confidence level, 7% margin of error and taking expected '%' percentage of golden proportion present i.e. 17%(2) of patients with maxillary anterior teeth widths.
The study was conducted after the approval from the Institutional Review Board (IRB) of FMH College of Medicine and Dentistry, Lahore. A total of 115 subjects were included. Demographic data of the subjects was gathered A digital photograph of each subject's lower 1/3rd of face during smile displaying maxillary anterior teeth was taken, using digital camera by following a standardized procedure. The subject was seated in a relaxed upright position and was asked to look straight ahead focusing at a distance of 152 cm at the eye level.[19] The mid-saggital plane of the head aligned with the center of camera. The subject was asked to smile and the image was captured and then transferred to a personal computer. The apparent widths of each maxillary anterior tooth was measured in millimeters (mm) from right canine to left canine with the help of the software Adobe Photoshop 7.A specific alphabet was given to each measurement of the apparent width of tooth.
X = Total apparent width of maxillary anterior teeth (canine – canine) = _____ mm
A= Apparent width of right central incisor = _____mm
B = Apparent width of right lateral incisor = _____mm
C = Apparent width of right canine = _____mm
D = Apparent width of left central incisor = _____mm
E = Apparent width of left lateral incisor = _____mm
F = Apparent width of left canine = _____mm
Calculations:
For The Golden Proportion:
62% of the apparent width of the maxillary central incisor was compared with the apparent width of adjacent lateral incisor and the apparent width the lateral incisor was compared with the adjacent canine. Both right and left side teeth were evaluated in the same way.

A: For The Golden Percentages (GP %):
It was calculated by dividing the apparent width of each maxillary tooth by the total width of maxillary anterior teeth and multiplying the resulting value by 100.

(GP %) for right central incisor	=	A / Total apparent width of max ant teeth	x100 =	_____
(GP %) for right lateral incisor	=	B / Total apparent width of max ant teeth	x100 =	_____
(GP %) for right canine	=	C / Total apparent width of max ant teeth	x100 =	_____
(GP %) for left central incisor	=	D / Total apparent width of max ant teeth	x100 =	_____
(GP %) for left lateral incisor	=	E / Total apparent width of max ant teeth	x100 =	_____
(GP %) for left canine	=	F / Total apparent width of max ant teeth	x100 =	_____

Data Analysis: All the collected data was analyzed through SPSS version 20. Descriptive statistics including the mean and SD was calculated for all measurements.

RESULTS

The study included 115 participants out of which 58 were males i.e. 50.4 % and 57 females i.e. 49.6%. The mean age of the participants was found to be 22.06 SD (± 2.036) years.The results of the data revealed that 8out of 115 participants(i.e. only 7%) had the width of their right central incisors in golden proportion to the width of their right lateral incisors, right lateral incisors to the width of right canines is 4.3%, 5.2% had the width of their left central incisors in golden proportion to the width of their left lateral incisors, 115(100%) participants had the width of their left lateral incisors in golden proportion to the width of their left canines.

One sample T-test had shown statistically significant difference between the actual Golden Percentage for each maxillary anterior tooth calculated in the current study and the Golden Percentages suggested by Snow (p-value =0.00 with 95% of confidence level). This is true for both genders males (p=0.00) and females (p=0.00) and both age groups A (p=0.00) and B (p=0.00)

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Table No.1:Golden Proportion relationship among right lateral incisors width

Goldern proportion of	Yes	No
Right Central to Lateral Incisor	8 (7%)	107 (93%)
Right Lateral Incisor to Canine	5 (4.3%)	110 (95%)
Left Central to Lateral Incisor	6 (5.2%)	109 (94%)
Left Lateral Incisor to Canine	0 (0%)	115 (100%)

Table No.2:Golden Proportion relationship among maxillary anterior teeth width

Golden percentages of	**Mean**
Right Central Incisor	22.22±0.93
Right Lateral Incisor	15.53±0.89
Right Canine	12.18±1.05
Left Central Incisor	22.16±1.00
Left Lateral Incisor	15.64±1.31
Left Canine	11.97±1.18

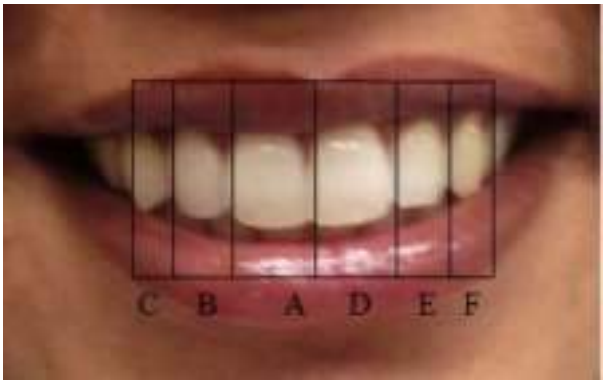

Figure No.1:Photograph showing the method of measurements.

DISCUSSION

The Golden Proportion and Golden Percentages are considered best aesthetic guidelines to evaluate and produce symmetry and proportions in the relative widths of the maxillary anterior teeth.[12]

In the current study, the highest percentage of the Golden Proportion (i.e. 7%) was observed between right central and right lateral incisors among maxillary anterior teeth. Same findings have been reported by Preston et al. in a study conducted on Americans.[14] Murthy et al have reported the highest percentage of Golden Proportion between left lateral incisor and left canine widths[11]. The results of the current study for the Golden Proportion relationship among right central and right lateral incisors is 8 out of 115 participants (7%). This is in agreement with the results of the studies of de Castro et al. and Sabir Shah et al.[21,20] de Castro et al.[21]. Both studies have concluded that Golden Proportion did not present among maxillary anterior teeth width. They measuredapparent teeth widths directly on the subjects' natural teeth with the help of device like Vernier caliper[22] and Boley guage.[23] In the current study, findings for the Golden Proportion between the width of right lateral incisors to the width of right canines is 4.3% (i.e. 5 out of 115 participants). This is similar to the findings of the study of Mahshid et al.[22] But this is a low percentage value when compared with the result of the study of Sulaiman E. and Yaakub M.S.[23]. The data of the current study also revealed that Golden Proportion was totally absent between the widths of left lateral incisor to left canine (i.e. 0 %).This is similar to the findings of the study of Preston et al.[14]

In the present study, the results for both genders i.e. male and female were similar statistacally[20]. Some researchers have concluded that Golden Percentage theory is a reliable and applicable parameter in evaluation, diagnosis and treatment planning for aesthetic anterior restorations than Golden Proportion.[20] The results of the present study are in agreement with the results of the previous studies. [20,25]

The mean value observed in the current study for Golden Percentage of central incisors is 22%. These percentages of central incisors are slightly lower than the values proposed by Snow (i.e. 25 % for Central Incisor).[3] But this is in accordance with the results of Murthyet al (i.e. 22 % Central Incisor).[6]Similar values have been reported by other authors. [20,25] With respect to the lateral incisors, the mean value of Golden Percentage obtained in this study is 15%. This value in agreement with the values proposed by Snow (i.e. 15% for Lateral Incisor).[26] This is also verified by other studies of Fayyed et al, Murthy and Rumani and Azam Set al. (15 %).[20,25] The mean value of Golden Percentage for canine is 12.2 % observed in the present study. Similar results have been reported by Murthy et al (i.e. 12.5 %), Fayyad et al (i.e. 12%), and Azam S et al.(i.e.12 %).

CONCLUSION

The Golden Percentage theory can be utilized to develop proportion and symmetry among maxillary anterior tooth widths to achieve aesthetically pleasing restorations than the Golden Proportion ratio.

Author's Contribution:

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Data Analysis:	Shahlisa Hameedi
Revisiting Critically:	Zartashia Arooj
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Effectiveness of High Dose Statins among Acute Coronary Syndrome Patients Presenting at a Tertiary Care Hospital

Muhammad Aqib Javed, Fahar Adnan, Syed Naseem Bukhari, Zubair Zaffar, Muhammad Shoaib Abid and Asif Zarif

ABSTRACT

Objective: The study aimed to determine the effectiveness of high dose statin after four weeks of therapy among patients with acute coronary syndrome (ACS) presenting to a tertiary care hospital.

Study Design: Cross-sectional study.

Place and Duration of Study: This study was conducted at the Department of Cardiology, Ch. Pervaiz Elahi Institute of Cardiology in Multan and Jinnah Hospital in Lahore, from January 2020 to July 2020.

Materials and Methods: About 160 ACS patients fulfilling the inclusion criteria were enrolled. All patients underwent a fasting serum lipid profile for measuring the serum low-density lipoprotein (LDL) level on the baseline. Then at the end of four weeks after obtaining treatment with high dose statin. The patients were treated with Rosuvastatin (40 mg) orally once daily and Atorvastatin (80 mg) on an alternate basis for four weeks. The effectiveness of high dose statins in lowering the serum LDL levels was measured.

Results: The mean age of the enrolled patients was 41.88 ± 11.05 years, and more female patients presented at the study site during this period. The minimum serum LDL level observed after treatment was 103 mg/dl, and the mean hemoglobin level was 121.95 ± 11.83 mg/dl, where it maximally reached 140 mg/dl. 51.2% of patients were hypertensive, and the high-dose of statins effectively reduced the serum LDL levels among 71% of cases. It was found that the efficacy was significantly associated with the age, gender and presence of hypertension ($p<0.05$).

Conclusion: The administration of the high dose of statins for four weeks (Rosuvastatin + Atorvastatin) effectively lowered the serum LDL levels among the ACS patients.

Key Words: Acute Coronary Syndrome, STEMI, Non-STEMI, High Dose Statin Therapy, Hypertension

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INTRODUCTION

CVD is the leading cause of death worldwide, accounting for 31% of the overall death rate where heart attack and strokes are the prominent contributors. According to the World Health Organization (WHO), in 2016, 17.9 million people died from CVDs and three-quarters of these deaths were reported in low- and middle-income countries [1]. Advancing age is the most potent independent risk factor for CVD, while other factors closely associated with advanced age include frailty, obesity, and diabetes [2].

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Although females tend to have a comparatively more extended life expectancy than males, elderly females or those > 80 years of age make up the most significant percentage of CVD diagnoses [3].

ACS refers to a group of clinical presentations, including ST-segment elevation myocardial infarction (STEMI) and non–ST-segment elevation myocardial infarction (NSTEMI) or unstable angina [4]. It is associated with partial or complete thrombosis of the infarct-related artery. Atherosclerosis is among the primary etiological factors of ACS. Palpitations, pain, shortness of breath (exertional), diaphoresis, nausea, and decreased exercise tolerance are the most common complaints among ACS patients. Potential complications include Ischemia and Myocardial infarction (MI). According to current guidelines, secondary prevention typically includes lifestyle modifications and therapeutic management to control risk factors [5,6]. For acute ACS, anti-thrombotic, anti-ischemic medications, and revascularization

procedures, including percutaneous coronary intervention (PCI) or coronary artery bypass grafting (CABG), are highly recommended [5,6].

Statins have anti-thrombotic effects; they are primarily used to lower the cholesterol levels among CVD patients [7] and are often used for secondary prevention of ACS. High-dose statin treatment effectively improves the long-term outcomes of ACS, reducing the risk of cardiovascular complications and associated death, which is also supported by many clinical studies and randomized controlled trials (RCTs) [8-12]. Therefore, the present study aimed to determine the effectiveness of high dose statins after four weeks of therapy among ACS patients presenting to tertiary care hospital.

MATERIALS AND METHODS

This cross-sectional study was conducted from 4th January to 3rd July 2020 at the cardiology and medical unit of CPEIC-Multan and Jinnah hospital-Lahore. A sample size of 160 was calculated using a 95% confidence level, 6.5% margin of error and taking expected efficacy at the end of 4 weeks of treatment 78.6%[5]. Both male and female ACS patients between 25 to 60 years of age were included in the study. While under exclusion, all patients with alanine aminotransferase (ALT) levels > 3 upper limits of normal (ULN), serum creatine kinase (CK) level > 3 ULN, serum creatinine > 2 mg/dl, receiving lipid-lowering therapy for > 3 months before admission and those with history of hypersensitivity to statins were kept.

Written informed consent was obtained before inclusion in the study. The fasting serum lipid profile was estimated for measuring the baseline serum LDL level. The patients were treated with Rosuvastatin (40 mg) orally once daily and Atorvastatin (80 mg) on an alternate basis for four weeks. At the end of 4 weeks of treatment with high dose statin, the fasting serum lipid profiles were again assessed to observe the effectiveness of high dose statin in lowering the serum LDL level.

Effectiveness of High Dose Statin: A significant reduction in serum LDL level (40 or more) on comparing baseline and after four weeks of high dose statin administration.

The following formula calculated percentage reduction:

$$\frac{(\text{LDL at baseline}) - (\text{LDL at four weeks})}{\text{LDL at baseline}} \times 100$$

Data were analyzed using SPSS version 17.0; continuous variables including age and serum LDL level were summarized as mean and standard deviation. Categorical variables like gender and efficacy were presented as frequency and percentages. Data was stratified for age, gender and presence of hypertension (BP > 160/90). Post-stratification chi-square test was applied, taking p-value < 0.05 statistically significant.

RESULTS

A total of 160 ACS patients were treated at the study site; the mean age of these patients was 41.88±11.05 years. There was a female majority, i.e. the sample included 51.9%, female patients and 48.15 male patients. Moreover, 51.2% of patients were hypertensive. The mean hemoglobin levelwas 121.95±11.83 mg/dl, and it maximally reached up to 140 mg/dl. The mean serum LDL level was reduced up to 103.00 mg/dl.

Table No.1: Demographic & clinical characteristics of the study patients

Variables		**N=160**
Age (years)		41.88±11.05
Hemoglobin Level (mg/dl)		121.95±11.83
Gender	Male	96(60)
	Female	64(40)
Hypertension	Yes	82(51.2)
	No	78(48.8)
Efficacy	Yes	115(71.9)
	No	45(28.1)

The efficacy of high dose statin was stratified with respect to age, gender and hypertension. It was found that efficacy is significantly associated with the age group, gender and hypertension with p-value<0.05.

Table No.2: Stratification of Efficacy with respect to age, gender and hypertension

Variables		**Efficacy n(%)**		**Total**	**p-value**
		Yes (n=115)	**No (n=45)**		
Age	≤ 40 years	64(83.11)	13(16.8)	77	0.002*
	>40 years	51(61.44)	32(38.5)	83	
Gender	Male	83(86.45)	13(13.5)	96	0.000*
	Female	32(50)	32(50)	64	
Hypertension	Yes	44(53.6)	38(46.3)	82	0.001*
	No	71(91.02)	07(87.5)	78	

**p<0.05 is considered statistically significant*

DISCUSSION

As CVDs are known to add significant social and financial burden globally, research focusing on the primary and secondary prevention of these cardiovascular events is necessary to control this public health hazard. Following RCTs, statins have effectively gained popularity for both primary and secondary prevention among CVD patients. The present research objective was to determine the effectiveness of high

dose statin after four weeks of therapy among ACS patients presenting at a tertiary care hospital.

In this study, with the administration of high dose statins, i.e. Rosuvastatin (40 mg) + Atorvastatin (80 mg), we found that the percentage reduction in the serum LDL level was 103 mg/dl and the maximum hemoglobin level observed was 140 mg/dl with a mean value of 121.95 ± 11.83 mg/dl. A significant reduction in the serum LDL level was observed among 71% of patients, efficacy derived via comparing the baseline LDL levels with the one after four weeks (after administration of high dose statins). A meta-analysis including 11 articles displayed that Rosuvastatin's loading dose significantly reduced the hs-CRP level after PCI, TG and TC ($p<0.05$). Compared with the conventional dose, Rosuvastatin's loading dose was more beneficial to patients with ACS in China and is suitable for clinical application [13].

Existing literature showed that 27%(n=46,675) of 174,149 randomly assigned participants were women [14]. Allocation to a statin had similar absolute effects on the 1-year lipid concentrations among both men and women (LDL cholesterol reduced by about 1.1 mmol/L in statin vs control trials and roughly 0.5 mmol/l for more-intensive vs less-intensive therapy). Women were generally at lower cardiovascular risk than men. The proportional reductions per 1.0 mmol/l reduction in LDL cholesterol in major vascular events were similar overall for women (rate ratio [RR] 0.84, 99% CI 0.78-0.91) and men (RR 0.78, 99% CI 0.75-0.81, adjusted p-value for heterogeneity by sex=0.33)[14]. The present study had a high frequency of females as compared to males. Therefore, the effectiveness of a high-dose of statins as observed might be influenced by the gender-based differences in the study sample.

Kasai et al. conducted a small study including PCI patients (n = 575). It was found that the mortality rate was significantly reduced among patients treated with a statin compared to the counterparts during an 11-year follow-up[15]. Another study explained how the mortality rate was raised among post-MI patients due to low adherence to the statin treatment [16]. Although the high statin dose effectively reduced the serum LDL levels, but the outcomes were significantly affected by modifiers, including age, gender and hypertension. It is known that cardiovascular health is interlinked to several other factors, including comorbidities, stress and depression, etc[17,18]. Studies report an increased risk of death for diabetics of either gender that may or may not be associated with CVD. One of the reasons for this might be that diabetes itself is linked to several other complications [19]. However, the current study doesn't involve comorbid history except for hypertension, which is also one of the limitations.

No serious adverse effects were observed among the present study participants. In contrast, a previous study reported myalgia among ACS patients treated with statins. Apart from the positive effects of statins among ACS patients documented in the literature, it has also been associated with diabetes on set [20], worsening insulin resistance, and effects the secretion and metabolic control [21]. Rocco et al. suggested that the positive effects of statins on the serum LDL levels outweigh the negative effects associated with metabolic control [20,22]. However, the statin treatment showed a significant impact on the serum LDL levels among the ACS patients in the present study, which is also in support of several existing studies, but there are certain limitations to the present findings. First and foremost, the patient's medical history that might have altered the treatment efficacy during the course was not inquired. Moreover, outcomes like repeated hospitalization and mortality rate must also be considered for future inferences.

CONCLUSION

The findings of the present study add to the pre-existing evidence that statin treatment has a beneficial effect on the serum LDL level among patients with CVD. The significant association of statin treatment efficacy with age, gender and hypertension highlights the need to identify the relation, impact and risk caused by these correlates. As it is essential to identify patients with a high-risk secondary modifier to confirm treatment effect.

Author's Contribution:

Concept & Design of Study:	Muhammad Aqib Javaid
Drafting:	Fahar Adnan
Data Analysis:	M. Zubair Zaffar
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Frequency of Non St Elevation Myocardial Infarction on Acute Coronary Syndrome Patient with Normal ECG

Non-ST Elevation Myocardial Infarction

Fahar Adnan, Syed Naseem Bukhari, Zubair Zaffar, Kashif Javed, Asif Zarif and Muhammad Zubair

ABSTRACT

Objective: To determine the frequency of non-ST elevation myocardial infarction (NSTEMI) in patients presenting at cardiology emergency with acute coronary syndrome and having normal ECG.
Study Design: Cross-sectional study
Place and Duration of Study: This study was conducted at the Emergency Department of Cardiology, Chaudhry Pervaiz Elahi Institute of Cardiology (CPEIC), Multan, from Nov, 2019 to May, 2020.
Materials and Methods: A total number of 203 patients presenting with Acute Coronary Syndrome aged 30-80 years. Data, including the patient's age, gender, BMI, family history, diabetes, smoking, and hypertension, was collected. Patients having trop-T >0.4 ng/ml were labelled as having NSTEMI. All patients with NSTEMI was undergone standard 12- lead ECG tracing. ECG findings (normal/ ST-depression, T-wave inversion) was noted.
Results: Mean age was 53.34±11.51 years included in this study. The BMI was 25.11±3.26 kg/m2. There were 137 (67.49%) males and 66 (32.51%) female patients. There were 75 (36.95%) diagnosed with diabetes. Hypertension was found in 107 (52.71%). Family history of was found in 37 (18.23%). 70 (34.48%) out of 203 patients were smokers. NSTEMI with normal ECG was diagnosed in 19 (9.36%) patients.
Conclusion: There is value to completely normal ECG findings acquired in suspected patients of NSTEMI in the emergency department. In the present study, 9.36% of patients who had the suspicion of NSTEMI was found to have normal ECG and diagnosis in these patients were made on clinical symptoms and trop-T values.

Key Words: electrocardiogram, non-ST elevation myocardial infarction, coronary syndrome

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INTRODUCTION

Afatal complication of coronary heart disease (CHD) is Acute coronary syndrome (ACS) which is still a topmost cause of death[1-4]. Acute myocardial infarction is typically categorized as either ST-elevation acute coronary syndrome (STE-ACS) or non-ST-elevation acute coronary syndrome (NSTE-ACS) based on the electrocardiographic (ECG) findings; importantly, NSTE-ACS comprises 70% of all acute myocardial infarctions[5].

The ECG is one of the most potent instruments in diagnosing ACS, differentiating 2 clinical entities, the STE-ACS and the NSTE-ACS, with different management approaches. It remains a cheap, easily accessible and non-invasive test at the moment. NSTE-ACS has different ECG trends, including isolated depression in the ST-segment, isolated T-wave abnormality, transient ST-segment elevation, or normal/non-ischemic abnormality [6]. Although invasive evaluation is commonly pursued, management of NSTE-ACS remains heterogeneous and not fully informed by myocardial substrate or ECG changes[7].

Both American and European guidelines over NSTE-ACS recommend admitting a patient for an invasive strategy in the presence of presumably new ST depression (not T wave inversion) on the admission ECG[8,9]. On the other hand, a normal ECG does not exclude an ACS. A study conducted by McCarthy et al. concluded that about 5.0% of patients having normal ECG and are discharged from the hospital have non-ST elevation Myocardial Infarction (NSTEMI)[10]. A recent review conducted by Hollander et al. reported that about 5% to 28% of patients of normal ECG who present in emergency cardiology departments might have NSTEMI[11]. Teixeira et al. alsoreported NSTEMI in 33% of patients having normal ECG findings in the emergency department [12].

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The objective of the present study was to determine the frequency of NSTEMI in patients of ACS having normal ECG on admission to the study site. Many of the patients who have normal ECG are considered to have symptoms triggered by non-cardiac and often benign disorders. Such patients are discharged from the hospital without any further investigation to rule out NSTEMI. Higher frequency of NSTEMI in patients with normal ECG on admission will help us make guidelines regarding further investigations to rule out NSTEMI. It will help to reduce mortality associated with missed diagnosis in patients of ACS.

MATERIALS AND METHODS

A Non-randomized, consecutive sampling, cross-sectional study was conducted at Emergency department of cardiology, Chaudhry Pervaiz Elahi Institute of Cardiology (CPEIC), Multan. Departmental ethical committee approval was obtained before commencement of the study. Informed consent was obtained from the patients after a thorough explanation of study protocols. Data, including the patient's age, gender, BMI, family history, diabetes, smoking, and hypertension, were collected according to the criteria of the operational definition. The sample size for the present study was calculated by following formula N= [Z2 X P(100-P)]/e2. Both gender patients presenting with Acute Coronary Syndrome due to NSTEMI, aged between 30 to 80 years were included in the study. However, Patients with readmissions or already diagnosed cases of the acute coronary syndrome, Patients representing other causes of the rise in Trop-I levels such as sepsis, end-stage renal disease, stroke and rhabdomyolysis diagnosed on clinical examination and laboratory or radiological investigations were excluded from study.

Patients venous blood samples were taken and sent to the hospital's central laboratory for measurement of Troponin-T levels. Patients having Trop-T >0.4 ng/ml were labelled as having NSTEMI. All patients with NSTEMI were undergone standard 12- lead ECG tracing. ECG findings (normal/ ST-depression, T-wave inversion was noted. Patients were categorized as NSTEMI with normal ECG as per operational.

The collected information was analyzed with SPSS version 23.0. Descriptive statistics were used to calculate the mean and standard deviation for continuous variables like age, height, weight and BMI. Frequency and percentage were calculated for categorical variables, i.e. gender, diabetes, hypertension, family history, smoking and NSTEMI with normal ECG. Effect modifiers like age, gender, BMI, diabetes, hypertension, family history and smoking were controlled by stratification. Post-stratification Chi-square test was applied to determine the effect of confounder variables on the frequency of NSTEMI. P-value <0.05 was taken as a significant effect.

RESULTS

The mean age of patients included in this study was 53.34±11.51 years. The minimum age was 30 years, and the maximum age was 80 years. Body mass index (BMI) mean was 25.11±3.26 kg/m^2. There were 137 (67.49%) males and 66 (32.51%) female patients. Hypertension was diagnosed in 107 (52.71%), and it was not found in 96 (47.29%) patients. Positive family history of CAD was found in 37 (18.23%), while the remaining 166 (81.77%) patients were not having a family history of CAD. Out of 203, 70 (34.48%) patients were smokers.

Table No.1: Descriptive Statistics of Study Participants

Variables		**Mean**	**SD**
Age (Years)		53.34	11.51
Height (cm)		161.96	10.36
Weight (kg)		65.86	10.60
BMI (kg/m^2)		25.11	3.26
		n	**%**
Gender	Male	137	67.49
	Female	66	32.51
Diabetes	Yes	75	36.95
	No	128	63.05
Hypertension	Yes	107	52.71
	No	96	47.29
Family History	Yes	37	18.23
	No	166	81.77
Smoking	Yes	70	34.48
	No	133	65.52
NSTEMI with normal ECG	Yes	19	9.36
	No	184	90.64

Table No.2: Association of demographic characteristics with NSTEMI with normal ECG.

Variables	NSTEMI with normal ECG		P-value
	Yes	No	

Age Group	30-52 years	08	89	0.603
	53-70 years	11	95	
Gender	Male	13	124	0.927
	Female	06	60	
BMI	≤ 29.99 kg/m^2	10	91	0.792
	≥ 25.00 kg/m^2	09	93	
Diabetes	Yes	09	66	0.323
	No	10	118	
Hypertension	Yes	14	93	0.054
	No	05	91	
Family History	Yes	07	30	0.027
	No	12	154	
Smoking	Yes	07	63	0.820
	No	12	121	

DISCUSSION

Myocardial ischemia (MI) may develop due to 2 main pathophysiological developments that includes occlusion of coronary due to any thrombus, vasospasm, or increased myocardial demand that leads to altered or reduced blood supply in which there has been intensely amplified cardiac effort probably because of workout or other stress with the existence of CAD. Patients with MI characteristically develop 2 distinct types of complications types of electrocardiogram (ECG) patterns: a) predominant ST-segment elevation acute coronary syndrome (STE- ACS), and are classified as having either "aborted MI" or ST- elevation MI (STEMI) based on the presence or absence of biomarkers of myocardial necrosis; and b) patients without principal ST segment elevation on the 12-lead ECG, Non-ST-elevation ACS (NSTE-ACS)[13,14]. NSTE-ACS has varied etiologies of primarily sub endocardial ischemia, repeatedly instigated by a platelet-rich thrombus [15].

Though sufferers indicating NSTE-ACS characterize a broad spectrum of CAD severity and, possesses substantial differences in the consequences. Crucial reperfusion with thrombolytic therapy has been confirmed helpful only in patients suffering with ST-segment elevation. But in the broad group without ST-segment elevation, including those with negative T wave, ST-segment depression or flat/normal/unchanged ECG, it may be detrimental [16]. Furthermore, studies have revealed the advantage of an invasive strategy over a traditional one in high-risk patients with NSTE-ACS[17]. Rapid risk stratification of patients with NSTE-ACS is crucial for appropriate management of these patients and targets more potent and invasive therapies for higher-risk patients.

The ECG remains the most directly accessible and extensively used diagnostic tool for guiding emergent treatment plans. The ECG taken during acute myocardial ischemia is of diagnostic, therapeutic and prognostic importance. There is a necessity to regulate the subgroups of patients having structurally or functionally severe coronary obstruction established on standard 12- lead ECG understanding. It was lately pointed out that there are unnoticed subgroups with NSTE-ACS who may help from growing reperfusion therapy [18].

Many of the patients of NSTEMI have regular ECG and the aim of this present study was to define the frequency of normal ECG in patients presenting with Non-STEMI. In the present study, normal ECG was in 9.36% of patients who presented with NSTEMI. McCarthy et al. determined that about 5.0% of patients with normal ECG and cleared from the hospital having a MI[10].In a recent review, Hollander et al. stated that approximately 5% to 28% of patients of normal ECG who visit in emergency cardiology departments might have MI[11]. Teixeira et al. reported myocardial infarction in 33% of patients having normal ECG findings on admission in the emergency department [12].

According to Chase et al. patients with regular or nonspecific ECG results with or without active chest angina associate to the symptoms during primary ECG acquisition. Standard ECG criteria were restricted to no electrocardiographic evidence of ischemia (ST-T wave changes), and 80% of patients with ACS symptoms had an average or nonspecific ECG. Of the whole 2.8% was identified with AMI, 11% with ACS either with normal or nonspecific ECG and with or without active symptoms [20].

The association of typical preliminary ECG findings in the ED with a concluding ACS diagnosis was studied among Patients with and without active chest discomfort indications throughout ECG acquisition. Principles for normal ECG were protracted beyond ischemic alterations to include sinus rhythm and standard variants of QRS interval, T-wave morphology, ST-segment, the absence of pathologic Q-waves or LVH and normal QRS axis, and. Out of the total patients, 17% were finally diagnosed with having NSTEMI[19].

It was also conducted by Welch et al. in a wide-ranging registry as 4.4% of the patients' presentation of NSTEMI with regular ECG [21]. However, it was reported that patients with either a usual or generic ECG with Acute MI diagnosis had significantly lesser hospital mortality composite death/adverse hospital events rates. But, patients with primarily normal ECG results who only presented ECG abnormalities on consequent tracings had significantly more deaths and amalgamated death/adverse events in the hospital [22].

CONCLUSION

There is value to totally standard ECG findings learnt in suspected patients of NSTEMI in the emergency department. In the present study, 9.36% of patients who

had a suspicion of NSTEMI was found to have normal ECG and diagnosis in these patients were made on clinical symptoms and trop-T values.

Author's Contribution:

Concept & Design of Study:	Fahar Adnan
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Data Analysis:	Kashif Javed
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Platelet Indices as a Predictor of Microvascular Complications in Type 2 Diabetes

Aisha Rabel[1], Irfan Siddiqui[2] and Maria Abid[3]

ABSTRACT

Objective: The study's main goal is to look at platelet indices as an indicator of microvascular complications in people with type 2 diabetes.

Study Design: Cross-Sectional Study

Place and Duration of Study: This study was conducted at the Jinnah Postgraduate Medical Centre in Karachi from Jan, 2019 to June, 2019 for a period of six months.

Materials and Methods: A total of 200 diabetic patients, both male and female, were surveyed. The information was gathered using a Performa that included all demographic information, medical background, blood transfusion history, and other relevant information.

Results: The information was obtained from 200 patients of both sexes. In total, 200 participants were found to be diabetic, resulting in a 24.6 percent (95 percent CI 21.90 - 27.49) prevalence of the disease in the study population. 31.5 percent of participants (P 0.001) said they had a history of the disease.

Conclusion: Adjustments in platelet files are thought to be measurably linked to diabetes and its complexities, according to the findings.

Key Words: Platelet, Microvascular Complications, Type 2 Diabetes

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INTRODUCTION

Type 2Diabetes Mellitus is an endocrine condition characterized by due to impairment of secretion of insulin by the pancreas and insulin resistance in body tissues. In patients with T2DM, hyperglycemia causes less microvascular and macrovascular complications than expected; diabetic retinopathy (DR) is the most frequently seen microangiopathy.[1]

It affects 40022 million people, and it is spreading rapidly in middle- and low-income countries. By 2025, efforts must be made all over the world to halt the rise of diabetes. Diabetes causes endothelial and pericyte damage as a result of hyperglycemia, dyslipidemia, and insulin resistance, making it a prothrombotic disease. [2] Hyperglycemia is a form of diabetes that results in a clustering of major entrapments of varying lengths. [3]

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They have a strikingly similar effect on the patient as they do on society, as pollution usually affects people during their prime working years. Hyperglycemia's adverse effects are often limited to macrovascular problems (CAD, Peripheral Arterial Disease, Stroke) and mild vascular complications (Diabetic Retinopathy, Diabetic Neuropathy& Nephropathy)[4]. This greater reactivity has also been used to assess diabetes-related fragmentation in microvascular disarrays. Mean platelet volume (MPV), reflects changes between platelet records in the impeller or platelet formation. Platelet spread width (PDW) is a measure of platelet heterogeneity that can be a fast result of platelet formation or heterogeneous megakaryocyte division. Platelet large cell degree (PLCR), the third platelet record, is the degree of more prominent platelets. [5]

MATERIALS AND METHODS

The Jinnah Postgraduate Medical Center in Karachi conducted this cross-sectional analysis. From Jan, 2019 to June, 2019. The information was gathered from 200 diabetic patients, both male and female. The information was obtained using a performa, which included all demographic information, disease history, blood transfusion history, and other pertinent information. The participants were subjected to a rigorous clinical examination. Diabetic patients were treated specifically for microvascular problems. Tactile perception of light contact with a 10-g monofilament, torment sensation with a pinprick, vibration sense with

a 128 Hz tuning fork and a biothesiometer from Genesis clinical frameworks, temperature sense, and lower leg snap were all used to test neuropathy. The glucose levels were tested twice, once after at least 8 hours of fasting and again 2 hours after supper, using the colorimetric technique of Randox Biosciences' semi-robotized analyzer RX Imola.

Statistical Analysis: SPSS version 19 was used to collect and analyze the data. The mean and standard deviation were used to express all of the results.

RESULTS

The information was gathered from 200 patients of both sexes. In total, 200 participants were found to be diabetic, resulting in a 24.6 percent (95 percent CI 21.90 - 27.49) prevalence of the disease in the study population. 31.5 percent of participants (P 0.001) said they had a history of illness.

Table No.1: Distribution of participants according to disease

Status	Total (%)	P-value
Diabetic	24.6	<0.001
Type-2	32	<0.001
Non diabetic	68.5	<0.001

In our study, 385 (77 percent) patients had microvascular complications (Table 2).

Table No.2 Characterizes diabetes microvascular complications

HbA1c	Patients	Percentage
<8.0%	19	16
>8.0%	96	84
Total	115	100

Of the 115 patients without microvascular confusions, 95 (83%) had an HbA1c of less than 7.0. (Table 5). Of the 115 patients without microvascular entanglement, 80 (70%) had a period of < 5 years (table 03).

Table No.3: Patients based on HbA1c differentiate (hemoglobin A1c). Micro-vascular complication-free patients

Duration of Diabetes	No. of Patients	Percentage
< 5 years	80	70
> 5 years	35	30
Total	115	100

Table 04: Two study groups comparing the platelet indexes

Platelet index	Normal range	Std. deviation	*t*	*P*
MPV (fL)	8.6-15.5 fL	1.63	12.47	0.0001
PDW (fL)	9.0-14 fL	3.15	9.82	0.0001
PCT (%)	0.22-0.24%	0.056	3.21	0.0001

DISCUSSION

Hyperglycemia damages retinal endothelial narrow cell, renal mesangial cell, and the fringe Schwan cells as the major microvascular harm pathogenesis. [6] Similarly, maliciousness in these endothelial cells causes microvascular irritation. [7] as we found in our study, current evidence supports an evident link between hypertension and glycemic control impairments and microvascular disorders. [8]

Hyperglycemia in macrovascular and microvascular complications characterizes diabetes mellitus, a metabolic condition characterized by hyperglycemia. Neurotic cycles and a high risk of vascular disease have been linked to altered platelet morphology and capacities.[9] Aydinli et al. advanced the notion of no connection between MPV and T2DM complications. We found a genuinely massive MPV separation in patients with T2DM and HCs in the current study. Looking at the unquestionable collections of diabetic patients, we found a clear distinction for both PDR patients and those with no DR. [10-11]

CONCLUSION

It is concluded that changes in platelet files are thought to be measurably related to diabetes and its complications. They are easily accessible, straightforward, helpful, non-invasive, and simple to understand the strategy for determining platelet brokenness and thus predicting the presence of microvascular complications.

Author's Contribution:

Concept & Design of Study:	Aisha Rabel
Drafting:	Irfan Siddiqui
Data Analysis:	Maria Abid
Revisiting Critically:	Aisha Rabel, Irfan Siddiqui
Final Approval of version:	Aisha Rabel

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Effects of Escitalopram on Blood Glucose & Serum Insulin Release from B Cells of Pancreas and Liver Glycogen in Male Wistar Rats

Mohammad Anwar Bangulzai[1], Syed Azhar Hussain Zaidi[2], Zubaida Umer Zehri[1], Mohammed Abid[3], Abdullah Jan Panezai[3] and Rahimullah Rahi[2]

ABSTRACT

Objective: To assess the levels of blood glucose efficacy of escitalopram on normal male Wistar Rats and assess the efficacy on release of insulin from pancreatic beta - cells in male Albino Mice on dose-based escitalopram.
Study Design: An experimental Study
Place and Duration of Study: This study was conducted at the Department of Animal Husbandry and Veterinary Sciences at University of Sindh, Tando Jam for a period of six months.
Materials and Methods: The rats were randomly assigned to one of five groups: A, B, C, D, or E. On 1st day of the post-experiment period, all animals were sacrificed by cervical dislocation (at end of 5th week). Centrifugation was used to separate serum from clots of blood. SPSS 21.0 was used to analyze data. Significant statistical analysis was characterized as $p \leq 0.05$.
Results: Increasing doses of escitalopram 0.025, 0.05, 0.1, and 0.15 mg/kg/day in groups B, C, D, and E showed progressive reduction in blood glucose levels ($p \leq 0.011$). Experimental animals' groups C, D, and E administered with increasing doses of escitalopram 0.05, 0.1, and 0.15 mg/kg/day respectively showed a rise in body weight also. The control group a showed normal liver architecture. Glycogen staining intensity remained increased in groups of rats fed ad libitum at increasing doses of escitalopram 0.025, 0.05, 0.1, and 0.15 mg/kg/day.
Conclusion: Escitalopram lowers blood glucose, increases insulin levels, and increases the content of liver glycogen in the rat model.
Key Words: Escitalopram, Blood glucose, Insulin, Liver glycogen, Pancreas, Wistar Rats

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INTRODUCTION

Severe depression is a chronic condition that necessitating more medical intervention, hence higher medical costs and costs as well as burden.[1,2] Induction of increased insulin sensitivity and reduced glucose levels is proposed to be associated with depression, while anti-depressants promote higher levels of insulin resistance.[5–7]

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Whenever you look up at the night sky and see stars like ones you are looking up at now, you are seeing lights, you are away from light sources. According to rumors, long-term use of tricyclic antidepressants, like amitriptamine and imipramine increases fasting glucose levels. As a result, TCAs are an effective treatment for depression but at expense of changes in blood sugar levels.[8] An exclusive serotonin reuptake inhibitor (fluoxetine, sertraline, and escitamine) has shown improvements in glycosylated hemoglobin (HgbA1c) levels as well. [9] The emerging hypothesis is that certain neural systems and mediators may be involved in regulation of blood glucose level.[9]

Serotonin (5-HT) serum levels decrease proportionally with increased serum glucose concentration in mice.[10,11] One should have moral fortitude to resolve their issues through diplomacy, not resort to violence. There is more and more evidence that SSRI may influence blood glucose levels because of an increase in serotonin.[9,12]

About one-third of total glucose in body is disposed of through liver and other two-thirds of remaining glucose is delivered to intestinal tract.[13–17]It is proposed

that rate of hepatic/endocrine glucose release and ability to utilize glucose are abnormally low in T2DM subjects.[17] Low levels of 5-HT are thought to affect overall excretion of both visceral and glucagon as reporte.[18] increases 5-HIAA increase serum levels to same extent as an injection of 5-HTP [which is a derivative of both serotonin and L-tryptophan] (5-hydroxytryptophan).[18]

Other SSRIs have a negligible or no effect on weight and appetite Depending on how it is taken, escramitine may interact with a few different drugs.[19]More research is needed, as medical literature has yet to discover influence of this drug on blood glucose and insulin levels in body. One of primary goals of this study is to better assess link between escitalopram use and blood glucose and insulin levels in diabetics. Hypoglycemic effects of escitalopram were discovered by An Z et al., 2009, M Zoli et al., 2013; yet root cause has not been examined yet. Thus, a need for glucose experiments to be conducted to ascertain cause of hypoglycemia. It has been proven in this study to be valuable to help clinicians with control of high blood glucose levels in Diabetics. The research at Sindh Agriculture University aims to ascertain impact of escramine on blood glucose levels in Wistar rat and on insulin secretion and glycogen content from pancreas of Wistar rats there was accordingly devised.

MATERIALS AND METHODS

The rats of this study were administered an experimental diet for six months in the Department of Animal Husbandry and veterinary Sciences at University of Sindh, Tando Jam. Rats with an average body weight of approximately 200g were studied, while large adult albino animals with a bodyweight range of 200-300g were excluded.

ANIMALS AND DIETS

All the rats were fed a standard laboratory chow topper minced diet, with that prescribed by specialist veterinarians. The raw chow was served. Rats were apportioned into following 5 equal groups: A, C, B, and D, and E, depending on the whims of mad scientists for an experimental period of 5 years

- **Group A (n=10)**: Control rats received 0.9% normal saline per orally as placebo

Experimental Groups

- Group B (n=10): Escitalopram 0.025mg/kg per orally daily.
- Group C (n=10): Escitalopram 0.05mg/kg per orally daily.
- Group D (n=10): Escitalopram 0.1mg/kg per orally daily.
- Group E (n=10): Escitalopram 0.15mg/kg per orally daily.

Animal protocol & Housing: We handled hygienic terms and circumstances with the utmost consideration. Since food and water were supplied to them, they could eat whenever they wanted to, whenever they felt hungry, and wherever they wished to find it we kept the light and dark cycles in house 12 hours per day. Rats were chosen based on their blood glucose levels, their livers' insulin concentrations, and their spleen glycogen levels were also measured. The patient was seen on first postoperative day (at end of 5th week). By forceps, serum was separated from blood clotted blood. Cervical dislocation on the first day of observation period (at end of 5th week). When rats' livers were processed for both gross and microscopic examination, the organ was taken out and placed into an adjoining tank for the procedures. Processing the liver in jars containing 10% formalin, 20% methanol, and 90% solutions.

Histological Examination: A tissue finding by microscopists that differ from those used by pathologists; this is a scientific method for formulating the mechanism behind tissue growth. It was found that ten percent of the liver tissue contained formaldehyde in fixing solution after fixing for 24 hours (10 ml formaldehyde, 90 ml distilled water). For microscopic examination, samples were sliced and processed through various concentrations of ethyl alcohol, then embedding was done in paraffin blocks. After paraffin was cut by the tissue chopper, the tissue sections were stained with acid-fast and fast green to enable detection of any free RNA. Studies were performed with a microscope and everything was meticulously documented in form.

Data Analysis: Analyses of data were done using SPSS 21. The analysis of variance “t” was used to test for the significance of differences in blood glucose level, serum insulin, and body weight (mass) levels among groups. P-value was less than 0.05 taken as a significant level.

RESULTS

There were a total of 50 rats tested for the levels of glucose, liver glycogen, and body weight in the controls and experimental animals of experimental animals fed escitalopram. Table I shows the mean ± SD, F-value, as well as P (the percentage of variance) for the controls and test animals. The results of the one-way analysis of variance found a major F value of 32.86 and a critical p-value of 0.011 (table III). After 0.05, 0.1, and 0.15 mg/kg per day dosage increases, blood glucose levels decreased progressively in all three cohorts ($p = 0.011$). However, the table I shows that group B was not significantly different from control group A ($p=0.153$).Mean ± SD, and the control group vs. the experimental group insulin value are shown in Table II. Statistical significance was unaffected when comparing experimental and control groups B to each other insulin increased with increasing by 20.8%, but there was only a borderline noticeable rise with concentrations in groups C, D, and E, at 0.05, 0.1, and 0.15 mg/kg/day; F value = 0.20.08

Group C was injected with increasing amounts of escitalopram in, 0.1 mg/day before the experiment, and then with 0.15 mg/kg after, while groups D and E received doses of 0.05 and 0.15 mg/day escramine before the experiment respectively show a rise in weight. However, the control group showed no substantial increase in weight; p = 0.62 and p = 0.81.

Table No.1: Blood Glucose level in controls & experimental groups (mg/dl) (n=50)

	Mean	SD	F value	P-value
Group A. Controls 0.9 % N/saline (n=10)	148.0	4.34	32.86	0.011
Group B. Escitalopram 0.025 mg/kg/ day (n=10)	145.2	4.13		
Group C. Escitalopram 0.05 mg/kg/day (n=10)	139.0	4.96		
Group D. Escitalopram 0.1 mg/kg/day (n=10)	133.9	3.78		
Group E. Escitalopram 0.15 mg/kg/day (n=10)	129.10	4.20		

A vs B non-significant (p=0.153)

Liver glycogen – Microscopic examinations: Periodic acid staining was utilized to monitor glycogen content the control group had liver morphology that matched normal for all but one of the healthy volunteers.

After three days of ad libitum feeding, the glycogen stain intensities continued to rise in the escitalopiclotide-treated groups. Experimental groups B, C, D, and E demonstrate photomicrographs with increased hepatocyte adhesion and staining of the PAS-positive features of their liver tissue samples.

Table No.2: Serum insulin level in controls & experimental groups (mIU/L) (n=50)

	Mean	SD	F value	P-value
Group A. Controls 0.9% N/ saline (n=10)	15.4	1.21	20.08	0.016
Group B. Escitalopram 0.025 mg/kg/ day (n=10)	17.3	1.44		
Group C. Escitalopram 0.05 mg/kg/day (n=10)	19.3	2.54		
Group D. Escitalopram 0.1 mg/kg/day (n=10)	21.8	2.86		
Group E. Escitalopram 0.15 mg/kg/day (n=10)	23.2	2.69		

A vs B non significant (p=0.07)

Table No.3: Analysis of variance of study parameters in animal groups

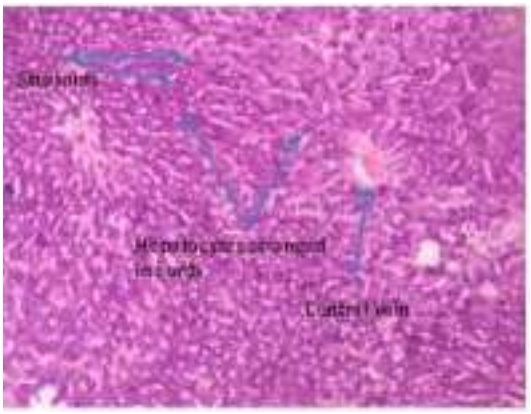
		Sum of Squares	df	Mean Square	F- value	P-value
Blood Glucose level (mg/dl)	Between Groups	2434.5	4	608.63	32.86	0.0001
	Within Groups	833.4	45	18.52		
	Total	3267.9	49			
Insulin levels (mIU/L)	Between Groups	410.7	4	102.69	20.08	0.0001
	Within Groups	230.1	45	5.11		
	Total	640.8	49			

TableiNo.4: Bodyweight of animals before and after the experiment (grams) (n=50)

	Mean	SD	p-value
Group A. Controls (0.9% N/saline)			
- Before	261.30	18.79	0.62
- After	262.10	15.16	
Group B. Escitalopram 0.025 mg/kg/day			
- Before	266.10	13.62	0.81
- After	265.30	9.91	
Group C. Escitalopram 0.05 mg/kg/day			
- Before	258.40	13.94	0.043
- After	265.60	13.04	
Group D. Escitalopram 0.1 mg/kg/day			
- Before	270.80	14.58	0.006
- After	281.10	10.18	
Group E. Escitalopram 0.15 mg/kg/day			
- Before	260.20	15.63	0.010
- After	274.00	9.34	

Photomicrograph-showing findings of group A,B,C,D,E

Liver section of control group A showing intact liver architecture. Central vein & hepatic vein is shown. Hepatocyte cords are visible.



Group A: Normal Liver Histology X10

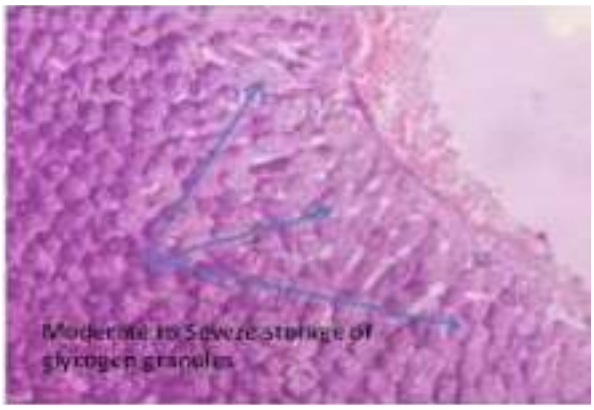
Liver section of experimental group B- showing intact liver architecture. Central vein is shown. Hepatocyte cords are visible.

Group B: Storage of glycogen granules within Hepatocytes granule.

Liver section of experimental group C- showing intact liver architecture. Central vein & hepatic vein is shown.

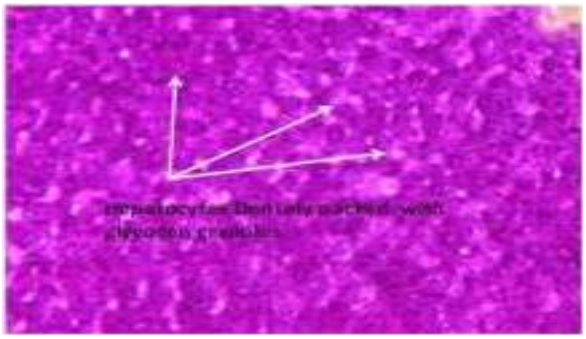
Group C: Moderate storage of glycogen granules X1

Experimental group D liver section is showing intact architecture. Central vein & hepatic vein is shown.



Group D: Moderate to severe storage of glycogen granules X 40

Group E Liver section is showing intact liver architecture.



Group E: Hepatocytes Densely packed with glycogen granules x 10

DISCUSSION

For the current research, the experimental animals had significantly higher blood glucose, serum insulin, and liver glycogen levels than the control animals. Pakistan currently holds sixth place in DM.[20,21]

Increases in the doses of 0.05, 0.1, and 0.15 mg/kg per day in groups C, D, and E produced statistically significant progressive blood glucose levels decrease. However, the table I shows that group B was not significantly different from control group A ($p=0.153$).Our results support the conclusions of the previous studies, which we reported previously. SSRIs (fluoxetine, sertraline, and escitalopram) are all effective in reducing depression but have also shown a significant effect on HBA1c levels.[9]

We found that Escramine reduced blood glucose level, but the previous studies describe it as increasing insulin sensitivity.

Concentrations of 5-HT (5-OH-tryptamine) have been shown to decrease glucose levels in earlier experiments in animals as well.[10,11]Studies had previously suggested that the SSRIs affect the level of endogenous serotonin, thus making better glycemic control of type 2 diabetes.[9,13,15,22]An outline is only of help to those who need assistance, an aide to those who want to do the

work.[18] Currently, escitalopram has been selected because it has a very low affinity for 5-HT1, alpha, and beta receptor; it is one of the most selective serotonin reuptake inhibitors; and dopamine receptors.[14] The findings of the previously mentioned studies are inconsistent with the present findings, which contradict them, as demonstrated in this analysis.[9,23,24] Additional research conducted by Zuccoli, et al. 2013 demonstrated that the dosage of escitalopram didn't have to be increased to return the blood glucose levels to normal despite this success.[25]

There is no correlation between paroxetine and escramipramipramine in the literature; therefore, the current study did not demonstrate hypoglycemia from paroxetine (SSRI) alone but rather found the effect of combined use of the others. Until all are provided for, the issues will persist.[26,27] Zammit et al described a case of recurrent hypoglycemia in an elderly woman who was not diabetic after the use of SSRI treatment.[28].

CONCLUSION

The study suggested that escitalopram modulates glucose levels in rats. These findings show that beta-cell excitation is most likely the main cause of the rise in serum insulin concentrations, and escitalopram induces the glycogen increase in the rat model.

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Average Ischemia Time in Non ST Elevation MI vs ST Elevation MI among Local Population of Pakistan

Zeeshan Hassan[1], Muhammad Awais Saleh[2] and Amad Ul Haq Bhatti[3]

ABSTRACT

Objective: To analyse the average ischemia time in Non-ST-elevation myocardial infarction in comparison of ST-elevation myocardial infarction among local population of Pakistan.
Study Design: Comparative Study
Place and Duration of Study: This study was conducted at the Allama Iqbal Memorial Teaching Hospital Sialkot during June 2020 till December 2020.
Materials and Methods: The data was collected 100 patients of both genders. The data was divided into two groups.
Results: The data was collected from 100 patients. The mean age of the patients was 51.3 ± 11.5 years in STEMI patients and 57.4 ± 9.4 in NSTEMI. 45 (45%) have diabetic history with STEMI and 55 (55%) with NSTEMI patients. 81 (81%) have smoking history and 17 (17%) have family history of CVD with STEMI. All the data is represented in table 1.
Conclusion: It is concluded that there is no difference among the heart rate variability indices in Ischemic heart disease, MI, age group and gender.

Key Words: Acute, Risk, Score, Patients, Hypertension

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INTRODUCTION

Coronary heart diseases is a major disease causing significant mortality and long term complications in patients. It is a term that demonstrate a range of illnesses going from angina uptill ST-portion rise myocardial dead tissue. Cardiovascular danger factors for ischemic heart sickness and AMI are on the ascent in Pakistan [1]. 18% of grown-up population experiences hypertension, smoking and tobacco use has expanded and weight is expanding. 16.2% men and11.7% ladies have diabetes mellitus while another 8.2% men and 11.7% ladies have debilitated glucose resilience [2]. With expanding opulence and offices of life, there is a clear change in way of life and there is increasingly more inclination for inactive propensities. Exercise and open air exercises appear to have diminished. As an outcome, cardiovascular illnesses like myocardial dead tissue and stroke have become the main sources of bleakness and mortality in Pakistan [3].

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Heart rate variability (HRV) has been known as a measurable parameter of the cardiac autonomic function. The cardiac autonomic innervation is heterogeneous and hence leads to different patterns of autonomic modulation [4]. The normal pattern of autonomic modulation is altered in the case of myocardial infarction, the pattern of alteration is not uniform, and it depends on the infarcted wall or region of the heart. This altered autonomic modulation starts within a few hours after the acute event [5]. In ST-segment elevation myocardial infarction (STEMI) patients, cardiac autonomic modulation is predominantly characterized by activated sympathetic and withdrawn parasympathetic activity in the early hours after STEMI. It is worth mentioning that this autonomic modulation shows a difference according to the location of the infarction, with the inferior/posterior/right ventricular infarctions showing a more pronounced vagal/vaso-depressive response while the anterior infarctions showing a more pronounced sympathetic response [6].

An anterior wall myocardial localized necrosis otherwise called foremost divider MI, or AWMI, or foremost ST section height MI, or foremost STEMI happens when foremost myocardial tissue normally provided by the left front sliding coronary conduit endures injury because of absence of blood supply [7]. At the point when an AWMI reaches out to the septal and sidelong areas too, the guilty party sore is typically more proximal in the LAD or even in the left principle

coronary supply route. This enormous front myocardial dead tissue is named a broad foremost [8].

MATERIALS AND METHODS

This comparative study was conducted in Allama Iqbal Memorial Teaching Hospital Sialkot during June 2020 till December 2020.

Sample Size: The data was collected from 100 patients of both genders. Sample size is calculated with 95-96% confidence level, 4-5% margin of error and taking expected percentage of sensitivity of 92.3% with margin of error 5%and specificity 100%.

Inclusion criteria:

- Age 20 to 60 years
- Patients with symptoms of ischemia.
- History of coronary artery disease.

Exclusion criteria:

- Those who are not willing to participate in this study.
- Those having abnormal cardio biomarkers.
- Non-cardiac trauma and non ischaemic cardiomyopathy

Data Collection: After acceptance from Ethical Committee and higher board of study, and then after taking informed, written consent, patients was enrolled for data collection. The data was collected 100 patients of both genders. The data was divided into two groups.

Group A: Patients with diagnosis of NSTEMI

Group B: Patients with STEMI

The acute risk of the in-hospital mortality and the assignment to the respective risk groups was calculated prospectively for these patients using the online calculator. Patients were divided into three parts according to risk score, low score, and intermediate and high risk score. All patients of anterior and inferior wall ST elevation myocardial infarction got thrombolytic therapy.

Statistical Analysis: The statistical analysis of data was performed using SPSS version 19**.**

RESULTS

The data was collected from 100 patients. The mean age of the patients was 51.3 ± 11.5 years in STEMI patients and 57.4 ± 9.4 in NSTEMI. 45 (45%) have diabetic history with STEMI and 55 (55%) with NSTEMI patients. 81 (81%) have smoking history and 17 (17%) have family history of CVD with STEMI. All the data is represented in table 01.

Patients with NSTEMI were more established than those with STEMI, and introduced all the more regularly history of hypertension, past MI and coronary revascularization techniques, and clinical indications of metabolic disorder. Patients with NSTEMI had more noteworthy number of basic coronary stenosis, revascularization was all the more regularly deficient, and such patients introduced all the more frequently with side effects of cardiovascular breakdown on beginning admission to the coronary care unit.

Table No.1: Demographic data of patients with ST-elevation myocardial infarction and non-ST-elevation myocardial infarction

	STEMI	NSTEMI	P[2]
Age, years	51.3 ± 11.5	57.4 ± 9.4	
Cardiovascular risk factors			
Diabetes, n (%)	45 (45%)	55 (55%)	0.045
Hypertension, n (%)	34 (34)	66 (66)	< 0.001
Smoking habit, n (%)	81 (81)	19 (19)	0.001
Family history, n (%)	17 (17)	83 (83)	0.159
Previous CABG, n (%)	71 (71)	29 (29)	< 0.001
PCI, n (%)	13 (13)	87 (87)	< 0.001
AMI Previously, n (%)	21 (10)	39 (33)	< 0.001
Stroke history, n (%)	5 (2)	6 (5)	0.187
AMI characteristics			
Anterior, n	38	62	< 0.001
Inferior, n	76	24	0.002
Other, n	4	96	< 0.001
Left ventricle ejection fraction, %	46.8 ± 8.2	43.4 ± 13.1	
Patients with LVEF < 40%, n	43	57	0.005
Patient with heart failure at initial admission, n	15	75	0.002

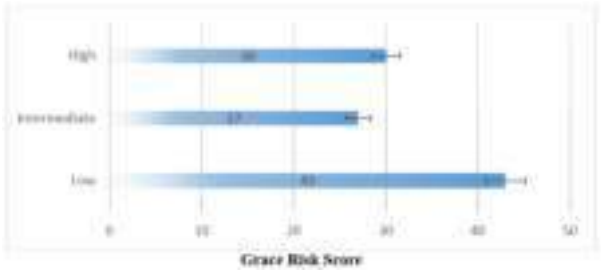
Table No.2: Different types of therapies

Therapy	STEMI	NSTEMI	P-value
Warfarin	22	78	0.401
β-blocker	89	11	0.201
Ca-antagonist	18	82	0.023
ACE-inhibitor	80	20	0.001
AT-II-antagonist	16	84	< 0.001
Statin	20	80	0.789

Table 02 shows the Grace Risk Score of patients. According to analysis 43% patients have low score, 27% patients with intermediate score and 30% patients have high Grace Risk Score. All the values are presented in table 03.

Table No.3: Grace Risk Score of selected participants (n=100)

Grace Risk score	N	% age
Low	43	43%
Intermediate	27	27%
High	30	30%



Graph No.1: Grace Risk Score

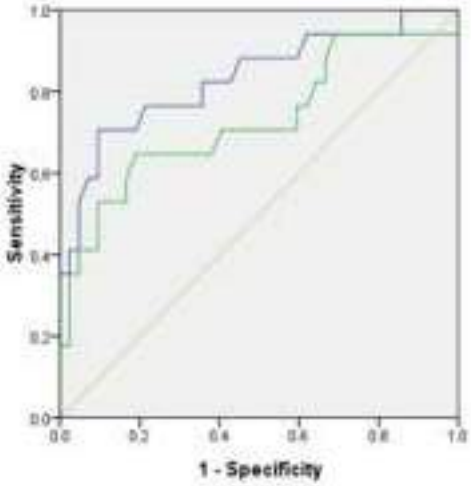
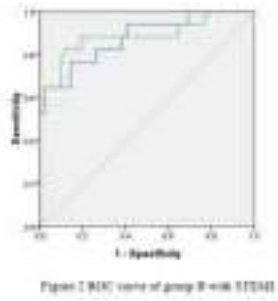


Figure 1 ROC curve of group A with NSTEMI

Figure No.1: ROC Curve of group A with NSTEMI



DISCUSSION

Worldwide various long term examines have additionally assessed and approved the prescient estimation of the Grace Hazard score in NSTEMI. The GRACE Risk Score for anticipating in-medical clinic passing was surveyed in a few Acute Coronary Syndrome understanding libraries, the MINAP database [8]. Bradshaw et al found that the prejudicial limit of GRACE model was acceptable generally speaking. Fox Ka et al [9] decided expectation of danger of death and myocardial dead tissue in the a half year after introduction with Acute Coronary Syndrome by means of planned worldwide observational examination (GRACE) and discovered C-measurement of 0.81 for foreseeing demise and 0.73 for death or myocardial localized necrosis from admission to a half year after release which is similar to our investigation. This investigation likewise found that GRACE score demonstrated great prescient exactness for the consolidated endpoint of cardiovascular sicknesses or myocardial dead tissue in emergency clinic [10].

Past examinations alluded to autonomic adjustments in STEMI patients with not many really contemplating the impact of revascularization on the example of autonomic regulation. Vagal over activity is notable to be more incessant in second rate STEMI contrasted with thoughtful over activity in anterior STEMI, this can be clarified by the particular circulation of vagal afferents to the infer posterior mass of the left ventricle [11]. Accordingly, the impact of revascularization whether by essential PCI or by fibrinolysis should be related with various cardiovascular autonomic examples of recuperation relying upon the site of STEMI. Essential PCI offers the best quality level treatment by reestablishing the stream in the IRA as per the rules of treatment of STEMI, while its impact on reestablishing the ordinary autonomic regulation example stays indistinct [12].

CONCLUSION

It is concluded that there is no difference among the heart rate variability indices in Ischemic heart disease, MI, age group and gender. Grace Risk score is also considered to be the useful tool for predicting the hospital stay and death rate in NSTEMI patients.

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Effectiveness of Various Treatment Options in the Management of Gallbladder Stones and Related Acute Conditions

Various treatment options for acute gallstones diseases

Gul Sher Khan, Abdul Ghafoor, Asif Mehmood and Rafi Ullah

ABSTRACT

Objective: The purpose of this study was to compare and to assess the differences in the clinical outcomes of surgical versus laparoscopic cholecystectomy, endoscopic procedures (ERCP), percutaneous cholecystectomy, percutaneous aspiration (PA) and medical measures in the management of gallstone and related acute conditions.

Study Design: A comparative and retrospective study

Place and Duration of Study: This study was conducted at the Department of General Surgery Khalifa Gul Nawaz Teaching Hospital Bannu between August 2019 and June 2020.

Materials and Methods: A total of 269 patients were included in the study, with the age ranged from 30 to 85 (mean 57.5) years. Data were collected from the charts and computer record of the prospective patients, admitted from Jan 2013 to Dec 2015. Statistical analyses were used to calculate the risks of in hospital mortality and morbidity, to detect the statistical differences among the treatment types, age groups, length of hospital stay and the readmission frequency among the different treatment types.

Results: Open surgery is a gold standard, effective, definitive and safe treatment modality in the management of gallstones and related acute conditions. Laparoscopic surgery (lap chole) is, although a gold standard and a vogue with surgeons but it is not applicable and successful in all cases of gallstones and related conditions, for which open surgery comes as a definite treatment option. The age of the patients affects the mortality and the duration of hospital stay after every type of treatment for gallstones and related acute conditions. Percutaneous cholecystectomy or percutaneous aspiration (PA) was associated with highest risk of death and length of hospital stay. ERCP (endoscopic retrograde cholangio-pancreatography) was related to a shortest hospital stay .There were more deaths in the medically treated patients. There were more readmissions in the delayed types of procedures. The risks of death and the probability of readmissions were not affected by the gender of the patients.

Conclusion: Surgery is a gold standard, effective, definite and safe in the management of gallstones related acute conditions. Laparoscopic cholecystectomy is mainly used in young fit patients, usually for simple cases of gallstones/cholecystitis. The success rate of the procedure increases with the experience of the surgeon. Surgically unfit and high risk patients are treated conservatively with medicines or through ERCP, percutaneous cholecystostomy or PA. These techniques have limitations. They are temporizing and palliative procedures, with a high recurrence rate of symptoms.

Key Words: Acute cholecystitis (AC), Endoscopic Retrograde Cholangiopancreatography (ERCP), Percutaneous aspirapion (PA)

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INTRODUCTION

Reportedly the prevalence of gallstone is 6-8% for men and 10-12% for women in the population [1,2]. The incidence of gallstone increases with age, that by the age of 65, 12% of men and 25% women have gallstones increasing to 20% and 30% respectively at the age of 90[2,3].

Some 60-65% of patients with gallstones are without symptoms[1,2,4,5] and the risk of developing symptoms or complications is almost 1-4% per year[4,5]. Some of the most frequent complications of gallstone disease are biliary colic, acute cholecystitis, CBD (common bile duct) stones, mucocele, empyema or emphysema of gallbladder and gangrene of gallbladder with perforation, biliary pancreatitis and cholangitis and the cholecystoenteric fistula and the gallstone ileus are the less common.

Biliary colic: starts when the gallbladder contracts against a stone which is temporarily blocking the cystic duct [1]. The patient notices a sharp intermittent pain in

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the right upper quadrant or epigastrium, with nausea and vomiting. The pain usually starts after the ingestion of fatty meal and may last for several hours [1,4].

Acute cholecystitis: starts due to blockade of cystic duct by a gallstone and the patient is complaining of pain in the right upper quadrant, nausea, vomiting, anorexia and fever. Leucocytosis is frequent [1,6]. Raised liver function tests are associated with worse outcomes [7]. Kimura et al, in a large review of the literature report the mortality rate of acute cholecystitis from 0-10% and complications rate of 7-26% [1,8]. Although the mortality rate of acute cholecystitis is usually low (0.2-0.3%)[9] but this figure is 7-10 times high in old age due to comorbadities[9]. Gallbladder perforation occurs in 8-10% cases of acute cholecystitis with an increased rate of mortality [1,10].

Common bile duct stones: (choledocholithiasis) are present in almost 10% cases of cholelithiasis and 5-18% cases of elective cholecystectomies[1,11]. The related signs are jaundice, clay colour stool and dark urine [1]. Patients with CBD stone can present with fever, jaundice and pain RHC. Acute cholangitis is a surgical emergency needs early biliary drainage.

40-60% cases of biliary pancreatitis are due to gallstones[12] and the patients present with epigastric pain, nausea and vomiting. Severe pancreatitis occurs in almost 10-15% of patients with gallstone disease [12,13].

MATERIALS AND METHODS

A total 269 patients including 69 (26%) males and 200 (74%) females, aged 30-85 (mean age 57.5) years, were included in this study. The cases of gallstones were admitted through the OPDs and the cases of acute cholecystitis mostly through emergency. Patients were diagnosed on the basis of history, physical examination, laboratory tests, ultrasound and CT scan abdomen.

Variables included were the patient demographics, hospital diagnosis, white cell count, biochemical parameters, ASA (American society of anaesthesiologist) score, various types of treatment given, length of hospital stay and morbidity and mortality.

Statistical analysis was performed with the statistical package for social sciences version 20.0. Multiple logestic regression was used to calculate the risks of in hospital mortality and to detect statistical differences and their significance among the treatment groups, age groups and between male and female patients . Univariate ordinary linear regression was used to compare the length of hospital stay and readmission frequency among the different age groups. A P value of less than 0.05 was considered significant.

Gallstones /Acute cholecystitis (AC): For these 185 (69%) patients, 135 (73%) female and 50 (27%) male were included in the study. Patients were mostly admitted through OPDs; however the cases of acute cholecystitis were mostly admitted through emergency.

The cases of acute cholecystitis were kept NBM (nothing by mouth), put on I/v antibiotics, I/v fluids, analgesics and antacids. Cases of acute cholecystitis fit for surgery and especially those cases not responding to the conservative treatment and the cases of gallstones underwent surgery, either laparoscopic or open cholecystectomy. The cases of AC responding favorably to the conservative treatment or cases unwilling or unfit for surgery were continued on the medical treatment. On discharge, they were advised to come back for definitive treatment 4-6 weeks after.

RESULTS

We saw from the results of the study that the incidence and prevalence of gallstones and related acute conditions are increasing with the age. Usually cases were selected with ASA score of 3 or lower for surgery in the elderly patients. Delayed, misdiagnosed and improperly treated cases of calculous cholecystitis presented with complications e.g. cholecystoenteric fistula or gallstone ileus.

Cholecystectomy and CBD exploration are the principal procedures commonly performed. Early cholecystectomy (the operation performed with in 48hrs of admission) decreases hospital stay, readmission rate and other biliary complications[15].

Several reports have documented the fact that surgical correction of cholelithiasis and choledocholithiasis to prevent recurrent pancreatitis can be safely accomplished as soon as the clinical evidence of acute pancreatitis has subsided [16].

In this study endoscopic treatment was found to be an important predictor of recurrent biliary symptoms during follow up ($p=0.05$) and age was the only independent predictor of mortality and morbidity ($p=0.007$). In this study percutaneous cholecystostomy or PA was associated with the highest risk of death and hospital stay while Lap chole with lowest mortality and ERCP with the shortest length of stay. The patient sex did not affect the rate of death after any type of treatment but some studies has shown that women with cholecystitis had lower mortality and shorter hospital stay[17].

A weak but positive correlation was found between age and leucocytosis ($p=0.049$), with the leucocyte count increasing with age. There were more deaths and readmission in the medically treated patients. In the present study, the difference between treatments of patients <60 yrs and >60yrs was statistically significant ($p=0.030$).

Lap chole was performed more frequently in the young age (<60yrs) group with preserved and good cardiopulmonary status.

Table No.1: Age groups wise treatment for the cases of acute cholecystitis/gallstones

Age group	Acute cholecystitis plus elective cases of gallstones	Treatment		
		Lap chole	Open chole Plus converted Cases	Medical Treatment
30 – 40	35	15	8 + 2 = 10	10
41 – 50	65	32	15 + 3 = 18	15
51 – 60	50	22	13 + 5 = 18	10
61 – 70	20	6, 2(p chole or PA)	6 + 3 = 9	3
71 – 80	10	2, 2 (PA or p chole)	6 + 2 = 8	0
81 – 85	5	0, 2(PA or p chole)	3 + 0 = 3	0
Mean age 57.5	185 (68%)	77 (42%)	66 (35.6%)	38 (20.5%)

From the table 1, it is cleared that most of the cases whether acute or elective were treated with lap cholecystectomies especially in the young age group (<60yrs), although some cases in the old age group were also resorted to lap chole. It is also seen that the rate of conversion to open cholecystectomy was more in the old age groups. Also the ratio of patients treated conservatively decreased towards the old age groups indicating the severity of gallstone diseases. Hospital stay was 5-6days.There were 2 expiries in the medically treated patients and 1 in the lap choles.

Follow up: 5 out of 36 medically treated patients had readmissions with acute episodes with in the first 3-4 wks time and they had early lap choles in 3 cases and 2 open cholecystictomes. Only 25 patients came back for elective surgeries at different dates. They underwent either lap choles or open cholecyseictomes, with some cases of lap chole converted to open cholecystectomy

Table No.2: Age wise various treatment modalities

Age group	Acute cholecystitis with CBD stones plus gallstones with CBD stones	Treatment		
		Lap chole plus ERCP	Open chole plus CBD exploration plus converted cases	Medical
		0	3 + 0 = 3	2
41 – 50	10	2	6 + 0 = 6	2
51 – 60	15	4	7 + 2 = 9	2
61 – 70	13	5	6 + 2 = 8	0
71 – 80	10	3	5 + 2 = 7	0
81 – 85	5	2	2 + 1 = 3	0
Mean age 57.5yrs	58 (21.6%)	16 (27.5%)	36 (62%)	6 (10.3%)

In this study, a total of 58(21.6%) patients with 14(24.21%) males and 44(75.8%) females were included. some cases of acute cholecystitis were jaundiced and running fever with elevated liver function tests (with acute cholangitis). All the cases were kept NBM, put on I/v fluids, I/v antibiotics, antipyretics and antacids.

Those patients who responded early and well were continued on medical treatment and on discharge were advised to come back for definitive treatment 4-6 wks after. Those cases which were ill and toxic underwent either early ERCP, sphincterotomy and CBD clearance followed by lap chole or open cholecystectomy and CBD exploration. The elective cases were put on OT list for lap chole plus ERCP or open cholcystectomy plus CBD exploration. There were a few cases of Lap chole or ERCP which failed and were converted to open cholecystectomy plus CBD exploration.

From the table 2 it is clear that most of the cases in the young age groups (<60yrs) were treated with open cholecystectomy, IOC and CBD exploration. In the old age groups (>60yrs), the CBD stones were cleared in most of the cases through ERCP, sphincterotomy and CBD clearance followed by either Lap chole or open cholecystectomy. Hospital stay was 7-11days. 1 case of ERCP expired during the procedure.

Follow up: 2 out of the 6 medically treated cases had readmissions with acute episodes and they were resorted to early lap choles followed by ERCP. 3 out of the 4 cases followed for definitive treatment at different dates. They had either Lap choles followed by ERCP or open cholecystectomy with choledocholithotomy.

Table No.3: Cases of acute biliary pancreatitis

Age group	Cases of gallstones and or CBD stones	Acute pancreatitis	
		Mild Cases	severe cases
30 – 40	3	2	1
41 – 50	5	4	1
51 – 60	8	6	2
61 – 70	5	3	2
71 – 80	3	2	1

81 – 85	2	0	2
Mean age 57.5yrs	26 (9.7%)	17 (65.4%)	9 (34.6%)

In this part of study some 26 (9.7%) patients with 5(19.3%) male & 21(80.7%) female with acute biliary pancreatits were included. All the cases were kept NBM, put on I/V antibiotics, I/V fluids, analgesic & antacid. Mild cases of acute pancreatitis responded favorably and they remained in hospital for 4-7 days. On discharge they were advised to come back for definitive treatment as early as possible.

3 cases of acute necrotizing or hemorrhagic pancreatitis were excluded from the study. 2 cases of severe acute pancreatitis expired during the course of disease. 4 cases of the severe variety being on medical treatment were resorted to early ERCP plus sphincterotomy and CPD clearance. Hospital stay was 9-14 days. On discharge they were advised to come for eradicative surgery 8-12wks.

Follow up: 12 out of 17 conservative patients followed for definitive treatment, 8 had ERCP followed by lap chole and 4 had open chole with CPD exploration. Out of 4 patients of severe variety 2 had open chole and the other 2 had lap chole.

DISCUSSION

From this study, it became cleared that laparoscopic and endoscopic procedures are not always successful. In our setup (Pakistan), the patients of gallstones usually present to the surgeons after repeated attacks of cholecystitis and they are not suitable to be handled laprosocopically. Even when they are started with laparoscopy, the conversion rate is high, either because of difficult dissection in the calot's triangle or injury to the CBD or blood vessels. Also patient's selection for laparoscopic procedures is quite important. Elderly and diabetic patients, patients in cardiopulmonary compromised state and patients having abdominal operation are not suitable for laparoscopic cholecystectomy. The merits of laparoscopic cholecystectomy are, the minimum trauma of access, the less post-operative pain, early mobilization and early recovery to normal work.

Laparoscopic choledocholithotomy is possible in specialized centers by surgeons with advanced laparoscopic experience and skill, advanced laparoscopic techniques and equipment.

The ERCP failed in some cases of CBD stones clearance due to the failure to cannulate the ampulla of vater or due to the large size of CPD stone to retrieve.

In a retrospective group of 362 patients Neoptolemos et al[14] found immediate morbidity 8% versus 19% and mortality 4% versus 8% in the surgical and endoscopic groups respectively, but the endoscopic group had a large proportion of high risk patients. These workers also noticed that preoperative endoscopic intervention increases the surgical mortality and morbidity. Endoscopic therapy shortens hospital stay but this advantage is antagonised by the substantially high rate of the recurrence of biliary symptoms, some of which demand readmission.

In a high risk elderly patients, surgery is suitable to endoscopic intervention with the gallbladder left in situ as a definitive treatment for gallstones and related conditions.

CONCLUSION

Surgery is a gold standard, effective, definitive and safe treatment modality for the management of gallstones and related acute conditions. Laparoscopic cholecystectomy is also a gold standard for simple cases of gallstones in young patients and in some old patients with preserved cardiopulmonary states. Open surgery is practiced frequently in complicated gallstones and related acute cases in both young and old ages under general or epidural anesthesia. Careful pre-operative patient assessment and selection for a definite treatment and post-operative care are necessary for a successful treatment.

ERCP is a gold standard for retrieval of CBD stones in old age. Endoscopic procedures (ERCP), percutaneous cholecystectomy or percutaneous aspiration and medical treatment are used in surgically unfit, high risk, old infirm and diabetic patients to ameliorate and palliate the symptom of gallstones and related acute conditions. These temporizing procedures are in no way definite with high rate of recurrence of symptoms. Also these procedures are not always successful. When they fail or when the acute state of the disease has been over, open surgery comes as an effective and definitive treatment modality.

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Strength and Inter-Relationship of Different Body Parameters of Obesity in Our Local Racial and Ethnic Background

Mohammad Mohsin Rana, Muazzam Fuaad, Saleem Akhtar, Adnan Afzal, Sara Jabbar and Kiran Zaman

ABSTRACT

Objective: By defining the strength of each parameter of obesity in our population as a source of local data for comparison with other ethnic and racial groups, we can focusing on the best parameter of obesity in our routine clinical workup for CVD risk.

Study Design: Observational study

Place and Duration of Study: This study was conducted at the Department of Medicine, Rai Medical College Sargodha and Private Consultancies of the participants from January, 2020 to December, 2020.

Materials and Methods: After informed consent and applying inclusion/exclusion criteria, all obese looking or having a sagging or protuberant tummy, 20-70 years old, were evaluated for different parameters of obesity as per standard practices.

Results: Out of 928 eligible participant 344 (37.07%) were males and 584 (62.93%) were females. Only 4 (0.07%) female weighed below the IBW. 12 (2.05%) females and 40 (11.63%) male had WC below the respective cut off values. When assessed by W: HtR, only 16 (4.65%) males were below the cut off value. When evaluated by W: HR, 12 (2.05%) females and 16 (4.65%) males were below the cut off values. On BMI scale 16 (4.65%) females and 42 (8.9%) males fell in the healthy range between 18-25. 120 (20.555) females and 130 (23.97%) male were in the borderline range of 26-30. 120 (32.255) females and 80 (23.25%) males were in the low risk range of 31-35. 136 (23.29%) females and 42 (15.11%) males were in medium risk range of 36-40. 112 (19.18%) females and 20 (5.18%) males were in the high risk range of 40 and above.

Conclusion: All the parameters of obesity, WC, W: HtR and W: HR, have their limitations. BMI unexpectedly turned out to miss out the most. This can be explained by the fact that all these parameters including most practiced BMI were designed to stratify the CVD and DM risk not the obesity per se. IBW still is the best parameter to define obesity. This study shall lead to further and larger multicenter studies to develop better understanding of anthpometric parameters for our own population.

Key Words: Obesity, Metabolic Syndrome, Anthpometric measurements

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INTRODUCTION

Type 2 Diabetes Mellitus (T2DM) or Adult-Onset Diabetes Mellitus (DM) and visceral obesity are Siamese Twins. Chronic excessive calories consumption overexpose the liver to free fatty acids, leading to hyperinsulinemia and insulin resistance. Term Diabesity is coined for it. By 2010 estimates 285 million, 90% type2, had DM.

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It is expected to rise to 439 million, 7.7%, by 2030. Asia is the epicenter: China, Pakistan, Indonesia, Bangladesh and India being among the top 10. [1-3]

This epidemic of modern age, involving nearly a third of world population, spares no ethnic, socioeconomic and age group. [4] Historically it had always been more prevalent in women. In low-income countries, obesity is generally more prevalent among middle-aged adults from wealthy and urban social strata; whereas in high-income societies, obesity affects both sexes and all ages, but is disproportionately greater in socioeconomically disadvantaged groups.[5]

Obesity traditionally defined by Ideal body weight (IBW) according to sex, body frame and height, doesn't precisely predict cardiovascular diseases (CVD), cerebrovascular events (CVA), hypertension (HTN), diabetes (DM) and dyslipidemia. Most of epidemiological studies use Body Mass Index (BMI) as a better predictor of CVD. A greater cardio

metabolic risk is associated with the localization of excess fat in the visceral adipose tissue and ectopic depots (such as muscle and liver). It leads to increased fat to lean mass ratio [6], reflected in sex specific Waist: Hip Ratios (W: HR), Waist: Height (W: HtR) and Waist Circumference (WC), each havingits own limitations.[7]

MATERIALS AND METHODS

Obesity was defined by the simplest and most practiced parameter as "Looking Obese" or with "sacking or protuberant tummy" as the entry point into the study. After securing informed consent and applying exclusion criteria, these were evaluated further on different parameters of obesity as per standard practices. [8-11, 15]

Study Design: Observational study with convenient sampling technique

Study Period: From 1st January, 2020 to 31st December, 2020.

Inclusion Criteria: 20-70 years age, both sexes.

Exclusion Criteria:

- Seriously sick patient or terminally ill patient.
- Pregnancy
- Ascites
- Steroid and Thyroid disorder

Sample Size and Sampling Technique: A minimum sample size of 285 patients was calculated to maintain a 5 percent margin of error, a 95 percent confidence interval and a 75 percent response distribution, using a Rao soft sample size calculator.

Statistical Analysis: Data analysis was done on Microsoft Excel version 2016 and Statistical Package for Social Sciences software version 25. Descriptive statistics (i.e., frequency distribution, percentages, mean and standard deviations) was the primary analytical methods.

RESULTS

We had 928 eligible participants in this study, 344 (37.07%) males and 584 (62.93%) females. All, except 4 (0.68%) females and 16 (4.65%) males, weighed below the IBW. Only12 (2.05%) females had WC below the cut off value of ≤85cm while 44 (12.79%) male had WC below the cut off value of ≤90Cm. When assessed by W: HtR, only 16 (4.65%) males were below the cut off value of 0.5, all the females were above it. When evaluated by W: HR, 16 (2.74%) females were below the cut off value of 0.85 and 24 (6.98%) males were below the cut off value of 0.90. On BMI scale 16 (4.65%) females and 42 (8.9%) males fell in the healthy range between 18-25. 120 (20.555) females and 130 (23.97%) males were in the borderline range of 26-30. 120 (32.255) females and 80 (23.25%) males were in the low-risk range of 31-35. 136 (23.29%) females and 42 (15.11%) males were in medium risk range of 36-40. 112 (19.18%) females and 20 (5.18%) males were in the high-risk range of 40 and above.

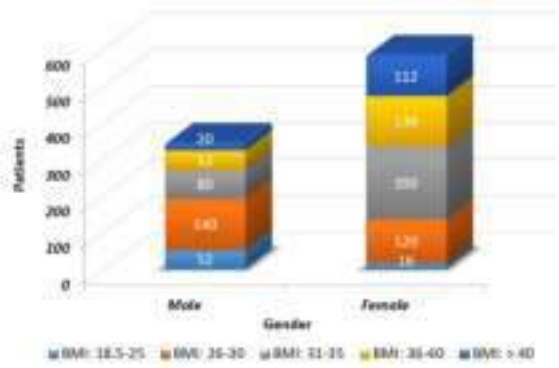

Figure No.1: Patients ratio

Table No.1: Gender wise detail

Parameter		Gender					
		Male (344)			Female (584)		
		Patients	Mean	Std. Dev.	Patients	Mean	Std. Dev.
IBW	Above	328 (95.35%)	±61.44	±7.71	580 (99.32%)	±47.44	±7.81
	Below	16 (4.65%)	±63.79	±0.79	4 (0.68%)	±52.02	±2.64
WC	Above	300 (87.21%)	±109.08	±8.00	572 (97.95%)	±107.23	±9.35
	Below	44 (12.79%)	±73.80	±18.21	12 (2.05%)	±81.97	±2.16
WC/ H_t	Above	328 (95.35%)	±0.62	±0.08	584 (100%)	±0.68	±0.08
	Below	16 (4.65%)	±0.38	±0.09	0 (0.00%)	±0.00	±0.00
WC/H	Above	320 (93.02%)	±1.04	±0.05	568 (97.26%	±0.98	±0.07
	Below	24 (6.98%)	±0.75	±0.18	16 (2.74%)	±0.83	±0.03

Table No.2: BMI mode detail

BMI	Male	Female

	18.5-25	26-30	31-35	36-40	> 40	18.5-25	26-30	31-35	36-40	> 40
Mean	22.85	28.23	32.59	36.44	44.23	22.59	27.75	32.34	36.87	45.75
Std. Dev.	1.70	1.11	1.37	0.94	1.98	1.94	1.19	1.48	1.40	7.51

DISCUSSION

Both physical inactivity and unhealthy calorie rich western diet had resulted in world-wide epidemic of DM and obesity. In its 2008–2013 Action Plan WHO included DM in its list of preventable non-communicable diseases. [12] Term "Diabesity" was coined for these Siamese Twins.

Ideal body weight (IBW) for height and frame were initially developed in the late 1800s. Hamwi and Devine seminal equations were very popular in their times. Robinson et al. and Miller et al. used 1959 and 1983 Metropolitan Life Insurance Company data to make their suggestions. Hammond introduced metric version of the Hamwi equation. In our study all except 4 (0.07%) females turned out to be below the IBW. This simplistic approach fails to give a range and doesn't incorporate multiple comorbidities and mortality-specific causes, age and ethnicity. Shah et al. highlighted IBW formulas tendency to under and overestimated at shorter and taller heights respectively. BMI concept was developed to quantify adiposity independent of height over arange of target weights by a Belgian mathematician in 1832,[13,14] In our study 30.17% person were in the low risk range, 20.25%were in the medium risk range and 14.22% were in high risk range. 35.35%fell in the healthy or borderline range. By applying this parameter CVS risk may be better predicted but one may miss the obesity. With further insight, abdominal obesity or more specifically Visceral Obesity rapidly established its role as a widely accepted anthropometric measurement due to its better ability to assess overall cardio metabolic risk better than BMI which assesses only the overall obesity, we observed similar trends. [5-8] World Health Organization (WHO) has recommended standardized protocols for these measurements since 1990. [15]

In our study the only 2.05% females and 4.45% males had a normal W: HR. This speaks strongly in favour of using it as a criteria for obesity and to predict the risk of future chances of developing DM and CVD. Hoorn Study showed the superiority of W: HR to BMI in predicting the incident of diabetes in 50–75-years old. [16] Being somewhat oversimplification as it does not differentiate subcutaneous fat from visceral fat even after adjusting for age and BMI. Going well with the limitations, only 2.05% females and 11.63% males had a normal WC.

Off the multiple ratios to differentiate between upper and lower body obesity Waist/Hip ratio (WHR)proved to be the strongest as only 4.65% of makes fell below while all the females were above the cut of value. The variations in results of Iranian, US based survey in Whites and African American, the San Antonio Heart Study on non-Hispanic Whites and Mexican Americans, Korean surveys and INTERHEART study reinforce this argument,[17-19]we need to work more to develop our own parameters for indigenous population.

WC better predicts the future risk of DM,[20] it was accepted as a criterion for MetS by the National Cholesterol Education Program Adult Treatment Panel III, The American Heart Association/National Heart, Lung, and Blood Institute (AHA/NHLBI) and International Diabetes Federation (IDF).Like IBW, WC has limitations at both extremes of stature, short statured populations like Chinese and Asians have higher CVD risks than Caucasians, at the same WC value. W: HtR better predicts CVD risk with a cutoff of 0.5 for Asian and Chinese populations irrespective of weight,(21-7)as a better surrogate.

All obesity parameters must accommodate race and ethnicity. Northern Indians are our closest cousins have paradoxically higher prevalence of DM for BMI: IDF proposed cut points with an optimal sensitivity and specificity for WHR. [28] South Asian populations have a unique thin–fat phenotype, with more visceral obesity and high body fat content without much increase in BMI. [29]

CONCLUSION

All the parameters of obesity, WC, W: HtR and W: HR, have their limitations. BMI unexpectedly turned out to miss out the most. This can be explained by the fact that all these parameters including most practiced BMI were designed to stratify the CVD and DM risk not the obesity per se. IBW still is the best parameter to define obesity. This study shall lead to further and larger multicenter studies to develop better understanding of anthpometric parameters for our own population.

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Serum Resistin Levels in Non-Diabetic Patients of Hepatitis C in Hazara Division

Alamzeb Jadoon[1], Ayesha Gohier[1], Nazish Butt[2] and Khalid Pervez Lone[1]

ABSTRACT

Objective: Resistin is a 12-Kd protein synthesized and secreted in adipose tissue. It is member of C-terminal cysteine rich protein family. Serum resistin levels increase in chronic inflammatory conditions. In the current study, the levels of serum resistin were estimated in healthy, interferon (IFN) treated and untreated groups of Hepatitis C (HC) to assess its role as inflammatory biomarker. Resistin is said to be affected in diabetes mellitus.

Study Design: Analytical study

Place and Duration of Study: This study was conducted at the Department of Physiology and Cell Biology, University of Health Sciences Lahore from May 2013 to November 2015.

Materials and Methods: 28non-diabetic subjects of both sexes were recruited in each group and compared within the groups (Control, Untreated and Treated HC patients). PCR was done for viral load. Serum resitin was measured by using ELISA.

Results: Mean serum levels of resistin were higher in untreated HC patients as compared to INF treated HC patients but the difference was not significant. However, significant difference was observed among the males and females of untreated HC group in which males had higher values than females.

Conclusion: Serum resistin levels are lower in healthy and INF treated individuals as compared with the untreated subjects or hepatitis C. However, the difference was not significant but similar study with larger sample size is recommended to establish cause effect relationship.

Key Words: Hepatitis C, Interferon, Resistin

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INTRODUCTION

Hepatitis C (HC) is a chronic disorder caused by a small, enveloped RNA virus of family Flaviviridae and genus Hepacivirus. It affects approximately 170-200millionpeople worldwide and about 350000 people die from its complications [1,2]. Pakistani population has a prevalence rate of about 8-10 per cent that estimated approximately 10 million[3]. It is most common cause of hepatocellular carcinoma. Use of infected needles, transfusion of contaminated blood, intravenous drug abuse, quackery, infected blades at barbar shops are the most common causes of spread if hepatitis C[4].

HC virus hassubtypes (1-6) and more than 50 sub genotypes[5]. Out of these genotypes, 3a is most common along with type 1 a in Pakistan and has got better viral eradication rates in terms of end of treatment response (ETR) and sustained viral response (SVR) after treatment with INF and antiviral Ribavarin[6,7,8,9].

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Resistin is a 12-Kd protein synthesized and secreted in adipose tissue. It is member of C-terminal cysteine rich protein family. Serum resistin levels increase in chronic inflammatory condition[10].Human resistin is among the inflammatory regulators of downstream action of macrophages, peripheral blood mononuclear cells (PBMCs) and vascular cells. On stimulation with recombinant human resistin, human macrophage cells, PBMCs, and hepatic stellar cells produce TNF-α, IL-6, IL-12, and MCP-1 through NF-κB-mediated pathway. Resistin works by autocrine, paracrine, and endocrine mode of action and affects vast array of cell types and tissues. Circulatory resistin level has been positively correlated with common inflammatory and fibrinolytic biomarkers such as CRP, TNF-α, and IL-6 in type 2 diabetes, rheumatoid arthritis, chronic kidney disease, sepsis, and coronary atherosclerosis, whereas level of resistin in blood plasma is associated with disease severity in case of sepsis and pancreatitis[11].

HC infection is diagnosed by using ELISA followed by quantitative and qualitative PCR. Quantitative PCR gives an estimated viral load or number of viruses in the blood of the affected person. IFN treated patient should ideally have undetected viral load at the end of treatment. ETR is the amount of viral load at the end of treatment and SVR is the viral load 24 weeks after treatment[12]. ETR and SVR are reliable tools that can be used for the success of IFN treatment in any HC patient and disease prognosis[9].

Nearly 75-80 per cent of the HC infections end up into chronic stage and only 20-25 percent are spontaneously resolve with or without treatment in the acute stage[13].
Progression of HC to chronic stage may be due to persistent inflammation superadded by increased serum resistin levels in infections as in untreated hepatitis C. Resistin prolongs inflammation by production of pro-inflammatory cytokines as well as increasing cell adhesion molecules for chemotaxis process. Resistin is increased in Diabetic and obese patients[14].

MATERIALS AND METHODS

The current study included a total of 84 adult non-diabetic subjects (28 each group) from Hazara division of Khyber Pakhtunkha province including both genders equally. The study was approved by the Ethical Committee and Research Board of the University of Health Science, Lahore and DHQ Hazara division.
Group I:28 adults age 18-60 years without any apparent disease or viral infection.
Group II: untreated, fresh cases of HCV diagnosed by ELISA/PCR age 18-60 years.
Group III: Treated HCV patients with age 18-60 years who completed INF therapy last week.
Subjects having diabetics, hepatitis A, hepatitis B, any acute or chronic infection and obesity BMI >25 were excluded from the study. The subjects included in the study were examined in detail and were screened for exclusion criteria. A detailed history was taken from all the participants about the prior knowledge of disease, possible source of infection and screening status of their families.
Study Design: This is an analytical comparative study.
Blood Collection: After 10- 12 hours of overnight fast, 5 ml of blood was drawn from the superficial vein by aseptic techniques. Fasting blood glucose was checked by a glucometer (Xceed, Abbott). Blood was secured in SST vacutainers (yellow top) for extraction of serum. Serum was extracted by centrifuging the blood for 10 minutes at 3000 rpm. The serum was stored at – 80°C in Eppendorf still further analyzed. Serum resistin levels were measured using commercially available ELISA kits (Glory Science Co., USA). PCR was done for viral load estimation.
Statistical Analysis: The data were entered and analyzed using IBM S.P.S.S.(Statistical Package for Social Sciences software for windows) version 20. Mean ± SD was given for quantitative variables (age, serum resistin levels). Frequencies and percentages were given for qualitative variables (gender, sample group).
Shapiro-Wilk test was used to test the normality of data. The data given either as mean± SD for normally distributed variables or median IQR for non-normally distributed variables. The variables were compared to see any significant difference in their means. In case of normally distributed data, single factor ANOVA was applied followed by Tukey's post hoc test for three groups. Independent "t" Test was used for comparing means of parametric data.

RESULTS

Mean± SD of serumresistin levels of controls, untreated and treated groups were 4.32±0.99,5.33±2.32 and 4.69±2.32 respectively whereas Median (IQR) values were 3.95(3.35-6.87) for controls, 4.20 (3.01 -15.78) for untreated and 3.83 (2.81-13.40) for treated showed no significant difference (Kruskal-Wallis test; p =0.446).
Comparison of resistin between Treated & Untreated: No significant difference in resistin levels was found in treated and untreated group (Mann-Whitney U Test; p = 0.249).
Comparison of resistin between Controls &Treated No significant difference was found in controls and treated patients (Mann-Whitney U Test; p= 0.476).
Comparison of resistin between Controls & Untreated: No significant difference was found in levels of resistin in controls and untreated cases (Mann-Whitney U Test; p= 0.431).

DISCUSSION

Mean resistin levels in treated group (4.69 ug/L) and untreated group (5.33 ug/L) of HC cases were found to be higher than control group (4.32 ug/L) however, this difference was not significant (p=0.446). The only Significant difference for resistin levels was observed in untreated male and females (Mann Whitney test; p=0.046). study conducted by Iaconoin 2007 found that resistinlevels do not change during and after treatment[15]. Although mean serum resistin level of untreated HCV cases was higher (5.33 ug/L), than control value (4.23 ug/L) and treated cases (4.20 ug/L) but this difference was found to be statistically insignificant (p= 0.446). A study by Morace et al. also reported higher levels of resistin in HCV patients as compared to controls[16]. Normal serum levels of resistin were 5.3 (ng/mL) in controls and 12.1 (ng/mL) in HCV cases according to Tifticki et al in 2009[17].
Resistin is an adipocytokine secreted by adipose tissues so body fat content can affect serum levels of resistin as seen in studies by Azuma et al., in 2003, whereby subjects having body mass index (BMI) of more than 31 had higher mean (±SD) serum resistin levels (12.83±8.30)[18]. Similarly, a study by Zaidi and Shirwanyin 2015 also reported higher mean (±SD) (25±5) serum resistin levels in subjects havingBMI of more than 33[19]. In another study published in 2016, Niaz and Shirwany reported mean (±SD) serum resistin levels of 6.8 ±1.01 however BMI was not mentioned[20]. Our values of resistin, therefore, seem similar to the values reported by other authors for lean subjects. Also, any difference reported here can be because of ethnic differences as our samples were collected from Hazara

division (Abbottabad/Mansehra) which comes in Khyber PakhtunKha province while the subjects of Niaz and Sherwany were from Punjab province (Lahore).

CONCLUSION

A significant difference was found in serum resistin levels among male and females of untreated group. The difference in gender may be due to difference in fat distribution and percentage between the genders. The levels of resistin were lower in interferon treated cases of HC as compared to untreated cases. May be a study with higher number of samples and with a small age range between the sample population would have given significant difference between all groups.

Author's Contribution:

Concept & Design of Study:	Alamzeb Jadoon
Drafting:	Ayesha Gohier, Nazish Butt
Data Analysis:	Khalid Pervez Lone
Revisiting Critically:	Alamzeb Jadoon, Ayesha Gohier
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Protective Role of Antioxidant Oils in Phenytoin Induced Toxicity of Seminiferous Tubules in Rats

Khalique-ur-Rehman[1], Hina Khan[2], Uzma Hameed[3], Shahid Korai[2], Sadia Iqbal[3] and Raja Faisal[2]

ABSTRACT

Objective: To evaluate the protective role of virgin coconut oil and corn oil in phenytoin induced toxicity of rat on the basis of histomorphology of seminiferous tubules.

Study Design: Experimental study

Place and Duration of Study: This study was conducted at the department of Anatomy of Al-Tibri Medical College and Hospital, for a period of six months from October 2018 to November 2019.

Materials and Methods: 48 numbers of male albino rats were randomly selected with weight between 150-250gms. Four different groups were made on the basis of therapeutic agents. Group A control, Group B phenytoin induced intra-peritoneal, Group C virgin coconut oil plus phenytoin and Group D corn oil plus phenytoin. The sample was taken by given anesthesia and both testes were removed through dissection at 4th, 5th and 6th week. The sample was preserved for tissue processing and staining. Tubular dimension were measured through micrometry at 400x, mean of five different tubules from five different field areas were taken and one way ANOVA followed by post hoc tukey's test was applied to evaluate the significant difference among different groups. P value considered to be significant <0.05

Results: Mean value of tubular dimension was significantly reduced in phenytoin induced toxic group, while in group A and C shows significant restoration of tubular dimension as compared to group D on three different week.

Conclusion: Virgin coconut oils showed significant restoration of seminiferous tubules dimension when used along with phenytoin for 6 weeks in comparison of corn oil. Virgin coconut oil showed significant ant oxidative effects and alter the toxic effects of drugs if administered simultaneously

Key Words: Virgin coconut oil, seminiferous tubules, Phenytoin

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INTRODUCTION

It is an anticonvulsant, non-sedative drug which is used in the treatment of epilepsy. Male patients after the use of this drug complained of impotence. Chemically it is regarded as NO3 group name Antiepileptic. Its generic name is 5, 5 diphenyl-substituted hydantoin Trade Name; Epigran, Dilantin, Dantonio[1]. Phenytoin is excreted in human semen in small quantities, and this may affect the testosterone levels.

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Reduce the plasma concentration of free testosterone that has been detected in male epileptic patients receiving phenytoin. For those patients who are receiving phenytoin, the serum level of testosterone is reduced[2]. It has been observed that phenytoin has a mutagenic effect on human sperm cells. It is observed that hyposexulity and the low fertility rate are greater in epileptic patients than in the general population. There are reports that they reduce testicular weight, spermatic count, and gives abnormal morphology of spermatozoa. They reduce spermatozoa's motility to interfere with the normal HPG (hypophyseal gonadal) pathway[3]. Its biological name is Cocoas nucifera.

The coconut oil is abstracted by mechanical means from the mature kernel of the coconut with or without heat and without chemical refining called Virgin coconut oil. Virgin coconut oil is derived from COPRA. Myristic acid and Lauric acid are related to the average serum cholesterol concentration in humans. The lauric acid level in coconut is controlled by environment and genetics[4]. Lauric acid is a fatty acid derived from coconut for developing monolaurin. Monolaurin is an

antimicrobial agent for killing bacteria, yeasts, and viruses. Coconut oil contains flavonox and poly phenol that have potent antioxidant effects particularly in male fertility[5]. The corn oil is composed of Triacylglycerol 99% and Poly Unsaturated fatty acids (PUFA). Sperm cells contain a high proportion of (PUFA), and normal spermatozoa possess a high % of PUFA [6]. These PUFA are formed from linoleic acid (LA), and they give fluidity to the sperm plasma membrane, which helps in the fusion events of fertilization. More recently, antioxidants (AOX) and Phytosterols (PST), commonly found in substantial amounts in special oils, such as Pecan nut (PNO) Corn (CO) and grape seed (GSO) oils[7,8]. These oils are associated with a lower risk of inflammation, dyslipidemia, and low risk of oxidative stress required for the maintenance of endothelial integrity [9,10].

MATERIALS AND METHODS

The experimental study was carried out at Al-Tibri Medical College and Hospital, six months from October 2018 to November 2019. After taking ethical consideration from the ethical review committee of the concerned institute and the animals, they were taken from the animal house of Al-Tibri Medical College and Hospital. A total of 48 male Wister albino rats were taken through a randomized sampling technique with a weight of 150-250gms and equally divided into four different groups and kept them in separate cages for six weeks. Group A (control group) given standard diet and1 unit normal saline intraperitoneal daily once a day, Group B (Experimental group) given inj. Phenytoin 10mg/kg/body wt intra-peritoneal once daily. Group C (Virgin coconut oil) 6.7ml orally and the same dose of phenytoin once daily intra-peritoneal. Group D received 2.5 ml once daily, along with a similar application of inj. Phenytoin. The entire treatment plan was given for six weeks, and the sample was taken on the 4th, 5th, and 6th weeks. Throughout the period, 12hours of day and light cycle were maintained.

Sampling: Before starting the study, the weight of the animals was divided into four groups. At 4th, 5th and 6th week of the study, weight of animals was taken, and the animals were anesthetized with ethanol containing jar. After given anesthesia, the animals were sacrificed, and through dissection, the testis was removed and stored in formalin, the tissue of the testis were sent for preservation, embedding, and staining process for the histomorphological examination of the tissue. The tissue was stained with H&E.

Histomorphology: The tubular dimension was taken from different field areas of the slide (choose five field area). The tubular diameter was measured through micrometer, and then the mean of five different field areas at 400x were taken for the comparison among different groups. The reading was recorded in um.

Tubular Dimension= length x Breath/2

Photomicrograph was taken from DSLR camera for the comparison among the different groups.

Statistical Analysis: The Mean diameter of seminiferous tubules was recorded, and to compare the mean difference among the groups, the one-way ANOVA followed by post hoc tukey's was applied. The level of significance was considered p=<0.05.

RESULTS

Table No.1 shows Mean values of tubular dimension among different therapeutic groups in comparison with group B (experimental group). P value <0.05 was considered significant.

Photomicrograph: 1.1 shows the histomorphology of seminiferous tubules among different groups on 4th week of sampling. Significant reduction of tubular dimension was seen in Group B (phenytoin induced group), while significant restoration of tubules were found in Group A (control) and Group C (Virgin coconut oil) as compared with Group D (corn oil).

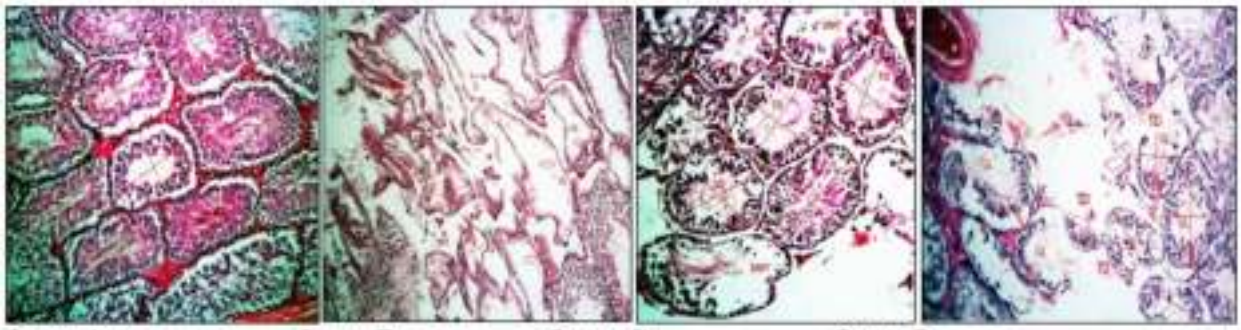
Photomicrograph: 1.2 shows the histomorphology of seminiferous tubules among different groups on 5th week of sampling. Significant reduction of tubular dimension was seen in Group B (phenytoin induced group), while significant restoration of tubules were found in Group A (control) and Group C (Virgin coconut oil) as compared with Group D (corn oil).

Photomicrograph: 1.3 shows the histomorphology of seminiferous tubules among different groups on 6th week of sampling. Significant reduction of tubular dimension was seen in Group B (phenytoin induced group), while significant restoration of tubules were found in Group A (control) and Group C (Virgin coconut oil) as compared with Group D (corn oil).

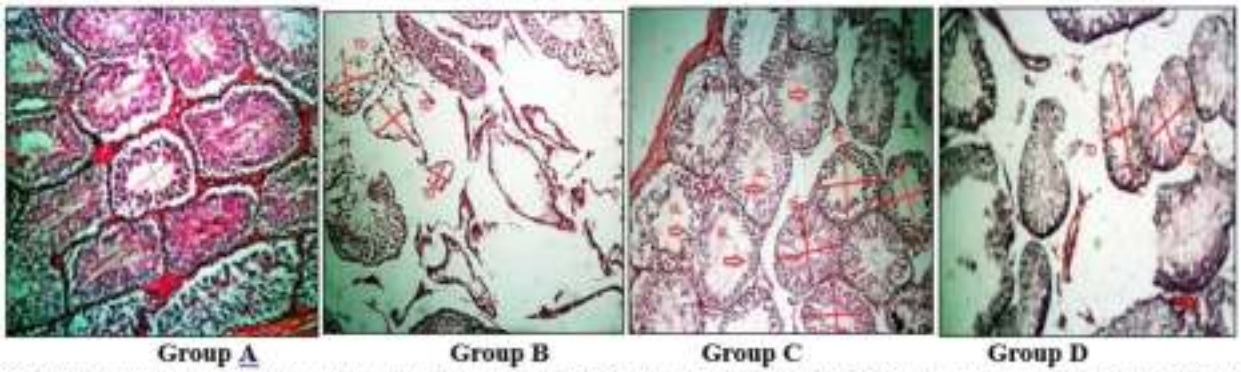
Table No1: Comparison of tubular dimension of seminiferous tubules among the different groups (um)

Weeks	Mean tubular dimension of seminiferous tubules	Groups	Mean tubular dimension of seminiferous tubules	Comparison of groups	P-Value
4th week	B 18.6 ± 3.21	A	44.6 ± 3.93	B vs A	<0.001
		C	33.6 ± 2.93	B vs C	<0.001
		D	19.6 ± 2.37	B vs D	0.481
5th week	B 12.4 ± 3.12	A	45.2 ± 2.72	B vs A	<0.001
		C	38.8 ± 2.71	B vs C	<0.001
		D	11.8 ± 1.79	B vs D	0.597
6th week	B 9.4 ± 1.19	A	44.4 ± 2.75	B vs A	<0.001
		C	43.2 ± 2.59	B vs C	<0.001

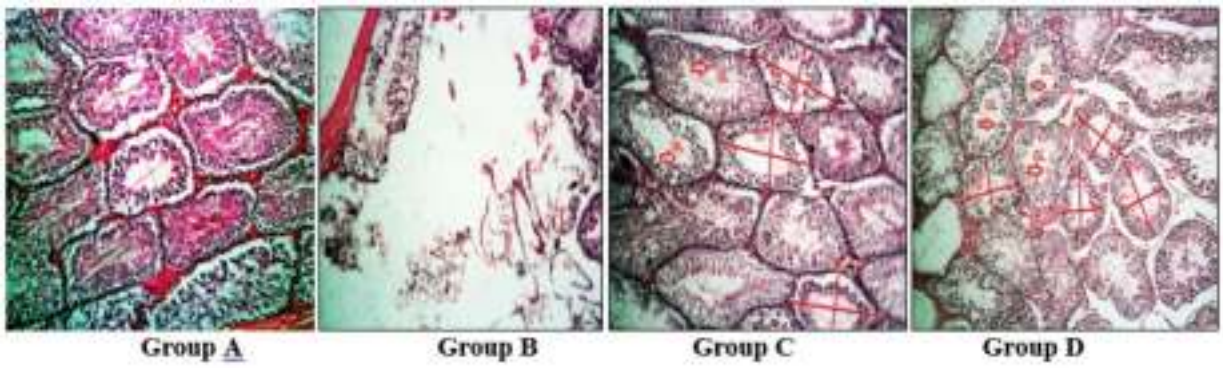
		D	9.8 ± 2.36	B vs D	0.229



Photomicrograph 1.1 represents the tissue of seminiferous tubules with H&E stain and showing the tubular dimension at 4th week among different groups (400x). (GL) germinal layer, (TD) tubular dimension



Photomicrograph 1.2 represents the tissue of seminiferous tubules with H&E stain and showing the tubular dimension at 5th week among different groups (400x). (GL) germinal layer, (TD) tubular dimension



Photomicrograph 1.3 represents the tissue of seminiferous tubules with H&E stain and showing the tubular dimension at 6th week among different groups (400x). (GL) germinal layer, (TD) tubular dimension

DISCUSSION

Following the results of Oluwatosin et al:2016, testicular toxicity induced with the application of antiretroviral therapy, which leads to drastic effects on male fertility the same as in our study produced with phenytoin. In a similar study, the virgin coconut oil was used to observe the antioxidant effects on male fertility and sperm morphology. There was a significant reduction of sperm motility $p<0.01$ in animals after being treated with HAART. On the other hand, in the group of virgin coconut oil HAART, the significant restoration of numbers sperm and maintain the sperm motility almost near to the normal value. Similar findings were found in our study in a group of phenytoin and virgin coconut oil. The readings were taken at an interval of 4, 5, and 6 weeks [11,12]. The ratio of polyunsaturated fatty acids had potent inhibitory action that influences on lipid peroxidation, and Virgin coconut oil is highly rich in polyunsaturated fatty acids, so similar in our study the virgin coconut oil showed their antioxidant effects in male fertility as related in

this study the virgin coconut oil evidence more significant antioxidant role in comparison with copra oil and groundnut oil. At the same time, the same results were found in our study [7,13]. In the same study, the virgin coconut oil and HARRT showed a significant reduction in the diameter of seminiferous tubules; moreover, there was no effect on the germinal layer. By the results of our study, the virgin coconut oil along with phenytoin had a potent role in the restoration of tubular diameter and thickness of germinal epithelium in the animal taken long term phenytoin intra-peritoneal once daily. The effects were measure with an interval of 4, 5, and 6 weeks.

Additionally, virgin coconut oil mixed with groundnut oil or olive oil was observed to be more effective in inhibiting LDL oxidation, and stimulate hepatic antioxidant enzyme activity. The antioxidant activity of virgin coconut oil was linked to high polyphenol compounds in the oil. Polyphenols were reported to be a stronger antioxidant than vitamin C and E in vitro on a molecular basis [9, 14].

CONCLUSION

Virgin coconut oils showed significant restoration of seminiferous tubules dimension when used along with phenytoin for 6 weeks in comparison of corn oil. Virgin coconut oil showed significant ant oxidative effects and alter the toxic effects of drugs if administered simultaneously**.**

Author's Contribution:

Concept & Design of Study:	Khalique-ur-Rehman
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Revisiting Critically:	Sadia Iqbal, Raja Faisal
Final Approval of version:	Khalique-ur-Rehman

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Frequency of Depression in Patients with Diabetes Mellitus

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ABSTRACT

Objective: In this study, we will determine the prevalence of depression in diabetes and its association with gender and duration of diabetes.

Study Design: Cross Sectional Study

Place and Duration of Study: This study was conducted at the OPD of diabetes in Civil Hospital Karachi from June 2019 to Jan 2020.

Materials and Methods: 273 previously confirmed diabetic patient for 2 or more years of either gender between age group 21-65 were enrolled after informed consent. Diagnosis and sternness of depression was evaluated through Hamilton rating scale for depression (HAM-D).

Results: Out of 273, 92 (33.6%) patients had depression according to HAM-D scale. Depression was more common in females in comparison to male; though, the disparity was not adequate (60.9% vs. 39.1%. p value: 0.07). Men had 22.2% mild depression, 50% moderate depression and 27.8% severe depression. Female had 18% mild depression, 48% moderate depression and 34% severe depression.

Conclusion: Depression is very prevalent in diabetic population, particularly in female and participants with recent duration of diabetes. It is important that psychological evaluation of diabetic patient should be done periodically, and appropriate treatment should be common after diagnosis.

Key Words: Depression, prevalence, diabetes, Pakistan

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INTRODUCTION

The international diabetic federation in 2017 ranked Pakistan in second number among twenty-one countries in MENA region for the prevalence [1]. Pakistan has approximately 28 million case of diabetes above the age of 20 [2]. Diabetes mellitus (DM) affects patient's quality of life and management of diabetes also puts huge financial burden on them [3,4].

Numerous studies have studied the psychological implications of patients suffering from diabetes. And found that depression is quite prevalent in patients suffering from diabetes [5,6].

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De Groot M et al. showed that depression may be responsible for diabetes rather than diabetes causing depression. [7].

Globally, frequency of depression has been described in diabetes as 25-25% [8].

Despite diabetes being very prevalent in Pakistan, management of diabetes is only focused on maintaining blood glucose level and preventing complications. Psychological impact of diabetes is rarely considered. In this study, we will determine the prevalence of depression in diabetes and its association with gender and duration of diabetes.

MATERIALS AND METHODS

This cross-sectional study was accomplished within OPD of diabetes in civil hospital Karachi from June 2019 to Jan 2020. 273 previously confirmed diabetic patient for 2 or more years of either gender between age group 21-65 were enrolled after informed consent. Sample size was calculated using online calculator (medcalc) using 23% prevalence of depression is [9].

Patient with history of comorbid or complications of diabetes, patients with history of substance abuse and patient with history of psychiatric illness were excluded from study. After informed consent, all relevant information was recorded on the case report form. Diagnosis and severity of depression was assessed through Hamilton rating scale for depression (HAM-D).

Score were categorized as mild 8-17, moderate 8-15 and severe 26 and above [10].

Statistical Package of Social Sciences (SPSS) v. 21.0 (IBM Corporation, Armonk, New York, United States) was used for the statistical analysis. Continuous variables were represented as means and standard deviations (SDs) while categorical variables were represented as percentages and frequencies. Chi square test was applicable. P value of ≥ 0.05 indicated that null hypothesis was not valid and there was difference between the groups.

RESULTS

The mean age of participants in this study was 40.3 ± 9.05 years. The mean duration of diabetes mellitus is 4.7 ± 2.03 years. There were 110 (40.3) males and 163 (59.7%) females. Out of 273, 92 (33.6%) patients had depression according to HAM-D scale. Depression was more common in females compared to male; however, the difference was not significant (60.9% vs. 39.1%. p value: 0.07) (table 1).

Table 1: Frequency of Depression Gender wise

Gender	Diagnosis of Depression		P value
	Yes	No	
Male	36 (39.1%)	74 (41%)	0.07
Female	56 (60.9%)	107 (59%)	

Men had 22.2% mild depression, 50% moderate depression and 27.8% severe depression. Female had 18% mild depression, 48% moderate depression and 34% severe depression (table 2).

Table No.2: Severity of Depression gender wise

Gender	HAM-D Score			P value
	Mild n (%)	Moderate n (%)	Severe n (%)	
Male	8 (22.2%)	18 (50%)	10 (27.8%)	0.49
Female	10 (18%)	27 (48%)	19 (34%)	

Fifty nine (64.1%) participants who had depression had recent diagnosis (less than 5 years) (table 3).

Table No.3: Severity of Depression based on Duration

Years since diagnosis	HAM-D Score			P value
	Mild n (%)	Moderate n (%)	Severe n (%)	
Less than 5	9 (50%)	29 (64.4%)	21 (72.4%)	0.29
5 or more	9 (50%)	16 (35.6%)	8 (27.6%)	

DISCUSSION

Psychiatric disturbances are common in patients suffering from diabetes. This predisposition to psychiatric disorders is because of chronic nature of disease and individuals with this condition are highly predisposed of impediments, likewise, nephropathy, retinopathy, and cardiovascular problems [11]. Furthermore, an extensive period of stringentregimenedge, glucose scrutinizing, and taking medicine can cause psychosomatic instability. Research reports have revealed higher prevalence of depressing indicators in diabetic patients that goes up with disease chronicity and complications [12-14].

Our study reports prevalence of 33.6% depression in diabetic patient. Sabira et al. reports a prevalence of 40% in their study [15]. In our study, female had more depression compared to male. This was also comparable to result of Sabira et al [15].

In this study the high incidence of depression in early years of diagnosis of diabetes (64%) as compared to latter years (36%) may be explained by that diabetes may escalate chances of depression because of logic of risk and damage associated with getting this diagnosis and the significant daily life changes essential to prevent emerging devastating problems.

Patients with complications may have more depressive symptoms compared to those without it. Sabira et al. reported that diabetic retinopathy, diabetic nephropathy, and diabetic neuropathy also were associated with significantly higher rate of depression compared to diabetic patient without depression [15]. Depression in diabetes is also associated with increase mortality. A recent study reports 2.5 times more death in diabetic patient who are depressed compared to diabetic patients who are not depressed [16].

It is important to understand the role of depression in diabetes. Management of diabetes should include frequency psychological evaluation by trained psychiatrist. This recommendation is in line with American Diabetic Association guideline [17]. Diabetic educator plays a huge role in screening for depression. They should educate diabetic patients and clarify misconceptions regarding diabetic management, especially in under-resourced country like Pakistan [15].

Our study adds to limited data that is available on prevalence of depression in diabetes. However, it has its limitation as well. Firstly, this study was conducted in tertiary care centre, which mostly cater to people with severe illness. Furthermore, this study was conducted in government funded hospital and its clientele comes from poor economic states, which is also associated with depressive disorder. Finally, the sample of study was from clinical population visiting hospitals, which has high prevalence of depression than the people residing in the community. All of these factors could have led us to report higher prevalence of depression in diabetes. It is important that community based large-scale survey should be done to determine the

prevalence of depression in diabetes and risk factors associated with it.

CONCLUSION

This study suggests that the prevalence of depression is much higher in Pakistani patients with type 2 diabetes mellitus. We suggests that diabetic educator and nurses should be trained to administer screening test like PHQ-9 or HAM-D questionnaire to diabetic patient. Patients with positive PHQ-9 and HAM-D score should be send to psychiatrist for further evaluation.

Author's Contribution:

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Data Analysis:	Zuhaib Ahmed, Inayatullaha Awan, Jawed Akbar Dars
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Comparison of Clinical Outcome of Periapical Surgery in Endodontic and Oral Surgery Units of a Teaching Dental Hospital

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ABSTRACT

Objective: To compare the outcome and factor affecting the periapical surgery performed in endodontic and in oral surgery units of a teaching dental hospital.

Study Design: Randomized control trial study.

Place and Duration of Study: This study was conducted at the Bibi Aseefa Dental College, Larkana from January 2019 to January 2021 in two year duration.

Materials and Methods: Study was conducted on 120 patients, half of them 60 patients were operated by endodontist and half 60 patients were operated by oral surgeon. Success rate and failure of radiographic and clinical outcomes were main outcomes. SPSS version 23 was used for data analysis. Tests of significance (t-test and chi square test) were applied. P value ≤0.05 was considered as significant

Results: Good periapical surgery was noted as 61.5% and 70.2% in successful and unsuccessful patients, respectively. Good coronal seal noted in 84.6% and 87.2% in successful and unsuccessful patients, respectively. Post was observed in 50.0% successful patients. No difference was statistically significant

Conclusion: There is no significant difference regarding radiographic and clinical success and failure between periapical surgery in endodontic and oral surgery units. Quality of filling and filling material are two main contributing factors of periapical surgery.

Key Words: Periapical surgery, Endodontist, oral surgeon, Periapical lesion treatment

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INTRODUCTION

Apical periodontitis (AP) or periapical periodontitis is an inflammatory lesion around the apex of a tooth root usually caused by invasion of microorganisms (Bacteria) in tooth pulp[1]. Some dentists thought that periapical disease can be managed with root canal method because of its high success rate about 98%[2]. But in cases in which root canal fails incidence of failure must be kept in mind before start of further management strategy. Causes of failure include resistant intracanal infection, coronal leakage, extra radicular infection,cyst,by residual intracanal infection and foreign body reaction[3].

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Sometime lesions present in mandible or maxillary bone or around its several roots which may destroy the support of tooth and cause infection and moderate to severe pain[4]. Size of lesion vary from small (< centimeter) that may be treated with root canal of the tooth by a senior odontostomatologist[5]. In most of cases root canal solve the problem of patients but not all cases. In some cases when root canal doesn't resolve the lesion repeat of root canal is suggested[6]. Periapical surgery will be indicated if second attempt of root canal is failed. These lesions are called granulomas and periapical cysts and its origin it's in a chronic dental infection[7].

Surgical extraction of tooth root is the main part of periapical surgery which removes the lesion thoroughly[8]. This procedure usually accompanied by preparation of root cutting of tooth or sealing off with special cement or amalgam[9]. If periapical lesion is not removed properly or treated aggressively it can cause multiple infections or increase in lesion size, infection of adjuvant teeth and destruction of bone[10].

Only two options are alternatives if periapical lesion hasn't respond to root canal procedure[11]. One is periapical surgery and 2nd is exodontias of tooth. Other than periapical surgery exodontias have advantage of early healing and disadvantage of tooth losing which

may be restored with prosthetic later on.On other hand periapical surgery have advantage of tooth keeping and disadvantage of slow and lesser healing rate[11].

Conservative treatment always appreciated and regarded as best treatment choice[12]. But a case in which further treatment with conservative method is not possible periapical surgery is an ideal alternative treatment[13]. Periapical surgery may be treatment of choice if conservative treatment gives poor outcomes. Success rate of periapical surgery is about 95% that varies case to case and depends upon treatment procedure, case selection, statistical analysis, evaluation period and most likely criteria of success evaluation[14].

Many studies have been conducted to evaluate the effect of different variables on outcomes of periapical surgery and all authors develop consensus that sex, age, tooth type preoperative signs statistically affect the surgical healing after operative procedure and other influencing factors are contradictory[15]. It was also reported that presence of periapical radiolucency before surgery affects the surgical outcomes after periapical surgery. Quality and composition of root canal filling is a climacteric factor but some controversial studiers also found. Some authors support material in place of amalgam[16].

Oral surgeons and endodontists both perform surgery of periapical region but their clinical skill, approaches, culture, philosophies, training pathway and attitudes are different that may affect outcomes significantly[1].

MATERIALS AND METHODS

Patients who had periapical surgery at Bibi Aseefa Dental College, Larkana were enrolled in study. Study was started after ethical approval from hospital ethical board. Informed written consent was obtained from patients and they were ensured about their confidentiality. Non probability consecutive sampling technique was used.

A total of 120 patients was included in study and divided into two groups (Group A and B) 60 patients in each group. Patients in group A were operated by endodontist and in group B were operated by oral surgeon. All types of tooth were included. All patients were assessed in endodontic unit before periapical surgery. Prerequisite of surgery were coronal restoration and satisfactory root filling. High speed hand pieces, ultrasonic retro tips amalgam was used in all cases. During surgical procedure radiographs were taken to check the status and placement of material in periradicular tissues. Postoperative analgesics, antibiotics and mouthwash were advised. After one week sutures were removed and patients were followed up till 2 years biannually.

Treatment protocol in oral surgery department was not different but Operative procedure was done by using slow speed hand piece, tungsten carbide burs and amalgam was used. Intraoperative radiographs and post-operative analgesics, antibiotics and mouth wash were advised. Sutures removed after 14 days. Two years follow up was completed.

Outcomes measures were assessed radiographically and clinically and recorded on a predesigned performa. Data analysis was done by using SPSS version 23, mean and SD were calculated and presented for numerical data and frequency percentages were calculated for categorical data. Test of significance (t-test and chi square test) were applied. P value less than or equal to 0.05 was taken as significance.

RESULTS

One hundred and twenty patients were included in this study, both genders in which n=26 (21.7%) patients were successful and n=94 (78.3%) patients were unsuccessful. The mean age of successful patients was 46.26±8.39 years. There were n=11 (42.3%) males and n=15 (57.7%) females. Incisors/canines, premolars and molars was observed in n=9 (34.6%), n=8 (30.8%) and n=9 (34.6%) successful patients, respectively. While, the mean age of unsuccessful patients was 44.82±7.63 years. There were n=53 (56.4%) males and n=41 (43.6%) females. Incisors/canines, premolars and molars was observed in n=53 (56.4%), n=25 (26.6%) and n=16 (17.0%) patients, respectively. No difference was statistically significant. (Table. I).

Table. No.1: Demographic characteristics of successful and unsuccessful patients

Variable	Successful n=26 (21.7%)	Unsuccessful n=94 (78.3%)	P-value
Age (years)	46.26±8.39	44.82±7.63	0.403
Gender			
Male	n=11 (42.3%)	n=53 (56.4%)	0.203
Female	n=15 (57.7%)	n=41 (43.6%)	
Incisors/ canines	n=9 (34.6%)	n=53 (56.4%)	0.081
Premolars	n=8 (30.8%)	n=25 (26.6%)	
Molars	n=9 (34.6%)	n=16 (17.0%)	

Preoperative pain, sinus and root filling were noted in n=7 (26.9%), n=17 (65.4%) and n=20 (76.9%) successful patients, respectively. Good root filling density and preoperative nonsurgical retreatment was noted in n=16 (61.5%) and n=20 (76.9%) successful patients, respectively. While, preoperative pain, preoperative sinus and preoperative root filling were noted in n=40 (42.6%), n=37 (39.4%) and n=66 (70.2%) unsuccessful patients, respectively. Good root filling density and preoperative nonsurgical retreatment was noted in n=53 (56.4%) and n=35 (37.2%) unsuccessful patients, respectively. Preoperative

periapical lesion in successful and unsuccessful patients was observed as n=23 (88.5%) and n=77 (81.9%), respectively. No difference was statistically significant. (Table. 2).

Table No.2: Frequency of successful outcomes

Variable	Successful n=26 (21.7%)	Unsuccessful n=94 (78.3%)	P-value
Preoperative pain	n=7 (26.9%)	n=40 (42.6%)	0.148
Preoperative sinus	n=17 (65.4%)	n=37 (39.4%)	0.018
Preoperative root filling	n=20 (76.9%)	n=66 (70.2%)	0.502
Good root filling density	n=16 (61.5%)	n=53 (56.4%)	0.638
Preoperative non-surgicalre-treatment	n=20 (76.9%)	n=35 (37.2%)	0.638
Preoperative periapical lesion	n=23 (88.5%)	n=77 (81.9%)	0.428

Table No.3: Frequency of successful outcomes

Variable	Successful n=26 (21.7%)	Unsuccessful n=94 (78.3%)	P-value
Previous surgery	n=4 (15.4%)	n=25 (26.6%)	0.237
Root-end resection	n=23 (88.5%)	n=83 (88.3%)	0.982
Ultrasonic retro-preparation	n=1 (3.8%)	n=15 (16.0%)	0.108
Root-end filling	n=18 (69.2%)	n=76 (80.9%)	0.203
Amalgam	n=21 (80.8%)	n=84 (89.4%)	0.456
Good periapical surgery	n=16 (61.5%)	n=66 (70.2%)	0.400
Good coronal seal	n=22 (84.6%)	n=82 (87.2%)	0.728
Post	n=13 (50.0%)	n=52 (55.3%)	0.630

Previous surgery, root-end resection and ultrasonic retro-preparation and root-end filling in successful patients were observed as n=4 (15.4%), n=23 (88.5%), n=1 (3.8%) and n=18 (69.2%) respectively. While, previous surgery, root-end resection and ultrasonic retro-preparation and root-end filling in unsuccessful were observed as n=25 (26.6%), n=83 (88.3%), n=15 (16.0%) and n=76 (80.9%) respectively. Amalgam was noted as n=21 (80.8%) and n=84 (89.4%) in successful and unsuccessful patients, respectively. Good periapical surgery was noted as n=16 (61.5%) and n=66 (70.2%) in successful and unsuccessful patients, respectively. Good coronal seal noted in n=22 (84.6%) and n=82 (87.2%) in successful and unsuccessful patients, respectively. Post was observed in n=13 (50.0%) successful patients. No difference was statistically significant. (Table. 3).

Table No.4: Treatment outcome by clinical and radiographic criteria

Variable	Endodontic Unit n=58 (21.7%)	Oral Surgery Unit n=62 (51.7%)	P-value
Clinical success	n=42 (72.4%)	n=40 (64.5%)	0.353
Radiographic success	n=21 (36.2%)	n=16 (25.8%)	0.218
Radiographic uncertain	n=24 (41.4%)	n=33 (53.2%)	0.194
Radiographic failure	n=14 (24.1%)	n=9 (14.5%)	0.181
Combined success	n=25 (43.1%)	n=33 (53.2%)	0.267
Combined uncertain	n=14 (24.1%)	n=12 (20.7%)	0.525
Combined failure	n=12 (20.7%)	n=32 (51.6%)	0.000

DISCUSSION

Periapical surgery for endodontic treatment failure has good outcomes but lack of standardization makes it contradictory. Assessment method, recall period, statistical analysis and comparison of method are contributing methods[17]. A study was conducted by Hepworth et al and reported that success rate of 59% after surgery in orthodontic and failure rate was 19% after apical surgery. Outcome measures were assessed by radiographic and clinical method[18].

In our study we used both radiographic and clinical assessment for evaluation of outcomes but in previous studies some authors assessed only radiographic method and some used only clinical assessment. Evaluation of periapical outcomes by only radiographic method is problematic and considered as questionable[19]. A study was conducted by Rudet al[20] on comparison of conservative re-treatment and periapical surgery and concluded that periapical surgery only useful in cases of conservative failure.

Another study was conducted by Rahbaranet al[21] in 2001 and reported that outcomes of periapical surgery were dependent on quality of surgery and presence of lesion. Complete healing in this study was 37.45 in endodontic unit and 19.4% in oral surgery unit. Correct

placement of filling materials in periapical tissue is also necessary and contributing factor in success rate of surgery[22].

Periapical radiolucency is also an important contributing factor on results of surgical outcomes but in contrast Lustmannet al[23] concluded no significant effect on outcomes. Similar findings were reported by Hirsch et al[24] that surgical outcomes of periapical surgery may be affected by radiolucency of periapical region. In our study we didn't find any observation of such type.

In our patients we used amalgam as filling material in both groups as many authors demonstrated that composition of filling material influence the outcomes and contribute in success rate and failure[25]. But this statement is contradictory as some investigators give favor to material other than amalgam. Rapp et al conducted a study and reported that amalgam have equally good results[26].

A study was conducted by Elemam et al on comparison of success rate of endodontic treatment and concluded that further research with improved study design are required to compare long term outcomes and success rate[27]. Results of this study are valid and identical to number of previous researches.

CONCLUSION

There is no significant difference regarding radiographic and clinical success and failure between periapical surgery in endodontic and oral surgery units. Quality of filling and filling material are two main contributing factors of periapical surgery.

Author's Contribution:

Concept & Design of Study:	Nadia Bashir
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Addiction Treatment Facilities and Drug Rehabilitation Centers

Are We Ready to Fight the War*?* : A Cross-Sectional Report on the Expertise and Infrastructure of Addiction Treatment Facilities and Drug Rehabilitation Centers in South Punjab, Pakistan

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ABSTRACT

Objective: To evaluate the expertise and infrastructure of addiction centers and drug rehabilitation programs in South Punjab, Pakistan.

Study Design: A descriptive Cross – sectional study

Place and Duration of Study: This study was conducted at the Multan Medical & Dental College, Multan from March 2020 – March 2021.

Materials and Methods: This questionnaire has been formulated based on the quality parameters set by UNODC and includes various capacity domains including the facilities being offered, expertise available, policy making, audit protocols and infrastructure present in each facility. Data was collected from 18 addiction and drug rehabilitation centers from all across South Punjab, Pakistan.

Results: Out of the 18 centers, 6 were private set-ups and 12 were government run. Sixty six percent of the centers offered inpatient admission services. The bed capacity varied from 10-100 beds across all centers and the average stay varied from 1 week to 3 months. Average cost for stay for private centers was 3000 PKR [19.15 $] per day [range: 9.57$-63.8$] whereas Government institutes charged standard fee of 200 PKR [1.28$] per day. Only 39% of the centers had a psychiatrist or addiction specialist. Only 20% had a sociological officer. All the centers reported doing symptomatic management. No center reported using tapered dose regimen for Alcohol and BDZ detoxification or using Buprenorphine or Methadone for Opioid withdrawals.

Conclusion: This is the first of its kind of study to evaluate the drug treatment and rehabilitation centers of South Punjab, Pakistan in terms of infrastructure and expertise. The authors found vacuums in the current practice especially regarding the absence of psychiatrist or addiction specialist in many of these centers and noncompliance with any international guidelines as well as the high cost of treatment in private setups which is also an area of concern.

Key Words: drug detoxification, substance abuse, rehabilitation centers, Pakistan, South Asia

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INTRODUCTION

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The entire world has been engulfed in the rapidly spreading fire of substance dependence and addiction since last several decades. Illicit drugs are drugs for which non-medical use has been prohibited by international drug control pacts because they cause risks of addiction to users and various bodily and psychosomatic adverse effects[1]. Internationally, Illicit drug dependence lead to for 20·0 million DALYs (95% UI 15·3–25·4 million), accounting for 0·8% (0·6–1·0) of global all-cause DALYs. Globally, people are more dependent on opioids than other drugs[2].

Pakistan is one of the ten most populous country in the world (population: 197 million). In the past several years, the rate of drug use has gone up all across the country. UNODC estimated that 149–271 million people aged 15–64 years (3·3–6·1%) had used an illicit

drug at least once in 2009 in Pakistan[3]. This is an important area of concern as addiction not just impacts an individual's life but creates ripple effects on the society at large leading to disease, unemployment and morbidity burden. In a third world country like Pakistan, this adds greatly to the economic burden and compromised productivity of youth. It also raises questions about the factors leading to initiation as well as continuation of drug dependence and addiction in our cultural context and the need to find answers.

In view of the disease burden, many countries have drug detoxification centers and facilities. There is also extensive research on the differences between quality treatments in these facilities. A study done on rural drug detoxification centers in USA revealed structural and quality differences between rural and urban centers with rural centers having less specialized counselors and limited prescription of buprenorphine[4].While treatment facilities and addiction centers are prevalent all across the world, their quality assurance in south Asia is dubious. A study done in Thailand reported that the majority of drug treatment options in Thailand do not comply with medical standards[5]. It is not uncommon to discover that many treatment programs manage on moral model of addiction- often through means of coercion and detention. Another report from India states that "…. a large number of unauthorized 'de-addiction' centers have proliferated to cash in on the desperation of people who use drugs and their families"[6].

The healthcare model of Pakistan allows for both the government –run institutes as well as the private ones to establish drug treatment centers and rehabilitation facilities to cater to the population. In the past several years, south Punjab has witnessed the mushrooming of many such centers like the rest of the country. In the absence of any uniform regulatory authority and external quality audits, the onus of quality assurance falls on the setups themselves which has led to significant variation in terms of expertise and infrastructure. Most are unregistered and lack basic skills. We have no data till date comparing the quality, expertise and infrastructure of addiction centers and rehabilitation programs to the international standards especially those set up by UNODC in the treatment quality standards manual[7].

The aim of this study is to review the quality of the drug detoxification and/or rehabilitation and treatment centers in South Punjab [both public and private sector] and to evaluate if the facilities, expertise and infrastructure are at par with the international standards set by United Nations. It is hoped that this study will create a space for self-introspection and audit and pave way for implementation of quality assurance guidelines and state-of-the-art centers in future.

MATERIALS AND METHODS

This is a descriptive Cross – sectional study using Non – probability purposive sampling. It was conducted at Multan Medical & Dental College, Multan from March 2020 – March 2021. Data was collected from 18 addiction and drug rehabilitation centers were included from all across South Punjab, Pakistan. Duration of the study was within one Year after approval from IERB. We included treatment facilities offering detoxification or rehabilitation service working in both public and private sectors in South Punjab. Treatment facilities offering detoxification or rehabilitation services outside south Punjab or religious or alternative medicine institutes were excluded.

After taking informed written consent and approval from the institutions, a self-formulated questionnaire will be filled by the administrative staff in the presence of one of the authors. This questionnaire has been formulated based on the quality parameters set by UNODC and includes various capacity domains including the facilities being offered, expertise available, policy making, audit protocols and infrastructure present in each facility. Participants will be ensured confidentiality and ethical approval from relevant institution will be taken.

Data was entered and analyzed via SPSS version 23.0., demographic patterns will be presented in the form of mean and SD. Socio-demographic variables and the response to questions will be presented in the form of tables and figures. Where relevant, Pearson chi-square test will be applied on categorical variables and p-value of < or equal to 0.05 will be considered statistically significant.

RESULTS

We collected data from 18 drug and rehabilitation centers/ services across South Punjab. The cities included were Multan, Bahawalpur, DG Khan, Rahimyar Khan, Bhakkar, Mianwali, Muzzafargarh, Lodhran, Khanewal and Layyah. Out of the 18 centers, 6 were private set-ups and 12 were government run. Out of the 12 government-run set-ups, 7 were DHQ [secondary level care, district health quarter] Hospitals and 5 were tertiary level care public hospitals.

Infrastructure: The duration since establishment of centers varied greatly ranging from 2 years to 30 years. All private institutions relied on self-financing for funding whereas all Government run institutes were funded by government. One government-run set-up was being partially funded by self-funding and 66 % of the centers offered inpatient admission services. On closer inspection, all Private centers and government run tertiary care institutes had facilities for inpatient admission and short term or long term stay. On contrary, just one out of 7 DHQ hospital in South Punjab is offering inpatient admission for drug detoxification or rehabilitation. One DHQ had neither in patient or outpatient facility. One center offered admission to male patients only whereas other had facilities for both gender.

The bed capacity varied from 10-100 beds across all centers and the average stay varied from 1 week to 3 months. Private centers emphasized more on long term stay with an average stay of 1.5 months whereas Government run set-ups had shorter stays for acute detoxification only [average being 6 days].

The number of clients seen per month ranged from 5-100. Average cost for stay also showed significant variance as Private setups charged on average 3000 PKR [19.15 $] per day [range: 9.57$-63.8$] whereas Government institutes charged standard fee of 200 PKR [1.28$] per day.

Table No.1: Detail of clients seen per month

Presence of at least one professional in following specialists [center wise]:	Overall Centers [n:18]	Private [N: 6]	DHQ Hospitals [n:7]	Tertiary care Govt. Hospitals [n:5]
Consultant Psychiatrist [FCPS/MCPS/ DPM/ MD/MRCPsych]	7 [39%]	2	1	4
Clinical Psychologists	17 [95%]	6	6	5
Medical officer	15 [83%]	5	6	5
Occupational therapist	1 [5 %]	0	0	1
Sociolegal officer	4 [22%]	0	0	4
Liasion facilities	12 [66%]	1	6	5

All the centers reported doing symptomatic management [including tranquilizers, chemical and physical restraint] for drug detoxification and were following their own self-formulated guidelines in this regard. No center reported using tapered dose regimen for Alcohol and BDZ detoxification or using Buprenorphine or Methadone for Opioid withdrawals.

All 18 centers reported that they are documenting their patients and keeping a registry but the authenticity and quality of record collection was not surveyed in this research. 13 out of 18 centers reported that they admit patients with comorbid psychiatric or medical issues also.

DISCUSSION

Our study noted some interesting observations which will pave ground for further debate and research.

There is no uniform government policy on establishing drug rehabilitation services throughout the south Punjab region. One drug rehabilitation center in Multan is the only purpose built facility by the Punjab Government. The efforts made by government are being supported and supplemented by the private sector which, unfortunately, has no accountability or external audit system. This is in sync with the findings from Veitnam[8]where there are multiple centers and Compulsory treatment centers [CTC] for drug detoxification without any quality control.

We also noticed huge discrepancy and variation in the per day admission charges between government and private institutes. One private center was charging up to 65$ per day while most government –run institutes charged around 1-2$ a day. This raises serious concerns as Pakistan is a third world country with inadequate resources and it is an enormous burden for people to pay out of their pockets. Despite more fee charges, only 2 out of 6 private institutes had a consultant psychiatrist or addiction specialist. Most had set-ups being run by medical officers and clinical psychologists. None of the private centers had a socio-legal officer or occupational therapist managing the social aspect and vocational aspect of drug dependence for the clients/patients.

While most centers claimed to have facilities for female inpatient admission, our previous research indicate that only 1 % of population admitted is female[9]. This makes one wonders about the reluctance and stigma females face in seeking drug detoxification services and what can we do to improve this.

One of the most interesting and concerning findings we came across was that all of the centers were using symptomatic management and/or physical restraint as their mode of management. All tertiary care hospitals, DHQs and private set-ups claimed to be following their own self-formulated guidelines instead of keeping any international guideline such as NICE or UNODC or Maudsley prescribing guidelines as a benchmark. No center in south Punjab is using tapering scheduled regimen of Benzodiazepine [BDZ] for Alcohol or BDZ withdrawal neither is there any practice of prescribing methadone or buprenorphine for opioid withdrawals. This is in sharp contrast with our neighboring countries India[10] and Iran[11] where multiple studies show use of buprenorphine and methadone for drug detoxification and long-term maintenance.

Another very important issue is regarding the compulsory and against-will admission for drug detoxification and rehabilitation. This is a common practice all across Asia. Kamarulzaman et al reported various such centers all across Thailand, China and Vietnam which continue to operate despite legal and ethical violations of basic human right[12].These centers have been critiqued for a range of human rights abuses including compulsory and indefinite detention, physical abuse and lack of any medical care. Interviews with previously detained individuals signify that the core component of treatment are forced work regimens set within an abusive environment, tough physical exercises, and military style training[13].The authors strongly feel that most centers in South Punjab are no

different. There is a very limited awareness regarding motivational counselling and in realizing that addiction needs to be treated as a disease/disorder and not as a byproduct of immoral conduct.

Lastly Government's initiative to establish a fully funded free-of-cost center in Multan, should be applauded and encouraged and a network of such centers may be created all across the country.

CONCLUSION

This is the first of its kind of study to evaluate the drug treatment and rehabilitation centers of South Punjab, Pakistan in terms of infrastructure and expertise. The authors found vacuums in the current practice especially regarding the absence of psychiatrist or addiction specialist in many of these centers and noncompliance with international guidelines. The high cost of treatment in private setups is also an area of concern which needs external auditing. In view of this, we have the following recommendations:

1. The authors feel that there is a dire need for the government and related parties to focus on this ever-growing issue of drug dependence and to invest in low-cost yet state-of –art centers following international guidelines.
2. There is also a need to conduct a country-wide audit of all the drug rehabilitation and treatment centers in Pakistan and to ascertain the lacking areas.
3. While Pakistan has a very limited number of psychiatrists, they can be incorporated as trainers and mentors and distant/close supervisors for such programs. Assistance may be taken from Psychiatrists practicing abroad. Conducting training sessions for the medical officers and psychologists regarding the international guidelines of drug detoxification as well as enabling them to learn the skills of communication and cultivating an environment of empathy and respect will go a long way.
4. Psychological support and Social services need to be more robust. This will not only help in acute detoxification in patients but also in integrating them back psychosocially as healthy individuals in the fabric of society.

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Revisiting Critically:	Muhammad Asif, Yusra Hanif Khan, Qurrat-ul-Ain Fatima
Final Approval of version:	Muhammad Asif

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Groin Flap; A Simple and Versatile Option for Coverage of Hand Defects

Imran Adeel[1], Ghazanfar Ali[2], Tahir Iqbal Mirza[3] and Muhammad Jalil Malik[3]

ABSTRACT

Objective: This study was conducted to share our experience of using groin flap for provision of soft tissue coverage to hand injuries.

Study Design: Descriptive Case Series study.

Place and Duration of Study: This study was conducted at the BVH Bahawalpur and CMH Bahawalpur from January 2014 to January 2020.

Materials and Methods: There are total 69 patients. Informed consent had been taken from all participants

Inclusion Criteria: Post-traumatic Upper limb defects of hand and forearm. Age 20 to 45 years. Patients who were vitally stable on admission and were presented after emergency optimization. Those patients who did not had any associated co-morbidity like diabetes mellitus, uncontrolled hypertension and smoking. Patients who gave consent for this operation and follow-ups

Exclusion Criteria: Upper limb defects of arm and proximal forearm; those cannot reach to groin comfortably. Age of more than 45 years. Unstable patients that require life/limb saving surgery first. Patients with co-morbidities like diabetes mellitus, uncontrolled hypertension and smoking. Patients not willing to participate.

Results: Out of total 69 patients 64(92.75%) were male and 5(7.25%) were female. The mean age was 21.34 years. The most common etiology was road traffic accidents, n=34(49.28%) followed by Household injuries, n=17(24.64%) Table I. The most common complication seen in our study was infection, 4(5.80%) Table II.

Conclusion: Groin Flap is a very versatile flap for coverage because of its supple skin and robust blood supply. However, the cost of donor site morbidity should be minimized for through proper planning and meticulous surgical technique.

Key Words: Groin Flap, Price to Pay, versatile.

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INTRODUCTION

The injuries of the upper limb are not uncommon in this industrial era. The anatomy of the hand is very complex and highly skilled functions are performed with hands and they pose unique challenges in reconstruction of the hand and upper limb injuries[1-3].

Like other wounds the main aim of the treatment is to achieve primary wound healing. the very basic requirements of the hand and upper limb injuries are; fixation of underlying fracture if any, repair of underlying structures, early supple soft tissue coverage, elevation and early exercises to avoid hand contractures[4-5].

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Keeping in view the components involved and size of the wound, occupation of the patient , hand dominance and resources available the most feasible option is chosen from the reconstructive ladder; Primary closure, skin grafting, local flap, regional flap or free tissue transfer. In developing country like ours, the facility of free tissue transfer is available in limited areas. For provision of supple soft tissue coverage, the pedicled flaps like reverse radial forearm flap Posterior Inter-osseous Artery (PIA) flap and Groin flap are the preferred choices[6-7-8-9].

The Groin flap is type Fascio-cutaneous flap based on superficial circumflex iliac artery[10]. Robust blood supply, supple skin, easy dissection and camouflage of the scar make this flap a favorable choice even in era of microsurgery and not letting it become out of fashion[11]. This study was conducted to share our experience of using groin flap for provision of soft tissue coverage for hand injuries.

MATERIALS AND METHODS

This study was carried out in BVH Bahawalpur and Combined Military hospital Bahawalpur from January 2014 to January 2020. In total 69 patients were enrolled for the study through sequential purposive sampling. All patients of hand or forearm treated with Groin Flap

for soft tissue coverage were included in the study. However, patients having Diabetes Mellitus, smoking and metastatic cancer were excluded from the study as these maladies are associated with high risk of complications.

The enrolled patients were counseled in detail about the nature of injury, procedure to be performed, hospital stay and follow up visits. They were also informed about the risk of anesthesia and possible adverse complications of the surgery and revision procedures required. The effect is analyzed and flap is marked after reverse planning. The description of the flap, surgical technique is well described in the literature. The flap is raised in subcutaneous plane and inset according to requirement and hand is fixed for three weeks. The patients were discharged on 2nd or 3rd day and the pedicle was divided after three weeks and flap was inset. The further modifications like flap thinning were carried out after 2weeks of the second surgery. The patients were finally assessed at three months and all data was recorded on a specially designed Performa. Age, gender, etiology of injury, components involved and size of the defect, complications and number of revision procedures were the variables of the study. SPSS Ver24 was used to analyze and interpret the data.

RESULTS

Out of total 69 patients 64(92.75%) were male and 5(7.25%) were female. The mean age was 21.34 years. The most common etiology was road traffic accidents, n=34(49.28%) followed by Household injuries, n=17(24.64%) Table I. The most common complication seen in our study was infection, 4(5.80%) Table 2.

Table No.1: Etiology

Sr no	Etiology	n
1	Road Traffic Accident	34(49.28%)
2	Household Injuries	17(24.64%)
3	Industrial Accidents	9(13.04%)
4	Electric Current injuries	5(7.25%)
5	Hand Infections	2(2.90%)
6	Tumors of Hand	1(1.45%)
7	Human Bite	1(1.45%)

Table No.2: Complications

Sr no	Complications	n
1	Partial Flap Loss	1(1.45%)
2	Complete Flap Loss	nil
3	Infection	4(5.80%)
4	Hypertrophic scarring at Groin	1(1.45%)
5	Shoulder Stiffness	3(4.35%)
6	Hand Stiffness	2(2.90%)

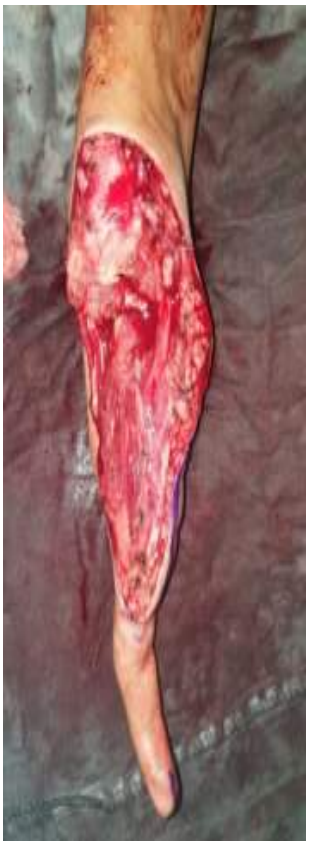

Figure No.1:

Figure No.2:

Figure No.3:

DISCUSSION

The groin flap was first described by McGregor and Jackson[12]in 1972 and it is has become a milestone in history of plastic and reconstructive surgery for provision of supple soft tissue coverage for a range of

defects in upper limb injuries.It became workhorse flap after that. It can be modified to provide tailor made solutions for complex wounds.

Figure No.4:

Figure No.5:

Figure No.6:

Figure No.7:

Figure No.8:

Figure No.9:

The use Free tissue transfer in 1970[13-14]has revolutionized the field of reconstruction. It offers single stage solution for reconstruction of complex defects anywhere in the body.However, it is technically demanding, time consuming and require specialized training and equipment. Furthermore, it may be contra-indicated in patients with history of smoking, diabetes Mellitus or vascular disease. All these constraints do not let pedicled flap become obsolete and out of fashion. The pedicled flap like Groin flap can be used in these circumstances.

The groin flap[10]has supple skin and robust blood supply. The scar can be camouflaged with under garments. The main disadvantages of the groin flap are; multistage procedure, hand in dependent position can worsen the edema and stiffness.However, excellent outcome results of this workhorse flap overshadow these disadvantages[15].

In our study the majority of the patients were male 64(92.75%). The same pattern is seen in other studies. Jabaiti S, Ahmad M, AlRyalat SA[9]conducted a study for reconstruction of upper limb defects using pedicled abdominal flaps (Groin Flap) and reported that there were 91.2% male patients and 8.8% female patients. In their study the mean age was 22.2years while in our study it was 21.34 years.

The main etiology in our study was road traffic accidents followed by industrial accidents (Table I). Choudry UH, Moran SL and Li S et al [16]conducted a study on soft tissue coverage of elbow and reported 47% patients were secondary to trauma. Other main causes in their study were tumors (16%), infection (13%) and burn (6%).

The groin Flap is bulky in obese patients and some reconstructive surgeons have reported the use of thin flap for soft tissue coverage of injured tissues. Yamada N, Ui K, Uchinuma E[17]reported a case series using thin groin flap with very satisfactory results. These modifications are helpful for the patients having excessive subcutaneous fat but can jeopardize the flap survival. The risk of compromising the vascularity of the flap should be kept in mind while de-fating it.

Keeping hand in dependent and fixed position can be inconvenient for the patient and it can lead to stiffness of the hand and other joints of the upper limb specialty shoulder[18]. Moreover, it can worsen the edema of the injured hand. However, it is well tolerated by most of the patients if they are properly counseled about the benefits of this robust flap and its usefulness in provision of supple skin coverage[19]. Stiffness of the shoulder and hand can be problematic in elder people or patients having comorbid like diabetes mellitus etc. in a conducted by Graf and Beemer[20]on this topic reported stiffness of the shoulder joint in 17% patients above 50 years of age bracket while Jabaiti S, Ahmad M, AlRyalat SA[9] reported shoulder stiffness only in 2.94% patients of same age group. This diversity reflects wide variation among the patients and study centers.

Flap necrosis is a nightmare for every reconstructive surgeon. It can increase the financial cost, delayed return to work and additional procedures. Every effort is made for flap survival and better outcome. Fortunately there was no complete flap necrosis in any patient in our study. Partial flap was noted in 1(1.45%) patients. Wang et al[21]reported partial flap loss in one patient (11.11%) while Urushidate et al[22] reported zero flap loss in their study. These variations can be due different sample size and different level of surgical expertise and overall health care facility. This flap remains an important tool in armamentarium of plastic and reconstructive surgeon even in era of microsurgery. Although a lot of studies have been carried out on this topic but there is always a room for improvement.

CONCLUSION

Groin Flap is a very versatile flap for coverage because of its supple skin and robust blood supply. However, the cost of donor site morbidity should be minimized for through proper planning and meticulous surgical technique.

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Comparison of the Outcome of Electric Vacuum Aspiration and Conventional Dilatation and Curettage in First Trimester Miscarriages

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ABSTRACT

Objective: To compare the outcome of electric vacuum aspiration and evacuation of retained products of conception in 1st trimester miscarriages.

Study Design: Randomized Controlled Trial study.

Place and Duration of Study: This study was conducted at the Department of Obstetrics & Gynecology, Shahida Islam Teaching Hospital Lodhran from January 2019 to December 2020.

Materials and Methods: A total of 108patients with 1st trimester miscarriages, 18 to 40 years of age were included. Patients with signs of septic abortion, ectopic pregnancy, CRF, CLD and any bleeding disorders were excluded. Group 'A' patients underwent electric vacuum aspiration (EVA) while group 'B' patients underwent dilatation and curettage (DNC). Outcome variables like blood loss, hospital stay, uterine perforation and incomplete evacuation were noted.

Results: The mean age of women in group A was 28.52 ± 4.76 years and in group B was 29.08 ± 5.83 years. Gestational age was from <12 weeks with mean gestational age of 6.93 ± 2.61 weeks. In this study, mean blood loss was seen in EVA as 68.72 ± 11.28 ml and 83.85 ± 8.94 ml in DNC with p-value of 0.0001. Also hospital stay was seen in EVA as 24.92 ± 3.62 hours and 38.23 ± 5.73 hours in DNC with p-value of 0.0001. Incomplete evacuation was found in DNC group as 00 (0.0%) and in MVA group as 02 (1.85%) with p-value of 0.155. The uterine perforation was seen in 06 (11.11%) patients of DNC group and 2 (3.70%) patients of EVA group with p-value of 0.038.

Conclusion: This study concluded that electric vacuum aspiration (EVA) is effective and safe procedure as compared to conventional DNC in 1st trimester miscarriages.

Key Words: 1st trimester miscarriages, blood loss, electric vacuum aspiration. Dilatation and curettage, uterine perforation.

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INTRODUCTION

Maximum number of pregnancy losses occurs in early first trimester. On average every fourth women experiences a pregnancy loss in first trimester in her life time.[1] According to research data, the rate of pregnancy losses 29/1000live births in women between ages 15-49 15-49 years.[2]when determining the cause of first trimester miscarriage, missed miscarriage and incomplete miscarriage are the commonest[3]. The exact incidence and prevalence of miscarriages cannot be estimated as most of the women loss in early pregnancy without even knowing it.[4]Assome women with bleeding in early pregnancy may not seek medical advice assuming the bleeding as their menses.[4]

Termination of pregnancy can be done by both surgical and medical methods. Gestational age is the most important factor in choosing the appropriate method. Medical approach is easy, noninvasive, and inexpensive but may end up in surgical evacuation and success is not always guaranteed. Surgical evacuation can be done by different methods including manual vacuum aspiration (MVA) or electric vacuum aspiration (EVA), dilatation and curettage (DNC).[7] Vacuum aspiration is superior to all other methods in terms of safety, success and less complications yet dilatation and sharp curettage had been largely used method for uterine evacuation in developing world including Pakistan.

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Local Hospital protocols of hospital admission and treatment should be based on local infrastructure, personal and practical limitations, availability of instruments and machinery patient preferences and, clinical efficacy of a surgical method.[5] After abortion care of the women has been revolves around the harm reduction approach to maternal mortality and morbidity since early 1990,s.[6]

Lack of appropriate training and literature that compares MVA with sharp curettage concerns the use of this method in Pakistan.[8] Incomplete evacuation in DNC group was found to be 20% and in MVA group as 8%.[9] Amongst complications uterine perforation was found to be 10% in DNC group and 2% in MVA group.[9] In another study, mean blood loss in MVA was 74.3±60.1 ml and 104.2±104.1 ml in DNC. Also hospital stay in MVA was 35.9±13.1 hours and 45.9±19.0 hours in DNC.[10]

DNC is a routine daily procedure in gynaecology departments of our hospitals. International literature shows that vacuum aspiration is more effective and safer in 1st trimester miscarriage. Manual vacuum aspiration is mostly studied and electric vacuum aspiration was not given much attention. So we decided to conduct a randomized clinical trial in our population in our Hospital Settings to compare the outcome of EVA and DNC in 1st trimester miscarriages. This study will not only provide the local statistics but will also provide our population a more effective and safe method in first trimester abortions. Then based on the results, the method with better outcome would be adopted routinely in our practices for reducing the maternal morbidity and mortality.

MATERIALS AND METHODS

This study was conducted in Department of Obstetrics &Gynecology, Shahida Islam Teaching Hospital Lodhran from January 2019 to December 2020.All patients between ages 18-40 years with 1st trimester miscarriage less than 12 weeks as assessed on LMP and presence of these Sonographic features like an abnormal-looking large and irregular yolk sac it may be floating freely, or calcified and increased echogenicity in placenta and sub-chorionic hematoma (hyper-echoic). However the patients with signs of septic miscarriage (fever >37.7 ºC, purulent vaginal discharge, tachycardia or abdominal distention) were excluded. Ectopic pregnancy, any history of bleeding disorder, hemodynamic instability, chronic liver disease (serum bilirubin >1.0 mg/dl), chronic kidney disease (serum creatinine >1.3 mg/dl) were also excluded.

Data Collection Procedure: After taking permission from ethical review committee of Shahida Islam Medical Complex Lodhran, 108 patients fulfilling the inclusion criteria were selected. After taking informed written consent, all selected cases were randomly divided into two groups by picking one from 108 slips half of them having group “A” on them and half having group “B” on them. Group “A” patients had electric vacuum aspiration (EVA) while group “B” patients had dilatation and curettage (DNC). All procedures were performed by the three surgeons (with at least 3 years of post-fellowship experience). Outcome variables like hospital stay, blood loss, uterine perforation and incomplete procedures were noted. This all data was recorded on a specially designed Performa.

Statistical Analysis: All the data was entered and analyzed by using SPSS version 20.0. Mean and standard deviation were calculated for age, gestational age, parity, hospital stay and blood loss. Frequency and percentage were calculated for incomplete evacuation (yes/no) and uterine perforation (yes/no). Independent ‘T’ test was used to study the hospital stay and blood loss of both groups and chi square was applied to compare the incomplete evacuation and perforation. P-value $\leq$ 0.05 was considered as significant. Effect modifiers like age, gestational age and parity were controlled through stratification and post-stratification Independent ‘T’ test was used to see their effect on outcome and chi square was used to see their effect on outcome. P-value $\leq$ 0.05 was considered as significant..

RESULTS

The mean age of women in group A was 28.52 ± 4.76 years and in group B was 29.08 ± 5.83 years. Gestational age was from <12 weeks with mean gestational age of 6.93 ± 2.61 weeks.

Mean blood loss was seen in EVA as 68.72 ± 11.28 ml and 83.85 ± 8.94 ml in DNC with p-value of 0.0001. Also hospital stay was seen in EVA as 24.92 ± 3.62 hours and 38.23 ± 5.73 hours in DNC with p-value of 0.0001 (table l).

Incomplete evacuation was found in DNC group as 00 (0.0%) and in EVA group as 02 (1.85%) with p-value of 0.155. The uterine perforation was seen in 06 (11.11%) patients of DNC group and 2 (3.70%) patients of EVA group with p-value of 0.038 (table ll).

Table No.1: Comparison of mean hospital stayand blood loss in patients of electric vacuum aspiration and dilatation and curettage in 1st trimester miscarriages

Outcome	Group A (n=54)	Group B (n=54)	p-value
	Mean ± SD	Mean ± SD	
Blood loss (ml)	68.72 ± 11.28	83.85 ± 8.94	0.0001
Hospital stay (hours)	24.92 ± 3.62	38.23 ± 5.73	0.0001

Table No.2: Comparison of outcome (in terms of incomplete evacuation and uterine perforation) of electric vacuum aspiration and dilatation and curettage in 1st trimester miscarriages.

Outcome	Group A (n=54)		Group B (n=54)		p-value
	Yes	No	Yes	No	
Incomplete evacuation	01(1.85%)	53(98.15%)	00(0.00%)	54(100.0%)	0.155
Uterine perforation	02 (3.70%)	52(96.30%)	6(11.11%)	48(88.89%)	0.038

DISCUSSION

Early pregnancy loss is a major health problem as 15-20% pregnancies end in early miscarriage. According to the WHO report (2003) estimated miscarriage number worldwide is 46million per year and out of it 20 million are unsafe. Around 67,000 mothers die due to unsafe abortions per year and thousands suffer morbidity due to sepsis and organ injuries. Abortion related maternal death is a major health problem in Pakistan and also a leading cause of maternal morbidity and mortality.

But with the development of better health care and new techniques maternal deaths due to unsafe abortions have declined in past few years.[12]The treatment options for first trimester miscarriages include expectant management, medical termination with misoprostol and surgical evacuation. When medical termination is failed or not recommended, there are two surgical options first is evacuation and curettage and other is suction evacuation either manually or electric vacuum evacuation. As Asherman's syndrome can occur after sharp uterine curettage, the WHO discourages the use of sharp curettage (DNC) for first trimester miscarriages, therefore, suction remains the safe option.[13]Conventional surgical management i.e. dilatation and curettage commonly known as DNC requires a trained personnel, anesthesia, operation room and some-times blood transfusion. Even in hands of best surgeons, complications for example hemorrhage, incomplete evacuation, uterine perforation and infection can occur. The preferred methods of abortion up to 12 completed weeks by World Health Organization are vacuum aspiration, or medical methods which had been shown effectiveness up to 9 completed weeks. Dilatation and curettage should be the option where none of the above methods are available or these methods have failed. Vacuum aspiration was associated with less pain, shorter duration of procedure, decreased blood loss, and reducing health care cost when compared with those of sharp curettage. Successful rate for complete evacuation of conceptive products by vacuum aspiration was 95-100%. Other advantages of this method are the acceptability of doctors and, the satisfaction of the patients.[13] MVA is compared by many researchers with the DNC but EVA has not been much under research.

So we have conducted this study to compare the outcome of EVA and DNC in 1st trimester miscarriages. When compared efficiency, frequency of complications, duration of the procedure, and duration of hospitalization among patients undergoing EVA and DNC for incomplete miscarriage. Duration of the procedure, hospitalization and decrease in hemoglobin level were significantly shorter in the EVA group.

Another study results show that all the DNC procedures were performed under general anesthesia whereas para-cervical block was administered with and/or without analgesia in MVA and EVA.[13]The probability of complication during DNC is more likely than MVA or EVA as it involves a sharp curette resulting in and bleeding; secondly, general anesthesia itself has its own complications and contraindications. In developing countries with limited resources, expertise and lack of appropriately trained birth attendants, conventional DNC or MVA is an inexpensive, better and safe option when compared to EVA.[14,15]Failure to perform EVA in emergency situation with incomplete miscarriage was shortcoming of this study, most probably because of non-availability of instrument and surgeon's expertise.[14,16,17]The use and adaptation of EVA over conventional DNC by gynecologists is affected by personal and professional factors that can be overcome by practice and training.[18,19]

CONCLUSION

This study was concluded that electric vacuum aspiration (EVA) is effective and safe procedure as compared to DNC in 1st trimester miscarriages. So, our recommendation is that electric vacuum aspiration should be offered as a first line surgical method for the women with 1st trimester pregnancy loss to reduce blood loss, hospital stay, operative time and eventually maternal morbidity and mortality.

Author's Contribution:

Concept & Design of Study:	Joveria Sadaf
Drafting:	Abroo Shahnaz, Asia Aziz
Data Analysis:	Sana Ara and Aslam Mahmood Malik
Revisiting Critically:	Joveria Sadaf, Abroo Shahnaz
Final Approval of version:	Joveria Sadaf

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Incidence of Ovarian Cysts in Patients Taking Ovulation Induction with Clomiphene Citrate

Frequency of Ovarian Cyst in Patients of Induced Ovulation

Abroo Shahnaz[1], Joveria Sadaf[1], Asia Aziz[2], Tanzila Rafiq[1] and Aslam Mahmood Malik[1]

ABSTRACT

Objective: To determine the frequency of ovarian cyst in patients of induced ovulation.
Study Design: Descriptive study
Place and Duration of Study: This study was conducted at the Department of Obstetrics & Gynecology, Shahida Islam Teaching Hospital Lodhran from September 2019 to August 2020.
Materials and Methods: A total of 214 patients with infertility planned for ovulation induction, 20-35 years of age were included. Patients with preexisting ovarian cyst were excluded. To all patients clomiphene citrate 50 mg was given from day 2 to day 6 of menstrual cycle. Serum progesterone levels were done on day 21 of cycle. If progesterone levels were > 30ng/dl then same dose of clomiphene citrate was given in next cycle. If day 21 progesterone levels were < 30 ng/dl then 100 mg of clomiphene citrate was given in 2nd cycle. In this cycle serum progesterone levels were done on day 21 and day 24. If progesterone levels were < 30 ng/dl then increments in the dose was made to a maximum dose of 150 mg per day in 3rd cycle. As part of protocol, in every patient trans-vaginal ultrasound was repeated before prescribing clomiphene citrate.
Follicular tracking was added for monitoring of ovulation. After 3rd cycle pelvic ultrasound was done to diagnose any ovarian cyst.
Results: Age range in this study was from 20 to 35 years with mean age of 29.27 ± 2.34 years. Majority of the patients 132 (61.68%) were between 20 to 30 years of age. Mean duration of infertility was 3.81 ± 1.63 years. Mean BMI was 28.53 ± 2.59 kg/m2. Mean dose of clomiphene citrate was 84.63 ± 21.63 mg. Frequency of ovarian cyst in patients of induced ovulation was found in 22 (10.28%) patients.
Conclusion: This study concluded that frequency of ovarian cyst in patients of induced ovulation is quite high.
Keywords: infertility, ovulation induction, ovarian cyst. Clomiphene citrate

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INTRODUCTION

Ovarian cysts are commonly found among women all over the world. Women having ovarian cysts may need hospitalization and even the need for surgery. It has been seen that 5 to 10 % women will need surgical removal of adnexal mass. In the United States, Annually more than 250,000 women had diagnosis of ovarian cyst at the time of hospital discharge.[1] Ovarian cysts are divided into two main types, physiological and pathological. Most of the ovarian cysts found in women of reproductive age are physiological in nature.

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Among them, the most common type in reproductive age is functional cysts, which in rare cases enlarge up-to 8cm or more. They resolve themselves within 4 to 8 weeks. Follicular cysts are formed when mature follicle fail to rupture and keep on increasing in size. Other type of functional ovarian cyst, a corpus luteal cyst is formed when after ovulation the corpus luteum does not regress.[2]Pathological tumors are further divided into benign, malignant and borderline tumors. The risk of malignant tumor is increased with ageing. Ovarian cysts are commonly asymptomatic and likely to resolve themselves in premenopausal women, while in postmenopausal women; ovarian cysts lead to the symptoms of pain or pressure and may need surgical removal.

Mostly ovarian cysts are asymptomatic especially when they are smaller in size. But as the size grows symptoms appear that may be abdominal or pelvic pain or discomfort, increased urinary frequency, dysmenorrhea dyspareunia, nausea vomitingor bloating sensation and feeling of fullness or heaviness.[3.4]

The risk factors found for the formation of ovarian cysts are the drugs used in women with sub fertility, tamoxifen use in breast cancer patients, and

hypothyroidism, pregnancy, cigarette smokers and female sterilization. Though the other ovulatory drugs like Aromatase inhibitors, selective estrogen modulators and gonadotrophins are easily available, clomiphene citrate is considered as a first line therapy for ovulation induction in women with sub fertility. Women having ovulation induction may develop the ovarian cyst and several hypotheses have been proposed regarding ovarian cyst formation and its progression. The first hypotheses is Fathalla s tear - and –repair hypothesis states that damage occurred to the ovarian surface due to ovulatory drugs leads to multiple proliferation of the ovarian surface epithelium and DNA replication resulting in the formation of ovarian cyst[6,7]. A second hypothesis describes the formation of ovarian cysts due to overgrowth of the surface epithelium and the lack in apoptosis of damaged cells mainly caused by gonadotrophins.[8] Third hypothesis is linked to the inflammatory drugs released after induced ovulation, resulting in cellular proliferation and replication errors due to DNA damage. Another search did by Anwar A and his collaborators have shown the formation of ovarian cysts in 10 % of patients who took ovulation induction,[9] while Coskmay JM and his team found the incidence of ovarian cysts of about 36.7% in patients with ovulation induction.[10]

There is lack of evidence in present research data about this topic. Some studies have been conducted locally but the power of study is not that strong due to smaller sample size[9] so we decided to research this topic with 214 patients to increase the strength of evidence. My study results will pave the way for future researchers to plan more research in this topic to get more evidence in our local population.

MATERIALS AND METHODS

Descriptive, case series study done in department of Obstetrics & Gynecology, Shahida Islam Teaching Hospital, Lodhran from September 2019 to August 2020

Sample Technique: Non-probability, consecutive sampling

Sample Selection: All women age 20-35 years presented with Infertility in Shahida Islam Teaching Hospital OPD for whom ovulation induction was planned were included in the study. Patients with pre-existing ovarian cyst on ultrasound and patients who had conception during study period on pregnancy test in laboratory were excluded from the study.

Data Collection Procedure: Total 214 patients fulfilling the inclusion and exclusion criteria were included in the study after permission from ethical committee and research department of Shahida Islam Teaching Hospital, Lodhran. Base line demographic information of patients (age, weight, infertility duration) was taken. Informed consent was taken from each patient, ensuring confidentiality and fact that there is no risk involved to the patient while taking part in this study and the expenses of serum progesterone test would be borne by the researches. To all patients' initially, clomiphene citrate 50 mg was given from day 2 to day 6 of menstrual cycle. Serum progesterone levels were done on day 21 of cycle. If progesterone levels were > 30ng/dl, then same dose of clomiphene citrate was given in next cycle. If day 21 progesterone levels were < 30 ng/dl, then 100 mg of clomiphene citrate was given in 2nd cycle. In this cycle serum progesterone levels were done on day 21 and day 24. If progesterone levels were < 30 ng/dl, then increments in the dose was made to a maximum dose of 150 mg per day in 3rd cycle. As part of protocol, in every patient trans-vaginal ultrasound was repeated before prescribing clomiphene citrate. Follicular tracking was added for monitoring of ovulation. After 3rd cycle pelvic ultrasound was done to diagnose any ovarian cyst as per operational definition. All ultrasounds were done by a consultant gynecologist of 3-year post fellowship experience. Data regarding ovarian cyst was noted on especially designed proforma.

Statistical Analysis: Data was analyzed with statistical analysis program SPSS version 20. Frequency and percentage were computed for qualitative variables like age groups and ovarian cyst. Mean ±SD were presented for quantitative variables like age, duration of infertility, dose of clomiphene citrate and BMI. Effect modifiers like age, duration of infertility, dose of clomiphene citrate and BMI were controlled by stratification. Post stratification chi square test was applied $p \leq 0.05$ was considered statistically significant**.**

RESULTS

Age range in this study was from 20 to 35 years with mean age of 29.27 ±2.34 years. Majority of the patients 132 (61.68%) were between 20 to 30 years of age as shown in Table I. Mean duration of infertility was 3.81 ± 1.63 years.

Table No.1: Distribution of patients according to age, BMI and dose of clomiphene citrate (n=214)

variable		No of patients	%age	Mean ±SD
Age in years	20-30	132	61.68	29.27±2.34years
	31-35	82	38.32	
BMI (kg/m^2)	≤27	73	34.11	= 28.53 ± 2.59 kg/m2
	>27	141	65.89	
Dose of clomiphene	50 mg	41	19.16	103.73±23.32mg
	100 mg	116	54.21	
	150 mg	57	26.63	

Frequency of ovarian cyst in patients of induced ovulation was 22 (10.28%) patients.

When stratification of ovarian cyst was done on age groups, it was evident that there was significant difference between different age groups as shown in Table II while the stratification of ovarian cyst with respect to duration of infertility which showed no significant difference between different groups. Stratification of ovarian cyst with respect to BMI and dose of clomiphene citrate is also shown in Table lI.

Table No.2: stratification of ovarian cysts with age of the patients their BMI and dose of clomiphene citrate

variable		Ovarian cysts		P value
		yes	no	
Age in years	20-30	07	125	0.006
	31-35	15	67	
Duration of infertility	≤3years	08	109	0.069
	>3years	14	83	
BMI (kg/m^2)	≤27	11	62	0.097
	>27	11	130	
Dose of clomiphene	50 mg	03	38	0.778
	100 mg	13	103	
	150 mg	06	51	

DISCUSSION

Ovarian cysts are defined as fluid filled sacs that could be simple or complex, unilateral or bilateral. These cysts are found either on physical examination or on ultrasonography.[11] Almost 20% of women develop at least one pelvic mass at some point of their life. Women of reproductive age usually experience the formation of physiological cyst due to release of endogenous hormones. In patients who are taking ovulation induction, simple, smooth, thin walled, unilocular cysts commonly develop due to unruptured follicle as the number of developing follicle has increased now with the use of induction. Follicular cysts are usually larger than 2.5cm but very less often they enlarge >8cm. Corpus luteal cysts are formed due to persistence of corpus luteum after 14 days (average life span of corpus luteum). Corpus luteal cysts may be simple or complex and are thick walled with an average size about 3cm or more and they are exclusively found in pregnancy until the end of first trimester and then resolvethemself.[12.13]SO,the management of these functional cysts is expectant especially in women who are trying to be pregnant. Though combined oral contraceptive pills can decrease its incidence by inhibiting ovulation but it is not recommended as a treatment of ovarian cyst.[14]The formation of ovarian cyst is not specific to the patient or her menstrual cycle, Even there is no specific evidence regarding its stimulus which may be central, in the hypothalamus or pituitary or peripheral in the adrenal gland or the ovary. There are limited studies regarding the incidence of functional cysts but two studies were conducted separately by doing an ultrasound of a large sample of asymptomatic women which showed an incidence of about 6.6%.Some other studies showed that of formation of ovarian cysts is related to the BMI, the onset of menarche, and the pattern of female menstrual cyscle.[15,16,17] Although other ovulatory drugs are widely available but clomiphene citrate is used preferably as a drug of choice initially. But there is a controversy regarding the use of CC in females who already have functional ovarian cysts.

We have conducted this study in 214 cases attending theoutpatient department to see the frequency of ovarian cysts in women who took ovulation induction. Age group included in my study was between 20-35 years with a mean age of 29.27+2.34 years. More than half of the patients 132 (61.68%) included the age group of 20 -30 years. Our study demonstrated the development of ovarian cysts in 22 patients making the incidence of 10.28%. Another study conducted by Anwar A and his researchers showed incidence of 10 % in women having ovulation induction.[9] Study conducted by Csokmay JM and his team found the frequency of ovarian cysts in 36.7%of the females who used ovulatory drugs.[10] The cut-off value defined for the size of an ovarian cyst used in both studies was 10mm though the previous literature marked the follicle to be cystic if it is larger than 3cm because cystic follicle size of 10 mm is difficult to differentiate from follicle and follow-up has no such benefit. Even with this small size of cyst, it is hard to define the nature and blood flow on Doppler ultrasound. The first study found the incidence of basal ovarian cyst of >10mm in almost 5 patients (17.5%) and it was conducted retrospectively.[11,18,19] While the other study concluded the mean ovarian size of 17.4±5.8mm. Ovulation rate found in patients with ovarian cyst was >80% while the women without ovarian cysts have a higher ovulation rate of 97.6%. Even the comparison of pregnancy rate showed a difference (4.8% versus 11.9% $p<0.4$). The persistence of ovarian cysts was found in36.7% patients. The common thing between these studies and my study was that the initial size of the cyst was not used as a predictive indicator for the persistence of cyst.[20,21]

Though we couldn't find any malignant potential in ovarian cysts, but simple functional ovarian cysts were found by repetitive proliferation of ovaries, induced by clomiphene citrate commonly in overweight women with late reproductive age, and having prolonged subfertility. As a result, we should be more vigilant before starting the infertility treatment and ovulation induction in these high risk cases, increasing the need for frequent trans-vaginal ultrasound, pre-treatment as

well as on follow ups after taking ovulation induction with CLOMIPHENE CITRATE.

CONCLUSION

This study concluded that frequency of ovarian cyst in patients of induced ovulation is quite high. So, we recommend that in every women taking ovulation induction, ovarian cyst should be taken into consideration so that the early recognition and management should be initiated to decrease the morbidity of the community.

Author's Contribution:

Concept & Design of Study:	Joveria Sadaf
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Data Analysis:	Tanzila Rafiq, Aslam Mahmood Malik
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Assessment of Hypertension and its Associated Factors among Type 2 Diabetes Mellitus Patients at Mirpur AJK

Muhammad Shoaib[1], Muhammad Kamran[1], Sameer Hanif[2] and Asnad[3]

ABSTRACT

Objective: The objective of this study assessment of hypertension and its Associated Factors among Type 2 Diabetes Mellitus Patients at Mirpur AJK.

Study Design: Cross-sectional study

Place and Duration of Study: This study was conducted at the Department Physiology, Biochemistry and Community Medicine of Mohtarma Benazir Bhutto Shaheed Medical College Mirpur, AJK from April 2018 to August 2019.

Materials and Methods: In this study we included those patients who have diabetes mellitus and hypertension. It was cross section study, we selected 200 control normal subject free from hypertension and diabetes mellitus and 300 patients of diabetes mellitus with hypertension. We were taken the blood sample of patients and control. We centrifuge the sample and analyzed for fasting blood sugar and lipid profile (LDL, HDL, Cholesterol, TG). We also estimate urea, uric acid for both groups.

Results: The BMI of the patients was higher than 25 kg/m^2 and above (78.5%). and the mean systolic and diastolic blood pressure of T2DM patients were 135.8 mmHg (SD ± 25.9) and 87.5 mmHg (SD± 13.8) respectively. The lipid profile was higher in patients group as compare to control. Fasting glucose was higher in patients groups as compare to control. 78.5%) patients relied on oral hypoglycemic treatment in patients groups.

Conclusion: The occurrence of hypertension was high. Only 27.8% of previously diagnosed hypertensive patients were normotensive. Age, BMI, and high lipid profile, cigarette smoking, residence and duration of T2DM were significantly associated with hypertension.

Key Words: Hypertension, Diabetes mellitus, Risk factors

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INTRODUCTION

Stroke is closely related with Type 2 diabetes mellitus is closely linked renal disease and hypertension. Morbidity and mortality among T2DM patients is due to Hypertension [1-3] Hypertension and diabetes mellitus is improved internationally[4,] Risk of mortality in developing countries, 7.2 times higher regarding death as compare other countries of the world.[5, 6] Retinopathy, nephropathy, neuropathy and atherosclerotic are produced with hypertension and also developed diabetes complication.[7]

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Brain, heart, eye, and kidney are main effected organs of cardiovascular mortality and morbidity. Heart attack, peripheral arterial disease, stroke, kidney failure, sexual dysfunction and vision loss are caused due to uncontrolled hypertension.[8] Proteinuria is produced with organ damage due to Hypertension.[9] Left ventricular strain pattern in ECG is affected and hypertrophy of left ventricular.[10] Appearances of hypertension induced end organ damage are hemorrhagic brain or ischaemicin brain imaging by computed tomography.[11,12] Hypertension and stroke with diabetes patients caused eighty present death.[13,14] Hypertension quickens the development of diabetic renal disease and CVD.[15] The objective of this study assessment of hypertension and its Associated Factors among Type 2 Diabetes Mellitus Patients at Mirpur AJK.

MATERIALS AND METHODS

This study was conducted in the Department Physiology, Biochemistry and Community Medicine of Mohtarma Benazir Bhutto Shaheed Medical College Mirpur AJK, Mirpur, AJK from April 2018 to August 2019. In this study we included those patients

who have diabetes mellitus and hypertension. It was cross section study, we selected 200 control normal subject free from hypertension and diabetes mellitus and 300 patients of diabetes mellitus with hypertension. We were taken the blood sample of patients and control. We centrifuge the sample and analyzed for fasting blood sugar and lipid profile (LDL, HDL, Cholesterol, TG). We also estimate urea, uric acid for both groups. We micro Lab 300 for chemical pathology and Merk kits are used for analysis. SPSS for Windows version 20 was employed for all statistical analyses.

RESULTS

It was cross section study; we selected 200 control normal subjects free from hypertension and diabetes mellitus and 300 patients of diabetes mellitus with hypertension. Age was 45 to 55 year. The BMI of the patients was higher than 25 kg/m^2 and above (78.5%).

Table No.1: Participant characteristics

	Hypertension With Diabetes mellitus (n=300)	Control (n=200)
Age (years)	45.4 ± 10.2	45.7 ± 10.3
Male/Female(%)	100/100	50/50
Body weight(Kg)	69.9 ± 10.8	68.3 ± 11.2
BMI (kg/m2)	26.8± 3.6	23.2± 2.5

Table No.2: Ambulatory blood pressure monitoring. Mean values of blood pressure

Hypertension With Diabetes mellitus (n=300)	Control (n=200)
Systolic BP - 24 hours (mmHg)	
135.8 ± 25.9	135.4 ± 8.3
Diastolic BP - 24 hours (mmHg)	
87.5 ± 13.8	85. 7± 6.6

Table No.3: Fasting sugar and Lipid profile in patients and control

Hypertension With Diabetes mellitus (n=300)	Control (n=200)
Fasting Blood Glucose(mg/dl)	
138.8 ± 4.3	97.4 ± 4.9
Total Cholesterol (mg/dl)	
246.5 ± 12.8	193.6 ± 30.5
LDL (mg\dl)	
126.8 ± 22.5	117.5± 18.5
HDL (mg\dl)	
58.7± 8.5	41.5 ± 9.2
Triglycerides (mg\dl)	
178.2 ± 32.5	142.3 ± 31.2

and the mean systolic and diastolic blood pressure of T2DM patients were 135.8 mmHg (SD ± 25.9) and 87.5 mmHg (SD± 13.8) respectively. The lipid profile was higher in patients group as compare to control. Fasting glucose was higher in patients groups as compare to control. 78.5%) patients relied on oral hypoglycemic treatment in patients groups.

Table No.4: The Effects of Diabetes Mellitus with hypertension on Hearing

Hypertension With Diabetes mellitus (n=300)	Control (n=200)
Sensori- neural hearing	
83.72%	6.45%
Two sided hearing problem with SNHL	
80.09%	2.8%
Hearing Difficulty	
72.81%	0.9%

DISCUSSION

This study about pathology and associated factors of hypertension among T2DM patients at Mirpur AJK. The prevalence of hypertension in this study was 59.5% which is in line with studies in Hosanna (55)[16]Adama, Ethiopia (56.3%). The prevalence reported is higher than Ethiopia (46.5%).[17] the presence of age difference between the two study populations may affected study result. Stroke is closely related with Type 2 diabetes mellitus is closely linked renal disease and hypertension. This study was conducted in the Department Physiology, Biochemistry and Community Medicine of Mohtarma Benazir Bhutto Shaheed Medical College Mirpur AJK, Mirpur, AJK from April 2018 to August 2019. In this study we included those patients who have diabetes mellitus and hypertension. It was cross section study, we selected 200 control normal subject free from hypertension and diabetes mellitus and 300 patients of diabetes mellitus with hypertension. We were taken the blood sample of patients and control. We centrifuge the sample and analyzed for fasting blood sugar and lipid profile (LDL, HDL, Cholesterol, TG). We also estimate urea, uric acid for both groups. We micro Lab 300 for chemical pathology and Merk kits are used for analysis. Morbidity and mortality among T2DM patients is due to Hypertension. Hypertension and diabetes mellitus is improved internationally. Risk of mortality in developing countries, 7.2 times higher regarding death as compare other countries of the world. Retinopathy, nephropathy, neuropathy and atherosclerotic are produced with hypertension and also developed diabetes complication. Brain, heart, eye, and kidney are main effected organs of cardiovascular mortality and

morbidity. Heart attack, peripheral arterial disease, stroke, kidney failure, sexual dysfunction and vision loss are caused due to uncontrolled hypertension. Proteinuria is produced with organ damage due to Hypertension. Left ventricular strain pattern in ECG is affected and hypertrophy of left ventricular. Appearances of hypertension induced end organ damage are hemorrhagic brain or ischaemic in brain imaging by computed tomography. Hypertension and stroke with diabetes patients caused eighty present death.[13,14] Hypertension quickens the development of diabetic renal disease and CVD.Higher prevalence of hypertension is associated with age increased .[18] It was cross section study, we selected 200 control normal subject free from hypertension and diabetes mellitus and 300 patients of diabetes mellitus with hypertension. Age was 45 to 55 year. The BMI of the patients was higher than 25 kg/m^2 and above (78.5%). and the mean systolic and diastolic blood pressure of T2DM patients were 135.8 mmHg (SD ± 25.9) and 87.5 mmHg (SD± 13.8) respectively. The lipid profile was higher in patients group as compare to control. Fasting glucose was higher in patients groups as compare to control. 78.5%) patients relied on oral hypoglycemic treatment in patients groups. One reason of the hypertension is higher BMI , it means that higher the BMI more suspected hypertension risk factor.[19-22] When nitric oxide is decreased which act as vasodilators and thickening of the intima compromises endothelium integrity which is caused by aging.[23] The normal blood flow is interrupts by Hardening of the arterial walls and facilitate deposition calcium and fatty on the inside of the arteries to narrow that caused hypertension.[24-25] Hyperglycemia, dyslipidemia, and insulin resistance are more prominent with T2DM and increased .[26]

CONCLUSION

The occurrence of hypertension was high. Only 27.8% of previously diagnosed hypertensive patients were normotensive. Age, BMI, and high lipid profile, cigarette smoking, residence and duration of T2DM were significantly associated with hypertension.

Author's Contribution:

Concept & Design of Study:	Muhammad Shoaib
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Satisfaction Level of Patients Wearing Removable Dental Prosthesis According to Oral Health Index Profile-14

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ABSTRACT

Objective: To determine the level of satisfaction of patients using removable dental prosthesis according to Oral health index profile-14(OHIP-14).

Study Design: Cross-sectional descriptive study

Place and Duration of Study: This study was conducted at the Rehmat Memorial Dental Hospital, Women Medical Dental College Abbottabad, from June 2019 to Feb 2020.

Materials and Methods: A total of 207 both genders, with ages ranging between 20 to 70 years, wearing acrylic removable dentures for at least one year, and no signs of pathology in remaining natural teeth were included. Patients wearing cast partial dentures, with defects of jaws, neuromuscular or neurotic disorders, drug addicts, uncooperative, unwilling and handicapped were excluded.

Results: The females were 112(54.11%) and males were 95(45.89%). The mean age of the study was 51.94±11.62 years. The mean duration of wearing RPDs was 2.99±1.63 years. The mean OHIP-14 Score was 23.2±7.16. The OHIP score among females were more (24.27±7.17) than males (21.94±6.989). The satisfaction with RPDs wearing increased as the duration of denture use increase (P=0.005). Comparison of OHIP-14 score among age groups showed that patients satisfaction with RPDs wearing was not affected by age of the patient (P=0.191).

Conclusion: Our mean OHIP-14 Score is lower than international studies showing less satisfaction with removable partial denture. The females were more satisfied with wearing RPDs than males. The satisfaction with RPDs wearing increased as the duration of denture use increase. Patient's satisfaction with RPDs wearing was not affected by their age.

Key Words: Patient's satisfaction, removable partial denture, removable denture, Oral Health Index Profile-14.

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INTRODUCTION

Dental problems have high prevalence and they affect various aspects of life including economic, social, physical and psychological aspects of life.[1]According to world health organization (WHO), Health is defined as individual's perception of their position in life in context of the culture and value system in which they live and in relation to their goals, expectations, standards and concerns.[2]

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As self-esteem is more of a psychological concept therefore, even the common dental disorders like dental trauma, tooth loss and untreated carious lesions may affect the self-esteem which may further affect the quality of an individual's life.[3]The loss of teeth can impair function, esthetics and phonation and is restored in most of the cases with prosthesis.[4]

Conventional dentures are still the treatment of choice in many cases for both economic and biological reasons. However, most of the denture wearers are not satisfied with their dentures. Conflicting results have been reported regarding associations with denture acceptance; yet emotional and psychological factors play an important role in the acceptance of dentures. The satisfaction with the use of removable denture depends on the patient's ability to adapt to the function of the dentures as well as adaptation at the emotional level.[5]

Only clinical indicators are not sufficient to describe the condition of general health and oral health. Some indices are used to evaluate oral health related quality of life such as Oral Health Index Profile(OHIP)-49 and the shorter version OHIP-14.

The English language OHIP questionnaire was developed in Australia by Slade and Spenser. It contains 49 statements that are grouped into seven domains based on a model of oral health. It is made upon a framework of WHO classification of impairments, disabilities and handicaps. Other than original English version OHIP-14 is translated in Chinese, German and Sinhalese language and it demonstrates cross cultural equivalence.[6]

In a previous study, patients with complete dentures in both jaws were less satisfied(28.25 ± 3.67) than patients with single complete denture (35.12 ± 2.11). The result obtained of that study showed dissatisfaction with conventional dentures among edentulous patients.[5]

The aim of this study is to analyze and assess the satisfaction of patients using removable dental prosthesis in Abbottabad region since such studies have not been carried out in this region of Pakistan. This study will help us to assess and remove the complaints of patients using such prosthesis.

MATERIALS AND METHODS

This study was conducted at Rehmat Memorial Dental Teaching Hospital Abbottabad. A total of 207 both genders, with ages ranging between 20 to 70 years, wearing acrylic removable dentures for at least one year, and no signs of pathology in remaining natural teeth were included. Patients wearing cast partial dentures, with defects of jaws, neuromuscular or neurotic disorders, drug addicts, uncooperative, unwilling and handicapped were excluded. Intra oral examination was done to record the removable prosthesis in one or both arches of each patient. OHIP-14 questionnaire was used to measure the variables of satisfaction with removable partial denture (RPD). 95% confident interval was calculated for mean OHIP level. Mean for stratified data based on gender, age, and duration of denture was calculated. Post stratification t-test in the of case of comparing gender and one way ANOVA in case of duration of denture and age groups was calculated at ≤0.05.

RESULTS

Of total 207 participants, the females were 112(54.11%) and males were 95(45.89%), shown in (Fig 7). The most common age group wearing removable partial denture was 51-60 years (n=61, 29.5%) followed by 61-70 years (n=57, 27.5%). There were 51(24.6%) participants in age group 41-50 years and 28(13.5%) in age group 31-40 years. The least number of RPD wearers were belonged to age group 0-30 years.(Table 1)

The common duration of RPD wearing was 1 to 2 years in which there were 87(42%) participants followed by 2.1 to 4 years (n=73, 35.3%). 42(20.3%) patients used RPD for 4.1 to 6 years and 5(2.4%) patients for above 6 years. The details are shown in table 2.

The mean age of the study was 51.94±11.62 years with range from 25 to 70 years. The mean duration of wearing RPDs was 2.99±1.63 years. The mean OHIP-14 Score was 23.2±7.16 with range of 2 to 39. The 95% CI of OHIP-14 Score was 22.2 - 24.2. (Table 3)

The OHIP score of among females were more (24.27±7.17) than males (21.94±6.989) showing that females were satisfied with wearing RPDs than males. The results were statistically significant (P=0.019; 95% CI=-4.28, -.382). (Table 4)

The satisfaction with RPDs wearing increased as the duration of denture use increased. The OHIP-14 score was 22.02±6.943 upto 2 years duration of denture wear while it was 29±4 in above 6 years denture wear duration. The results were statistically significant (P=0.005). The details are given in table 5.

Comparison of OHIP-14 score among age groups showed that patients satisfaction with RPDs wearing was not affected by age of the patient (P=0.191). The detailed statistics are given in the table 6.

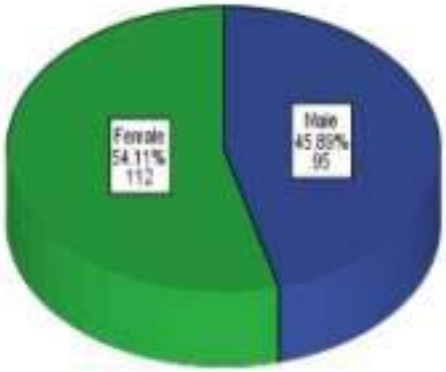

Figure No. 1: gender Distribution

Table No.1: Age distribution of the study

Age groups	Frequency	Percent
20-30	10	4.8
31-40	28	13.5
41-50	51	24.6
51-60	61	29.5
61-70	57	27.5
Total	207	100

Table No.2: Distribution of denture wearing duration

Duration of RPD use (years)	Frequency	Percent
01-2	87	42
2.1-4	73	35.3
4.1-6	42	20.3
6.1 and above	5	2.4
Total	207	100

Table No.3: Mean and standard deviation of age, duration of denture wearing and OHIP-14 score

Variable	Mean ± SD	Range	95% CI
Age (years)	51.94±11.62	25-70	-
Duration of wearing denture (years)	2.99±1.63	1-7	-
OHIP-14 Scores	23.2±7.16	2-39	22.2 - 24.2

*CI, confident interval

Table No.4: Comparison of OHIP-14 score between males and females

Gender	Mean ± SD	P-Value*	95% CI
Male (n=95)	21.94±6.989	.019	-4.28, -.382
Female (n=112)	24.27±7.17		

*Independent t test; P≤0.05 significant level

Table No.5: Comparison of OHIP-14 score by duration of RPD wearing

Duration of RPD wearing (years)	OHIP-14 score Mean ± SD	95% CI	P-Value*
01-2	22.02±6.943	20.54, 23.5	0.005
2.1-4	22.6± 7.28	20.9, 24.3	
4.1-6	25.98±6.831	23.85, 28.1	
6.1 and above	29±4	24.03, 33.97	
Total	23.2±7.165	22.22, 24.18	

*one-way ANOVA test; P≤0.05 significant level

Table No.6: Comparison of OHIP-14 score among age groups

Age group (years)	OHIP-14 Score Mean ± SD	95% CI	P-Value
20-30	25.2±5.673	21.14, 29.26	0.191
31-40	23.29±8.781	19.88, 26.69	
41-50	23.61±7.3	21.55, 25.66	
51-60	21.43±6.079	19.87, 22.98	
61-70	24.33±7.332	22.39, 26.28	
Total	23.2±7.165	22.22, 24.2	

DISCUSSION

The objective of this study was to determine the level of satisfaction of patients using removable dental prosthesis according to oral health index profile-14. Our findings showed that the mean OHIP-14 Score was 23.2±7.16. The females were satisfied with wearing RPDs than males. The satisfaction with RPDs wearing increased as the duration of denture use increased. Patient's satisfaction with RPDs wearing was not affected by their age.

Only clinical indicators are not sufficient to describe the condition of general health and oral health. Some indices are used to evaluate oral health related quality of life such as Oral Health Index Profile (OHIP)-49 and the shorter version OHIP-14. We used OHIP-14 in our study. Similar indices were used in previous studies.[5] The OHIP-14 is derived from the original 49-item OHIP questionnaire. It assesses seven dimensionsof impact, including functional limitations, pain, psychological discomfort, physical disability, psychological disability, social disability, and handicap. In terms of respondent burden, both the OIDP and OHIP-14 inventories are relatively short and thus suitable for use in population surveys. Both measures seem to perform well using un-weighted, rather than weighted, scores, although the individually sensitiveweighting system of the OIDP inventory gives prominence and increased validity to respondent views.[7]

Rehabilitation of patients with removable partial dentures (RPD) is a continuous process and requires attention to the specific needs of the patients. Patients should be physically and psychologically prepared to accept a treatment with RPDs.[8]Satisfaction with RPD depends on individuality of patients, attitude towards RPD, previous RPD experience, encouragement for denture and design and fabrication procedure for RPD. Retention, chewing ability, aesthetics, seem to be the most important factors for RPD acceptance.[9]Patient's dissatisfaction with removable partial denture also depends on some of reasons such as risk to local damage of the remaining teeth, for e.g. caries, periodontal disease, plaque accumulation, oral candidiasis, denture stomatitis, etc. Also, RPD is an aesthetic problem for most people and can affect the appearance and interpersonal communication.[8]

Al-Baker et al.[5] compared the oral health-related quality of life (OHRQoL) between patients with both maxillary and mandibular complete denture and those with either the maxillary or the mandibular complete denture. They reported that the mean OHIP score with conventional removable denture was 35.12 ± 2.11. Their OHIP-14 score was little higher than our study. The difference can be due to proper fabrication of RPDs and level of expectation among patients.

Our low score of OHIP-14 with RPDs showed that most of patients are not satisfied. Similar results were found in previous studies.[5,10]An alternativetreatment plan to overcome the inadequacy of conventional treatment would be well accepted among such patients, thereby improving their functional as well as aesthetic limitations. The implant supported over dentures claims to be the best standard of care for edentulous patients and is said to improve the quality of life, stability and retention.[11]

Our results showed that females were satisfied with removable denture than males. This may represent more compliance level of females than males. However another conducted on predictors of patient satisfaction with removable denture showed that males were more satisfied. This difference can be attributed to genetic, environmental and ethnic reasons.[12]

Published literatures report that implant-supported dentures, either complete over denture or fixed complete denture, significantly improves the quality of life for edentulous patients compared with conventional removable complete denture.[13]Functional and psychosocial disability experienced by the denture wearer will definitely influence the option for dental implant therapy and prosthetic rehabilitation. For older edentulous subjects, the general health and financial status is of concern while preferring implant retained overdentures over conventional dentures.[14]

Our results showed that patient's satisfaction with RPDs wearing was not affected by their age. However, other studies showed that the mean OHIP score tend to increase with increase in age.[5,15]

Our findings showed that with increase duration of wearing removable partial denture the satisfaction of patient increases. This was shown by OHIP-14 score was more in above 6 years wearers than less than 6 years. This can be due to adjustment of patients with time and adaptation of oral tissue.[16]

Our studies have many limitations. One of the limitations is the recall bias as many patients may remember the proper duration of their denture wearing. The second is we do not consider whether the RPDs were properly fabricated and who provide the RPDs. So, more studies of prospective cohort design are required to explore further this area.

CONCLUSION

- Our mean OHIP-14 Score is lower than international studies showing less satisfaction with removable partial denture.
- The females were satisfied with wearing RPDs than males.
- The satisfaction with RPDs wearing increased as the duration of denture use increase.
- Patient's satisfaction with RPDs wearing was not affected by their age**.**

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Relationship between Intercanine Distance with the Length of Index, Middle and Ring Fingers of Right Hand

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ABSTRACT

Objective: This study was conducted to evaluate the correlation of width of the maxillary anterior teeth with the length of index, middle and ring fingers.

Study Design: Cross-Sectional Study

Place and Duration of Study: This study was conducted at the Department of Prosthodontics, Institute of Dentistry, Liaquat University of Medical and Health Sciences, Jamshoro from June 2019 to December 2020.

Materials and Methods: Maxillary casts were made from alginate impressions. An adaptable ruler was used to calculate the Inter-Canine Distance (ICD). The length of the patients' index, middle, and ring fingers was then measured with a vernier caliper with a precision of 0.01 mm from the tip of the finger to the lower border line of the fingers. Data was analyzed using SPSS version 17. Pearson's correlation coefficient was applied to find out the correlation among length of index, middle and ring finger with ICD.

Results: One hundred twenty volunteers participated in this study. The mean age was 24.30±3.304. The sample consisted of 66% males and 34 females. Descriptive statistics of the length of Index finger showed mean score 74.35±3.400, length of Middle finger showed mean score 82.22±3.417, length of Ring finger showed mean score 78.42±3.400, the ICD showed mean score 50.06±2.394. The correlation between length of Index, Middle and Ring fingers and ICD was positive and statistically significant (P-Value= 0.001).

Conclusion: It is concluded that there was significant correlation between the ICD and length of index, middle and ring fingers.

Key Words: Index finger, lateral asymmetry, linear growth, ring finger, sexual dimorphism

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INTRODUCTION

Edentulism affects every race worldwide with average rate round the world is reported to be 60% at the age of 60 years [1,2]. Oral rehabilitation of these patients is usually achieved through the fabrication of conventional complete dentures, implant supported removable or fixed prosthesis considering patient's acceptance and overall satisfaction as the main factor of importance [3,4].

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Along with many other factors, a satisfactory cosmetic effect in any dental reconstruction has always been regarded as significant and it is likely that a well-made prosthesis would fail in the eyes of the patient if it is lacking in this regard[5]. For dental and facial aesthetics, proper anterior tooth selection in terms of size, form and shade as well as a harmonious balance with the surrounding oral environment is critical. The mesiodistal width of the maxillary central incisors is significant when selecting anterior teeth for completely edentulous subjects because they are the most prominent teeth in the arch when viewed from the front [6,7].

Various guidelines have been proposed for determining the size of teeth, such as the size of the face, the size of the maxillary arch, the incisive papilla and the canine eminence or buccalfrenum, the maxillo-mandibular relation, the contour of residual ridges, lips, and nasal width, but different opinions have been stated about

their importance. Many attempts have been made to measure the selection of anterior teeth for removable prosthesis, but no consensus has been reached on an effective procedure [8,9]. The selection of maxillary anterior teeth for full dentures has proven to be a challenge in clinical practice, and there is still debate about the best approach to use. Hence this study was conducted to evaluate the correlation of width of the maxillary anterior teeth with the length of index, middle and ring fingers.

MATERIALS AND METHODS

The ethical approval was sought from the committee of university. The informed written consent was taken from each participant. The participants were recruited with convenient sampling technique from the Department of Prosthodontics, Institute of Dentistry, Liaquat University of Medical and Health Sciences Jamshoro from June 2019 to December 2020. The inclusion criteria were participants having age range from 18 to 30 years of both genders, having no missing maxillary anterior teeth, having no gingival or periodontal conditions problems in anterior teeth, having no inter-dental spacing or crowding, having no anterior restoration and having no history of orthodontic treatment. The exclusion criteria were participants having supra-erupted teeth, having altered passive eruption of teeth, having developmental anomalies/ anodontia

Data Collection Procedure: Maxillary impressions were taken in metal perforated trays with irreversible hydrocolloid impression material and poured with dental stone type IV within 10 minutes. Using an adaptable ruler, the ICD of maxillary anterior teeth was calculated by measuring the distance between the distal points of the right and left canine teeth on a line perpendicular to the long axis from the cast. A putty impression of the largest finger (middle) was used to create an autopolymerised acrylic resin mould.

The length of the patients' index, middle, and ring fingers was then measured with a vernier caliper with a precision of 0.01 mm from the tip of the finger to the lower border line of the fingers. Each reading was taken three times in order to obtain an average value to be recorded in the proforma.

Data was analyzed using SPSS version 17. The quantitative variables like age, intercanine width, length of index, middle and ring finger was presented as mean and standard deviation. Frequency and percentage was calculated for gender. Pearson's correlation coefficient was applied to find out the correlation among length of index, middle and ring finger with ICD. P-value < 0.05 was considered as significant.

RESULTS

This research included a total of 120 patients. The mean age was 24.30±3.304 years (Table 1). Males were 66% and females were 34% (Figure-1). The mean score for length of index finger was 74.35±3.400, middle finger was 82.22±3.417, ring finger was 78.42±3.400 and ICD was 50.06±2.394(Table 2). The length of the index, middle, and ring fingers were found to have a positive and statistically significant association with ICD(P-Value= 0.001) (Table 3).

Table No.1: Age of Patients

Mean	24.30
Std. Deviation	3.304
Minimum	18 Years
Maximum	30 Years

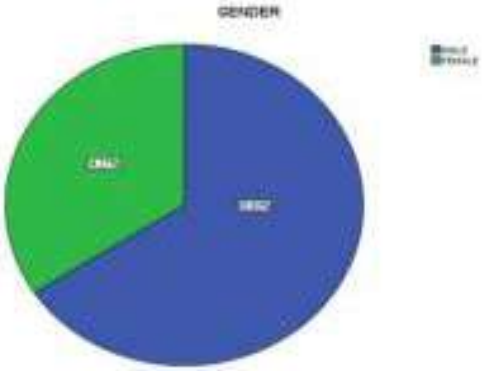

Figure No.1 Descriptive Statistics of Gender

Table No.2: Descriptive Statistics of the Length of Fingers & Inter Canine Width

	Mean	Std. Deviation
Length of index finger	74.3586	3.40001
Length of middle finger	82.2254	3.41720
Length of ring finger	78.4278	3.39890
Inter-canine width	50.0637	2.39463

Table No.3: Correlation Between Length of Fingers and Intercanine Distance

	length of finger	intercanine width
	index finger	
pearson correlation	0.688**	1
sig. (2-tailed)	0.001	
n	120	120
	middle finger	
pearson correlation	0.670**	1
sig. (2-tailed)	0.001	
n	120	120
	ring finger	
person correlation	0.677**	1
sig. (2-tailed)	0.001	
n	120	120

**. Correlation is significant at the 0.01 level (2-tailed)

DISCUSSION

Anterior tooth size selection is a great challenge for the clinician when the patient lacks pre-extraction records such as casts, photographs, radiographs and extracted teeth[10,11]. In the absence of these pre-extraction records, attempts have been made to use various anthropometric measurements as guides to estimate the size of artificial anterior teeth for the edentulous patient but to date, there has been no consensus on a reliable method for anterior tooth selection for the edentulous patient. [10-12] The length of fingers is some of the measurements that have been explored as reliable guides to predict the mesio-distal width of anterior teeth for complete denture patients[13].

The findings of this research revealed a significant relationship between the maxillary anterior teeth and the index, middle, and ring finger lengths, which is consistent with the findings of Ahila SC et al[13], who discovered a significant relationship between the maxillary and mandibular anterior teeth and the index and little finger lengths.

In this analysis, the mesio-distal width had a mean score of 50.06±2.394. The findings of this study contradict those of caucasian populations, who recorded mean combined mesio-distal widths of maxillary anterior teeth ranging from 42.16mm to 60.33mm [14,15]. The variations in mean values may be attributed to ethnic distinctions between Caucasian and Asian populations, with Asian populations having smaller teeth than Caucasian counterparts, according to studies. The association between the length of the index finger and the inter-canine distance was found to be 0.688 in this analysis.

The findings of this study agreed with those of Ahila SC et al [13], who found that the actual value of total maxillary anterior width was strongly correlated to index finger length, with a correlation coefficient of 0.964. The significance level was 0.01.

ICD should be used only as reference value in estimations of central incisor width. Final tooth selection for edentulous subjects should be made in accordance with facial form[16]. The use of the right hamular notch to left hamular notch measurement plus 10 mm provides a useful method for 80 determining the width of the 6 maxillary anterior teeth for complete denture patients with medium and large cast sizes[17].

CONCLUSION

The maxillary anterior teeth were found to have a substantial relationship with the length of the index, middle, and ring fingers.

Author's Contribution:

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IgM and IgG Antibodies Status in Suspected Patients of Covid-19 in Khyber Pakhtunkhwa, Pakistan

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ABSTRACT

Objective: To implement a new screening method in Pakistan's Khyber Pakhtunkhwa (KPK) province, increase testing capability, alleviate the burden on the PCR facility, and learn more about the infected population's herd immunity.

Study Design: Descriptive study

Place and Duration of Study: This study was conducted at the Department of Biotechnology, Real Time PCR Laboratory Dabgari garden Peshawar from April, 2020 to June, 2020.

Materials and Methods: A total of 200 individuals between the ages of 20 and 60 were included in the study. Immunochromatographic Technique was used to screen both of these patients for IgM and IgG levels (AMP, Australian).

Results: Antibodies were detected in 92 (46%) of the subjects (IgM and IgG). IgM and IgG positive patients reported for 7 (8%) and 85 (92%) of the 92 positive patients, respectively. There were 72 (51%) male and 20 (3%) female positive subjects, respectively. The 20-30 age group was the most affected, followed by the 30-40 age group, and the >60 age group was the least affected. Temperature was the most common symptom associated with suspicious subjects (85%), followed by body aches (80%), dry cough (77%) and sore throat (70%).

Conclusion: The prevalence of antibodies, IgM, and IgG positivity was very high (46%) among the suspected patients, and the most affected age group was 20-30, with temperature symptoms being the most common.

Key Words: Covid-19, IgM, IgG, Immunochromatographic technique (ICT), Polymerase chain reaction (PCR)

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INTRODUCTION

World is facing a novel pandemic Corona virus. World Health Organization (WHO) confirmed it an emergency and named it COVID-19 on 11 February 2020. COVID-19 stands for Corona virus disease 2019 and is caused by extreme acute respiratory syndrome corona virus-2 (SARS-COV2). The word Corona is originated from Latin which means 'crown or holo" because of its shape.

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Under electron microscopy it appears club shaped and surrounded by spikes peplomers.[1] The genome size of Corona viruses is larger than RNA viruses, ranges from 27 to 34 kbs.[2]

COVID-19 is related to the Corona virus family named Coronaviridae and sub family ortho coronavirinae with genus Alpha corona virus and genus Beta corona virus (zoonotic); in 1930s Corona viruses were reported to cause liver, neurological and gastrointestinal diseases in poultry animals. These are enveloped positive-sense single stranded RNA viruses.[3] About 7 strains of Corona viruses are believed to have its hands in infecting human, among these 4 Corona viruses which are Alpha corona virus strains NL63 and 229E along with Beta corona virus strains HKU1 and OC43 can only cause common cold like symptoms while the remaining 3 are Beta corona virus strains which are zoonotic and are believed to have transmitted from Bat[4] can cause severe respiratory infection and deadly pneumonia in human; SARS, MERS, SARS-CoV2 are Beta corona virus strains.[5]

SARS was epidemic, caused by SARS-CoV and was first encountered in November 2002 in Guangdong province of China, later it spread to 30 countries. It affected more than 8000 and killed more than 700

individuals. Middle East respiratory syndrome is caused by the MERS Corona virus and is known as MERS (MERS-CoV), it was first detected in September 2012 in Saudi Arabia. Till now it has affected 2500 with more than 800 deaths.

Covid-19 or SARS-CoV2 was first detected in Wuhan China on 31 December. It was a severe and deadly pneumonia which was noted on December 1st later all these patients were linked with the Hunan seafood market.[6] The disease spread rapidly even doubled in every 7 days. The disease is spread to 204 countries already and had affected more than 6 million individual and this deadly pandemic has killed more than 0.1M people worldwide. In Pakistan more than 0.13Millions individuals are suffering from Covid-19 and more than 2000 are died, among these more than 14 thousands are confirmed cases in KPK while more than 600 are killed by this deadly pandemic.

Symptoms of Covid-19 may vary, some patients show mild symptoms while some show acute respiratory illness. Common symptoms are chill, Fever (99%), dry cough (59%), Fatigue (70%), sputum, nausea, vomiting, diarrhea, anorexia, lethargy, myalgias, headache and dyspnea.[7] The disease may be severe in the median age or if there is any medical issue already; diabetes, cancer etc.

The genetics analysis of COVID-19 sited it in genus Beta corona virus which shows its link with the Corona virus of Bat named Bat CoV RaTG13.[8] Which suggests that virus was initially transmitted from bat to human. Further transmission occurs through direct contact from infected person to healthy person. Respiratory droplets can carry the infection, contaminated surfaces can also play a role in the spreading of disease, and the viral particles may remain for 72 hours on the surfaces. The incubation periods may vary from 1 to 14 days. An infected person has 97.5% chances to transmit the disease while a person who is asymptomatic have less chance to transmit the disease.

Early diagnosis of Covid-19 is very much important for the future prevention of the disease. The diagnosis of infection can be done by detecting the virus/Antibody. As the culturing of SARS-CoV2 is insensitive and much difficult, the RT PCR is much more working and sensitive and standard techniques for the viral detection[9] but at a same time RT PCR is an expensive technique and depends upon the availability of equipment and expertise. So we did qualitative IgM and IgG tests to screen and detect the Covid-19, because it was readily available and less expensive technique, also it takes less time as compare to RT PCR. Secondly PCR cannot eliminate the individuals who have already recovered and developed antibody. As today everyone is demanding for PCR kits and we did not get any actual data and disease burden just because all institutions have great shortage of kits and this is too risky as may an infected individual be there in society and is readily transmitting the disease. If instead an easy option of screening is there, then definitely timely screening and timely quarantine will be highly effective in prevention of transmission and possible disease burden.

MATERIALS AND METHODS

This study was done at Real Time PCR laboratory, Dabgari garden Peshawar. Only those patients were included who were suspicious and either were referred by physicians or by themselves wanted to screen for Covid-19 exposures. Majority of the patients had particular symptoms like dry cough, temperature and body aches. Age range was from 20 to more than 60 years. 1 ml blood was taken from all of the suspected cases with their informed consents in subject to proper safety guidelines. Proper record was noted using a proforma. Blood samples were centrifuged and tests were performed using Immunochromatographic Technique (ICT) (Amp, Australia). 10ul liter serum was added to the wells of device and waited for 30 minutes. All of the three bands that is control, IgM and IgG were noted. The data was entered and analyzed through SPSS-25.

RESULTS

Antibody (IgM and IgG1) positivity was found in 92 (46%) of the subjects (Table 1). IgM and IgG positive patients accounted for 7 (8%) and 85 (92%) of the 92 positive patients, respectively. Male and female subjects made up 72 (51%) and 20 (3%), respectively, of the overall positives.

In the current study, Covid-19 has affected all age groups of population and the 20-30 age group was the most affected, followed by the 30-40 age group, and the >60 age group was the least affected (Table 2). Temperature was the most common symptom associated with suspected subjects (85%), followed by body aches (80%), dry cough (77%), loss of taste (70%) and sore throat and change in test results (70%). Beside these some other symptoms were also observed like loss of smell (40%) (Fig. 1).

Table No.1: IgM and IgG status in male and female suspected subjects

Gender	No.	IgG & IgM +ve	IgG +ve	IgM +ve
Male	140	72 (51%)	68 (94%)	4 (6%)
Female	60	20 (3%)	17 (85%)	3 (15%)
Total	200	92 (46%)	85 (92%)	7 (8%)

Table No.2: Antibody status in different age groups

Age (subjects)	Positive subjects
20-30 (50)	24
30-40 (45)	22

40-50 (35)	18
50-60 (32)	16
>60 (38)	12
Total (200)	92 (46%)

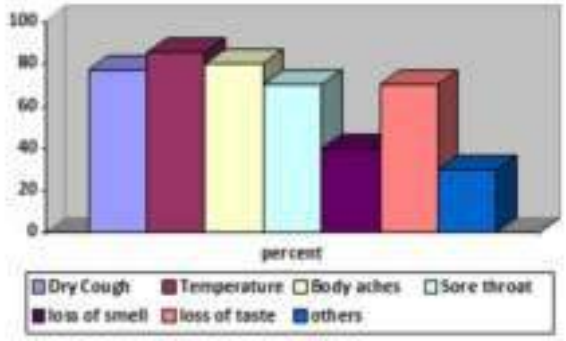

Figure No.1: Percent of subjects having associated symptoms

DISCUSSION

Covid-19 has adopted an alarming position worldwide, has almost affected 7M people and killed more than 0.3M people. In Pakistan, infection also increases day by day and almost has affected all provinces of Pakistan. In KPK province of Pakistan the total number of affected individuals increased to more 17 thousands.[10]

This study reflects IgG and IgM status, that most of the patients have already developed IgG (Table 1). This means that most of the patients have already cleared the infection and leading toward the herd immunity. It can be predicted that most of the population if infected with such ratio will develop herd immunity very rapidly. So for no study has been conducted nationally as well as internationally regarding antibody status in suspected subjects having corona virus infection. As mortality rate is low as compared to recovery[10], that, s why it can be predicted that our study is in similar fashion to the already existing data of WHO.

In the current study, Covid-19 has affected all age groups of population and especially age group of 20-30 was more affected (Table 2) followed by age group of 30-40. Our age group involvement is almost in agreement with the study conducted in China.[11] According to that study, more cases were found in age group of 30 and above. This might be possible as these groups of population seem more active and might be more exposed to transmission of infection. Secondly, male subjects are mostly affected as compared to female (Table.1). Our study is in agreement to already data available conducted in China.[11] The reason is obvious and possibly might be more involvement in social activities by male. All of the enrolled subjects were noted with signs and symptoms and these were recorded in proforma. According to the data, different symptoms were associated with suspected patients. Temperature was the most common symptom associated with suspicious subjects (85%), followed by body aches (80%), dry cough (77%) and sore throat (70%). Beside these some other symptoms were also observed like loss of smell (40%) and loss of taste (70%) [Fig. 1]. Majority of the studies are in favor of our study, as most of the studies indicated that covid-19 patients have symptoms of fever, body aches and dry cough (6, 7, 8). As this is the first study and in past no such studies have been done in Pakistan and especially in KPK. Therefore, prevalence of antibody in suspected patients, either it is high or low cannot be confirmed but according to our knowledge and patients history, enrolled population have developed both separate and even mixed antibodies against Covid-19.

Although this was a report and single centered so limitations are there. Hence need exist to explore such studies at large scale and multicentre points may be involved. Secondly as this is ICT based base study hence this should be confirmed through ELISA.

CONCLUSION

The IgM/IgG antibody positivity ratio was very high (46%) among the suspected patients, and the most affected age group was 20-30, with the most common symptoms being fever, body aches, and dry cough.

Author's Contribution:

Concept & Design of Study:	Sajid Ali
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Perception of Periodontal Diseases among Antenatal Care Providers

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ABSTRACT

Objective: To assess the awareness, knowledge and attitude of antenatal care providers (ANC) regarding the periodontal disease and its association with adverse pregnancy outcomes in tertiary care hospitals of Pakistan.

Study Design: A cross sectional study

Place and Duration of Study: This study was conducted at the Four Tertiary Care Hospitals of Islamabad and Rawalpindi among Antenatal Health Care (ANC) providers from December 2019 to March 2020.

Materials and Methods: Approval was sort from the ethical review committee of Armed Forces Institute of Dentistry Rawalpindi. A predesigned questionnaire, containing the demographic information to judge the knowledge, attitude, and awareness among 114 ANC providers over the period of four months regarding the association of periodontal disease and adverse pregnancy outcomes.

Results: Overall response rate was 93%. Most of participants (92%) had the knowledge that bleeding from gums was the first sign of inflammatory process, but 59% did not know about the adverse effects of periodontal disease on pregnancy. About 62% of experienced practitioners knew that 2nd trimester is safe for dental treatment but 75% of them never inquired about oral health of expecting women.

Conclusion: The study concludes that knowledge of Health care providers about periodontal disease in pregnant females is lacking and their clinical behavior regarding oral and periodontal health was also not adequate. Therefore, inter-professional education programs should be implemented as a part of continuing medical education to bridge the knowledge gap between periodontist and ANC providers.

Key Words: Periodontal disease, antenatal, pregnancy, health care providers

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INTRODUCTION

Maternal periodontal diseases have been documented as early as 1800 century[1] yet periodontal health in pregnant women has become a field of research only since the 1960s.[2] This is the first ever study conducted among obstetricians and gynecologists who practiced in tertiary care hospitals of Islamabad and Rawalpindi.

Epidemiological studies have shown that more than 40% of women experience some form of periodontal disease during pregnancy[3] that affect their quality of life and pose a possible risk of perinatal problems such as pre-term low birth weight babies (PTLBW). It is clinically evident that periodontal disease contributes nearly to 18% PTLBW cases.[4]

Pregnancy brings complex physiologic changes occurring throughout the gestation period which are responsible for fluctuations in hormonal level mainly progesterone and estrogen, which are responsible for increase in gingival vascularization and also increase in microbial count of some species of microorganisms.[5] These microorganisms will worsen the gingival inflammation and increase the tendency of the gums to bleed even with reasonably low plaque levels.[6] Periodontal changes observed during gestation that effect women are pregnancy gingivitis, gingival overgrowth/enlargement, and pregnancy epulis/ pyogenic granuloma.[1]

All changes that occur are mostly reversible and do not cause permanent changes in periodontal tissues. In 2015, premature birth was recorded as the main cause of neonatal deaths in Pakistan.[7] Globally, ten countries harbor 67% of the burden of neonatal deaths, with Pakistan accounting for 7% of the neonatal deaths worldwide.[8] In Pakistan, 860,000 babies are born premature (< 37 weeks) and due to preterm complications, 75,000 children under the age of five, die every year.[9]

It is evident from the research that with the severity of periodontal disease during gestation both neonatal mortality and incidence of still births increased in Pakistan.[10] A quality antenatal care system in place can timely identify and detect women at risk of developing

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complications during gestation, it ensures referral to relevant specialist.[11,12]

Improving physician`s knowledge and attitudes towards oral health diseases by development of clinical practice guidelines will lead to optimized patient's oral care as well as improved pregnancy outcome.[13]

The purpose of this study was to assess the knowledge, attitude and awareness of association of periodontal disease and pregnancy outcomes among antenatal care providers in tertiary care hospitals of Islamabad and Rawalpindi.

MATERIALS AND METHODS

This study was conducted in four tertiary care hospitals of Islamabad and Rawalpindi among Antenatal health care (ANC) providers. Approval was sort from the ethical review committee of Armed Forces Institute of Dentistry Rawalpindi. The study design was cross sectional and the sampling technique was convenient sampling. It was carried out from December 2019 to March 2020. All participants who were obstetricians & gynecologists, post-graduate trainees and resident medical officers posted in Gynecology and Obstetrics department entered the study voluntarily following an explanation of its objectives. Because of cultural sensitivity only female antenatal care providers were included as research [14] shows that in Pakistan 95% women prefer female gynecologists and midwives. A structured questionnaire was distributed among the participants.

A Questionnaire consisting of three sections was designed based on previously published questionnaires [15] and was pre-tested to validate and apply required modifications. For validation the questionnaire was first sent to a group of ten obstetricians & gynecologists. Reliability coefficient was calculated and the value of Cronbach's alpha was found to be 0.72. The section-one was about socio-demographic features including age, gender, professional experience and type of practice of the ANC providers, section-two was regarding knowledge which consisted of 12 items and section-three was about behavior and attitude which comprised of 7 items. The Data collected from the questionnaire was entered in SPSS version 23. The data of all three sections including socio-demographic, knowledge, behavior and attitude were analyzed as frequencies and percentages. Further, association of three above mentioned sections were assessed with periodontal diseases using chi-square statistical test, p-value ≤0.05 was considered as statistically significant.

RESULTS

A total of 114 responses were selected out of 122 to be included in the study. The rest were discarded because they were not completely filled. The response rate was 93%. Out of 114 ANC providers 89%were less than 45 years of age and almost 72% had experience of less than 10 years and more then 94% do hospital-based practice.

Table No.1: Correlation of Professional Experience with Knowledge of Antenatal Health Care Providers

Items	**Responses n (%) -** Professional experience <10yrs n=82, >10yrs n= 32					**P value**
Are you aware that dental diseases during pregnancy can cause harm to mother?		Absolutely no idea	Preliminary	Fair	Good	
	<10 yrs	15 (18.3)	42 (51.2)	16 (19.5)	9 (11)	0.051
	>10 yrs	12 (37.5)	16 (50.0)	4 (12.5)	0	
What do you mean by term Gingivitis?		Inflammation	Degenerative process	Autoimmunity	-	
	<10 yrs	76 (92.7)	5 (6.1)	1 (1.2)		0.291
	>10 yrs	32 (100)	0	0		
What are clinical signs associated with gingivitis?		Gingival bleeding	Tooth mobility	Alveolar bone destruction	-	0.002*
	< 10 yrs	77 (93.9)	5 (6.1)	0		
	>10 yrs	28 (87.5)	0	4 (12.5)		
Are you aware of relationship between gum diseases & adverse pregnancy outcomes?		Yes	No	Unsure	-	0.021*
	< 10 yrs	14 (17.1)	25 (30.5)	43 (52.4)		
	>10 yrs	0	8 (25)	24 (75)		
In which trimester severity of gum problem is increased?		1st Trimester	2nd Trimester	3rd Trimester	-	
	< 10 yrs	11 (13.4)	36 (43.9)	35 (42.7)		0.119
	>10 yrs	8 (25)	8 (25)	16 (50)		
Are you familiar with term pregnancy		Yes	No	-	-	0.193
	< 10 yrs	32 (39)	50 (61)			

tumour/epulis	>10 yrs	8 (25)	24 (75)			

Table 2: Correlation of Professional Experience with Attitude and Behaviour of Antenatal Health Care Providers

Items	Responses n (%) Professional experience <10yrs n=82, >10yrs n= 32				P value
What is the attitude of general population towards dental treatment during pregnancy?		**Receptive**	**Reluctant**	**Unwilling**	0.257
	< 10 years	25 (30.5)	38 (46.3)	19 (23.2)	
	>10 years	8 (25)	20 (62.5)	4 (12.5)	
Do you recommend dental treatment during pregnancy?		**Not recommended until delivery**	**Yes, elective procedures only**	**Safe in 2nd trimester**	0.001*
	< 10 years	13 (15.9)	45 (54.9)	24 (29.3)	
	>10 years	0	12 (37.5)	20 (62.5)	
Do you ask question related to women's oral health during prenatal consultations?		**Yes**	**No**	-	0.009*
	< 10 years	42 (51.2)	40 (48.8)		
	>10 years	8 (25)	24 (75)		
Do you visually carry out an oral examination if the patient complaint of gum problem?		**Yes**	**No**	-	0.828
	< 10 years	54 (65.9)	28 (34.1)		
	>10 years	20 (62.5)	12 (37.5)		
Do you provide oral health related information during prenatal consultations?		**Yes**	**No**	-	0.090
	< 10 years	35 (42.7)	47 (57.3)		
	>10 years	8 (25)	24 (75)		

Table 3: Correlation of Professional experience with multiple response items

Items	Responses n (%) Professional experience <10yrs n=82, >10yrs n= 32					
What is the influence of gum disease on pregnancy?		Preterm labor	Low birth weight	Spontaneous abortion	Preeclampsia	No Influence
	<10 years	12 (14.6)	6 (7.3)	3 (3.7)	2 (2.4)	63 (76.8)
	>10 years	4 (12.5)	0	0	0	25 (78.1)
	P value	0.515	0.131	0.368	0.516	0.548
What are the oral symptoms described by pregnant women?	<10 years	Caries	Gingival bleeding	Gingival over growth	Hypersensitivity	-
		9 (11.0)	57 (69.5)	25 (30.5)	10 (12.2)	
	>10 years	0	20 (62.5)	8 (25.0)	4 (12.5)	
	P value	0.045*	0.307	0.368	0.549	
Aggravation of gum disease in pregnancy is attributed to		increase in Estrogen & Progesterone	Poor Oral Hygiene	Depression of maternal T-lymphocytes	Changes in microbial flora	-
	<10 years	56 (68.3)	5 (6.1)	23 (28.0)	7 (8.5)	
	>10 years	20 (62.5)	4 (12.5)	8 (25.0)	0	
	P value	0.353	0.220	0.469	0.092	
When do you think patient experiences reduction in severity of gum disease?	<10 years	Soon after delivery	One-month post-partum	Two-month post-partum	-	-
		23 (28.0)	45 (54.9)	16 (19.5)		
	>10 years	4 (12.5)	20 (62.5)	8 (25)		
	P value	0.062	0.300	0.342		
What is your		CPD	Scientific	Part of specia-	Dental	

source of knowledge related to this influence?	<10 years		Publications	list training	Professionals	
		32 (39.0)	5 (6.1)	33 (40.2)	15 (18.3)	-
	>10 years	4 (14.3)	0	16 (57.1)	4 (14.3)	
	P value	0.012*	0.233	0.091	0.435	

*P value ≤0.05 significant

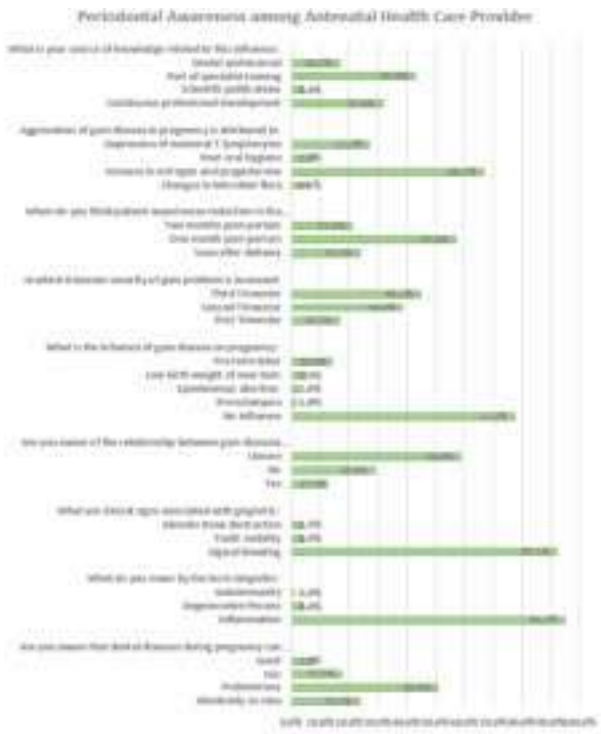

Figure No.1: Periodontal awareness among Antenatal Health Care Providers

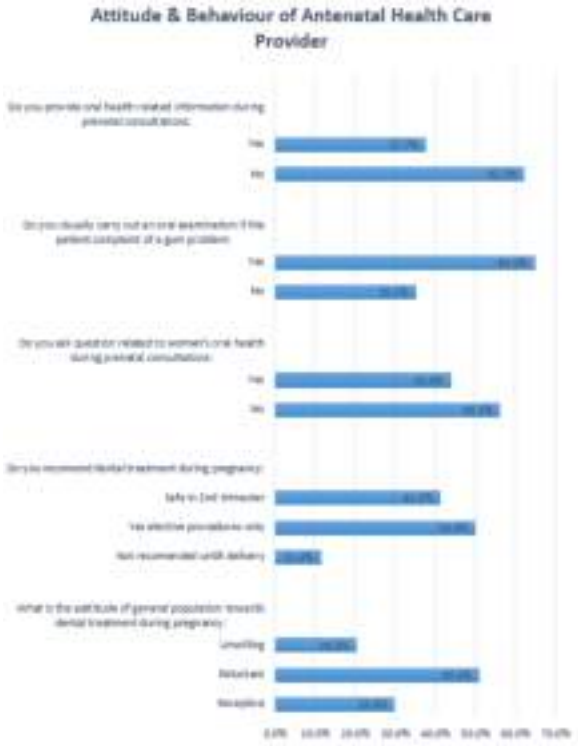

Figure No.2 Attitude and Behaviour of Antenatal Health Care Providers

Fig 1 and 2 shows the periodontal awareness, attitude and behavior of ANC providers.

Table 1 shows Correlation of Professional Experience with Knowledge of Antenatal Health Care Providers. Most of the participants (> 50%) were not aware that gum disease during pregnancy can cause harm the mother however, 93% have sufficient knowledge about gingivitis as inflammatory disease. Surprisingly only 17% of participants knew the relationship between gum diseases and adverse pregnancy outcomes. However, 50% of practitioners with > 10 years' experience knew that severity of gum disease is increased in 3rd trimester.

Also 62.5% of experienced practitioners knew that 2nd trimester is safe for dental treatment. However, 75% of experienced practitioners did not ask a question regarding oral health of women which is significant with p-value of 0.009 as shown in Table 2.

There is apparently consensus over reduction of symptoms of gum disease one-month post-partum. Data showed that there is less co-relation between dentist and ANC providers about exchange of knowledge as a part of continuous professional development. Most of the ANC providers with below and above 10 years' experience thought that there is no relationship between gum disease and pregnancy in terms of side effects 77% and 78% respectively as shown in Table 3. Only 27% of ANC providers refer the pregnant women to the dentists for dental check-up.

DISCUSSION

In this study all participants were females as 95% women prefer female gynecologists and midwives,[15] this might be attributed to the social obligation that's why there are more female ANC providers as compared to males in Pakistan.

In this survey, about 92% of the participants can identify the chief clinical sign of periodontal diseases as gingival bleeding, comparable to study conducted by Cohen et a[12] and Rebecca Wilder et al.[16] Aggravation of gum disease in pregnancy is attributed to 67% increase

in estrogen and progesterone levels and is comparable with a study conducted in India.[17]

About 44% of ANC providers were agreed that 2nd trimester is safe for delivering effective dental care while 11% agreed to avoid any treatment until delivery.[18]

A high percentage of about 93% of ANC providers with <10 years' experience was aware of the fact that pregnancy increases the likelihood of gingival inflammation comparable with a study conducted in UAE.[18] However, 24% of ANC providers had inadequate knowledge of the effects of oral health on pregnancy outcomes. Results of 30% were obtained in a study conducted in Karachi which showed that there was limited knowledge about effects on oral health[5] comparable by a study conducted in Australia.[18]

In this study, about 5% ANC providers reported that periodontal disease is the main cause for LBW new born, in contrast to 68% in study conducted in India.[19] This may be due to the difference in the interpretation of the question. Only about 6% participants were aware of role of bacteria in periodontal disease progression, in contrast to 86% in study conducted by Cohen et al. The reason could be due to the fact that medical school's curriculum lack introduction to basic oral health knowledge.[20] Interestingly, symptoms of severe periodontal disease such as tooth mobility and alveolar bone loss were not rightly identified by practitioners of about 4% and 3 % respectively in contrast to 45% of the practitioners solely gave the accurate answer in another study.[12]

In this study, about 17% of participants considered relationship of periodontal disease with pregnancy in contrast a high proportion of obstetricians/ gynecologist's considering bidirectional relationship.[16] Less experienced obstetricians and gynecologists were more conscious of such a relationship than more experienced practitioners may be due to increased inclination towards the efficient use of internet and better inter professional communication on educational forums and on social media.

Analyzing the attitude and behavior of ANC providers only about 28% of their patients to dental surgeon for check-up. This discrepancy between a periodontal knowledge and clinical practice is also observed in others countries.[16]

About 51% of participants inquire the pregnant females about their dental problems at the time of prenatal examination, in contrast 73% in other study.[21] Only 27% of ANC providers were in the opinion to refer the patients to dentist for dental check-up at regular intervals which is very less might be due to their busy routine or due to realization that it is very expensive.

Main limitation of this study was the small sample size so the results cannot be generalized to the total population of Pakistan. Even though the survey was self-administered and anonymous, the responses collected may be biased to what the participants understood was ideal.

CONCLUSION

Our study suggested that periodontal knowledge of ANC providers is reliable; however, the awareness of the correlation between pregnancy and periodontal disease and clinical behavior regarding oral and periodontal health was not in adequacy with such knowledge. In low income countries like Pakistan, the incidence of adverse pregnancy outcomes can be reduced by integrating oral health program in medical school's curriculum and developing ANC practice guidelines with emphasis on a dental consultation during early phase of pregnancy.

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Serum Amylase Sensitivity in Diagnosed Cases of Acute Pancreatitis

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ABSTRACT

Objective: The main objective of the study is to analyze the serum amylase sensitivity in diagnosed cases of acute pancreatitis.

Study Design: Cross sectional Study

Place and Duration of Study: This study was conducted at the Department of Biochemistry Avicenna Medical College, Lahore with the collaboration of University of Lahore during June 2019 to December 2019.

Materials and Methods: After taking permission from ethical committee of hospital, data was collected from 100 patients of acute pancreatitis. The serum amylase level was measured in all diagnosed patients. Demographic values and history of all the selected patients were collected.

Results: The data was collected from 100 patients of acute pancreatitis. The mean age was 55.67 ± 5.55 years. There were 57 female and 43 male patients. The value of serum amylase was found to be normal in 42 patients (59.52% female; 40.47% male), while mildly elevated in 50 patients (50% male; 50% female).

Conclusion: It is concluded that that serum amylase has a lower sensitivity and misses the diagnosis of about two thirds of the diagnosis.

Key Words: Serum Amylase Sensitivity, Diagnosed Cases, Acute Pancreatitis

Citation of article: Bhatti YA, Zia S, Iftikhar A, Butt HN. Serum Amylase Sensitivity in Diagnosed Cases of Acute Pancreatitis. Med Forum 2021;32(4):130-132.

INTRODUCTION

The incidence of acute pancreatitis in the United Kingdom has been estimated at 100 to 250 per million populations per year. Men and women are affected at a similar rate, although the aetiology differs between the sexes, with gallstones and biliary sludge (echogenic, gravitating material composed of cholesterol crystals, calcium bilirubinate granules, and muco-glycoproteins) being more frequent in women, and alcohol more common in men. Iatrogenic causes include endoscopic retrograde cholangiopancreatography (ERCP) and drugs (for example, azathioprine, frusemide (furosemide), and salicylates) [1].

Hypertriglyceridaemia, hypercalcaemia, hypothermia, and pancreatic neoplasia are less common causes, as are viral infections and hereditary acute pancreatitis.

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In more than 80% of patients, acute pancreatitis is mild and resolves without serious morbidity, but in up to 20% it can be severe and complicated by major morbidity and mortality [2].

Acute pancreatitis is a disease which has a wide range of clinical presentation which includes mild symptoms needing conservative treatment and a severe form requiring a more aggressive approach to treat the disease as it can progress to multiple organ failure rapidly. Obstruction by gallstones has been recognized as the most common cause of acute pancreatitis, while other causes such as alcohol, trauma and idiopathic causes are also responsible for this condition [3].

The disease is clinically classified into mild and severe acute pancreatitis. The mild form has no associated complications such as abscess formation, necrosis, hypocalcemia while the severe form is commonly associated with these complications resulting in multi organ failure. Elevated levels of pancreatic enzymes remain the key to diagnosing acute pancreatitis however, a normal level does not rule out a person having the disease either [4].

A raised level of serum amylase activity, at least three times the upper limit of normal, supports the diagnosis of acute pancreatitis. Its activity rises quickly within the first 12 hours after the onset of symptoms and returns to normal within three to five days. Serum amylase activities may be normal in 19–32% of cases at the time of hospital admission, as a result of delayed

presentation or exocrine pancreatic insufficiency for example, secondary to chronic alcohol abuse [5].
Hypertriglyceridaemia competitively interferes with the amylase assay and can produce falsely low results, although this is variable and can be modulated by the use of lipid clearing agents. Conversely, serum amylase activities can be increased in other intra-abdominal inflammatory conditions and salivary gland pathologies, and also where there is decreased renal clearance because of renal impairment or macroamylasaemia[6].

MATERIALS AND METHODS

This cross sectional study was conducted in Department of Biochemistry Avicenna Medical College, Lahore with the collaboration of University of Lahore during June 2019 to December 2019.

Inclusion criteria

- All the patients diagnosed with acute pancreatitis.
- Age 18 to 60 years.
- All those patients who are willing to participate in the study.

Exclusion criteria

- Pregnant women.
- All those patients whose enzymes level were increased due to any other abnormality.

Data Collection: After taking permission from ethical committee of hospital, data was collected from 100 patients of acute pancreatitis. The serum amylase level was measured in all diagnosed patients. Demographic values and history of all the selected patients were collected. All the patients with moderately raised serum amylase and lipase levels or symptoms pointing towards acute pancreatitis were subjected to further investigations, only the diagnosed cases were included in the study.

Statistical Analysis: We will use SPSS version 21.0 for the analysis of data. The whole statistical analysis will plan with a 5% significance level and 80% statistical power.

RESULTS

The data was collected from 100 patients of acute pancreatitis. The mean age was 55.67 ± 5.55 years. There were 57 female and 43 male patients.

Table No.1: Serum amylase activity in selected patients

Serum amylase activity				
		Normal	Moderate	High levels
Gender	Female	25 (59.52%)	25 (50%)	7(87.5%)
	Male	17 (40.47%)	25 (50%)	1(12.5%)
		42	50	8

The value of serum amylase was found to be normal in 42 patients (59.52% female; 40.47% male), while mildly elevated in 50 patients (50% male; 50% female). Serum amylase was found to be raised three times the normal value in 33.33% of the patients who were diagnosed as having acute pancreatitis. The sensitivity of serum amylase in recognizing acute pancreatitis was found to be 33%, in both the genders.

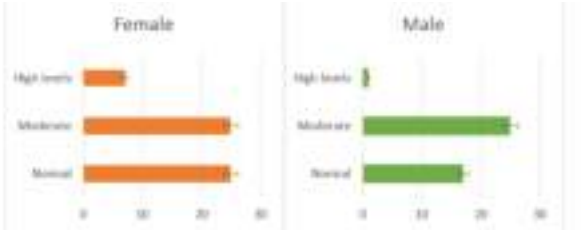

Figure No.1: Comparison of Male and Female patients according to serum anaylase levels.

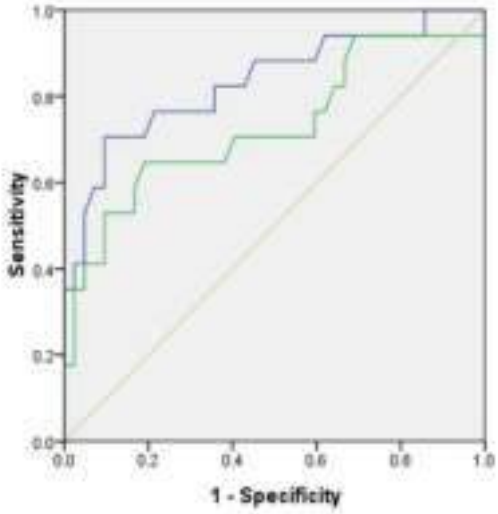

Figure No.2: ROC curve showing the specificity and sensitivity of serum amylase in acute pancreatitis patients

DISCUSSION

Both amylase and lipase are released from acinar cells during acute pancreatitis, and their concentration in the serum is used to confirm diagnosis. Be that as it may, the determination of pancreatitis ought to not exclusively be founded on the self-assertive estimation of three or multiple times more noteworthy than typical of pancreatic catalysts, however deciphered along with the clinical introduction. Amylase levels for the most part ascend inside a couple of hours after the beginning of indications and recover to ordinary qualities inside 3–5 days, as it has a more limited half-life than lipase. Nonetheless, amylase levels may stay inside ordinary reach in 19% of patients conceded with intense pancreatitis [7]. Intense pancreatitis is unexpected irritation of the pancreas, which can prompt harm of the heart, lungs, and kidneys and cause them to fizzle.

Intense pancreatitis normally shows as upper stomach torment emanating to the back. In any case, there are a few possible reasons for upper stomach torment. It is imperative to decide whether somebody with stomach torment has intense pancreatitis or another sickness to begin suitable therapy [8]. Blood tests like serum amylase and serum lipase, just as pee tests, for example, urinary trypsinogen-2 and urinary amylase, can be utilized to decide whether somebody with stomach torment has intense pancreatitis. It is generally the situation that a patient is considered to have intense pancreatitis just when amylase or lipase levels are multiple times the maximum furthest reaches of ordinary [9]. With respect to urinary trypsinogen-2, a degree of in excess of 50 ng/mL of trypsinogen-2 in the pee is viewed as a sign of intense pancreatitis. As to urinary amylase, there is no clear-cut level past which somebody with stomach torment is considered to have intense pancreatitis [10].

As opposed to serum amylase, serum lipase fixation is viewed as a more important analytic apparatus, in light of the fact that unusually raised qualities continue for a more extended span, which is a benefit in patients with a postponed introduction [11]. What's more, serum lipase is more touchy as far as identifying the presence of intense liquor incited pancreatitis. The current investigation showed that raised lipase levels were seen in 95–100% of patients relying upon etiology [12]. Seven (22%) extra patients were determined to have intense liquor incited pancreatitis dependent on raised lipase levels with a related typical amylase level [13]. Besides, the current UK and Japanese rules for the administration of intense pancreatitis have accentuated the more noteworthy demonstrative exactness of serum lipase contrasted with amylase [14].

CONCLUSION

It is concluded that that serum amylase has a lower sensitivity and misses the diagnosis of about two thirds of the diagnosis. Hence it is a poor screening test and health care providers should not rely solely on it and order more sensitive tests.

Author's Contribution:

Concept & Design of Study:	Yasir Ali Bhatti
Drafting:	Sadia Zia
Data Analysis:	Ali Iftikhar, Hamna Naeem Butt
Revisiting Critically:	Yasir Ali Bhatti, Sadia Zia
Final Approval of version:	Yasir Ali Bhatti

Conflict of Interest: The study has no conflict of interest to declare by any author.

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the diagnosis of acute pancreatitis. Hepato-gastroenterol 2002;49:1130–4.

Analysis of Known Risk Factors for Bladder Cancer in Pakistan

Muhammad Haroon Ghous[1], Nadeem Bin Nusrat[4], Sikander Afzal[2], Shahid Mahmud Malik[3] and Mahwish Arooj[1]

ABSTRACT

Objective: The main objective of the study is to find the known risk factors of bladder cancer in Pakistani population.

Study Design: Cross-sectional study

Place and Duration of Study: This study was conducted at the conducted in Department of Urology, University College of Medicine, University of Lahore is one year from June 2019 to June 2020.

Materials and Methods: Hospital records of patients under the age of 40 years who underwent urinary bladder carcinoma operations were included in this study.

Results: One hundred eighty patients under 40 years of age (87 females, 93 males; range 17-49 years; mean 40.4 ± 3.2 years) were included in this study. When the total population of 180 patients under age 40 is considered, the distribution of bladder cancer within age categories is as follows: under age 30 years, 8 patients (4%); age 30-39 years, 46 patients (26%); age 40-49 years, 126 (70%).

Conclusion: It is concluded that the Smoking, in particular cigarette smoking, is a well-known risk factor for various diseases including bladder cancer. The impacts of other sort of smoking (stogie, pipe, Egyptian waterpipe, smokeless tobacco and natural tobacco smoking) have been researched uniquely in a couple of studies.

Key Words:

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INTRODUCTION

Bladder cancer is the tenth most basic cancer around the world, with the most noteworthy rates revealed in Europe, North America and Australia, and representing an expected 261 000 new cases analyzed and 115 000 passings every year; by correlation, generally low rates are found in the Far Eastern nations[1]. In Europe, bladder cancer is the fifth most ordinarily analyzed cancer type and the ninth driving reason for cancer mortality. It influences men more oftentimes than ladies. Ordinary of strong tumors, bladder cancer frequency increments with age. Tumors of the bladder seldom happen before the age of 40 – 50, emerging most usually in the seventh decade of life. The middle ages at conclusion are 69 years for men and 71 for ladies[2].

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Histologically, most instances of bladder cancer are temporary cell carcinomas (90 %); 70 % of these are shallow and papillary subtypes. The more uncommon sorts are squamous cell carcinoma (3 - 5 %); adenocarcinoma (0.5 to 2 %); little cell carcinoma (under 0.5 %); and sarcoma, carcinosarcoma/ sarcomatoid tumors, paraganglioma, melanoma and lymphoma (under 0.1 %). Haematuria, i.e., successive pee and agony during pee, are the most well-known side effects of bladder cancer[3].

Smoking is the main danger factor for bladder cancer. Smokers are in any event multiple times as prone to get bladder cancer as non-smokers. Smoking causes about portion of all bladder cancers in the two people[4]. Arsenic in drinking water has been connected with a higher danger of bladder cancer in certain pieces of the world. The possibility of being presented to arsenic relies upon where you reside and whether you get your water from a well or from a public water framework that satisfies the guidelines for low arsenic content. For most Americans, drinking water is certainly not a significant wellspring of arsenic[5].

MATERIALS AND METHODS

This cross sectional study was conducted in Department of Urology, University College of Medicine, University of Lahore. Hospital records of patients under the age of 40 years who underwent urinary bladder carcinoma operations were included in this study. Specifically, the following documents where reviewed; admission notes,

operative notes, discharge summaries, endoscopy records, and pathology reports. The main study variables included: demographics, presenting symptoms leading to diagnosis, family history of bladder carcinoma, tumor location, type of surgical resection, stage and differentiation of disease, and post-operative complications. Patients with inflammatory bowel disease or known polyposis syndromes such as familial adenomatous polyposis syndrome, Final diagnosis was established after histopathological examination of biopsied tissue.

Statistical Analysis: Statistical methods for comparing stage and tumor distribution between the under age 40 years and the 50 and over years groups included a 2-proportion *Z* test.

RESULTS

One hundred eighty patients under 40 years of age (87 females, 93 males; range 17-49 years; mean 40.4 ± 3.2 years) were included in this study. When the total population of 180 patients under age 40 is considered, the distribution of bladder cancer within age categories is as follows: under age 30 years, 8 patients (4%); age 30-39 years, 46 patients (26%); age 40-49 years, 126 (70%). Of note, 30% of the patients were younger than 40 years of age. One hundred and seventy patients (94%) reported symptoms upon presentation.

Table No.1: Patients' presenting signs and symptoms of bladder cancer *n* (%)

Clinical presentation	Patients
Rectal bleeding	99 (57)
Anemia	19 (11)
Abdominal pain	54 (31)
Bladder pain	7 (4)
Change in bowel habits	37 (21)
Weight loss	20 (11)
Bowel obstruction	16 (9)
Perforation	5 (3)
Perforated diverticulitis	1 (0.6)
Screening	5 (3)
Unknown	7 (4)

Table No.2: Environmental factors for Urinary bladder cancer

Factors	N	% age
Occupational Factors		
Textile works	37 (21)	30%
Patrol pump works	47 (26)	40%
Sui gas works	70 (39)	27%
Paint works	26 (14)	3%
Leather works	88 (22)	38%
Rubber work	143 (36)	37%
Plastic work	135 (34)	19%
Dyeing work	26 (7)	6%
Non- Occupational		
Smoking	47 (7)	40%
Drinking water quality	12 (3)	9%

DISCUSSION

Smoking is a notable danger factor of ongoing lung illness, coronary illness and different kinds of disease including bladder malignancy. A few epidemiological investigations and audits depict the effect of cigarette, stogie, pipe and natural tobacco smoking[6,7].

Cigarette smoking is the essential danger factor for bladder disease. In a new meta-examination of 43 distributed case-control and associate investigations, Zeegers et al. inferred that current cigarette smokers have an around triple higher danger of bladder malignant growth than non-smokers[9]. In a consolidated examination of 11 case-control concentrates from six European nations, hazard for bladder disease expanded with length of smoking (number of years smoked) and force of smoking (number of cigarettes smoked each day)[8]. The age-and sex changed rundown chances proportions for current and previous cigarette smokers contrasted and those for non-smokers were 3.33 (95 % certainty span (CI), 2.63 – 4.21) and 1.98 (95 % CI 1.72 – 2.29), individually. The Netherlands Cohort Study the associations between cigarette smoking and bladder malignancy hazards were concentrated in detail. Zeegers et al. discovered that the tar and nicotine substance of cigarettes, and channel tip use were just feebly connected with bladder malignant growth hazard. Disease of the urinary bladder has an overall danger related with tobacco utilization of 3.0; the general danger for pancreas malignancy related with tobacco use is 2.0 – 4.0[9].

The relationship of ecological tobacco smoking has been researched distinctly in a couple of studies. Kabat et al. detailed data from a populace based US case control study where no huge danger of bladder malignancy in either sex was seen when looking at 84 non-smoking cases and 266 medical clinic controls[10]. In an enormous Japanese planned investigation, no huge expanded danger was seen in the spouse related with the husband's smoking. A populace based case-control study was directed in Canada. Hazard of bladder malignant growth was not expanded according to natural tobacco smoking openness at home or at work[10].

CONCLUSION

It is concluded that the Smoking, in particular cigarette smoking, is a well-known risk factor for various diseases including bladder cancer. The impacts of other sort of smoking (stogie, pipe, Egyptian waterpipe, smokeless tobacco and natural tobacco smoking) have been researched uniquely in a couple of studies. The exact component of smoking-prompted bladder malignant growth still can't seem to be resolved.

Author's Contribution:

Concept & Design of Study: Muhammad Haroon Ghous

Drafting:	Nadeem Bin Nusrat, Sikander Afzal
Data Analysis:	Shahid Mahmud Malik, Mahwish Arooj
Revisiting Critically:	Muhammad Haroon Ghous, Nadeem Bin Nusrat
Final Approval of version:	Muhammad Haroon Ghous

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Analysis of Liver Histology and Severity of Metabolic Syndrome in Patients Suffering from Nonalcoholic Fatty Liver Disease

Muhammad Awais Saleh[1], Amad Ul Haq Bhatti[2] and Ali Javaid Chughtai[3]

ABSTRACT

Objective: The basic aim of the study is to find the analysis of liver histology and severity of metabolic syndrome in patients suffering from nonalcoholic fatty liver disease.
Study Design: Comparative study
Place and Duration of Study: This study was conducted at the Allama Iqbal Memorial Teaching Hospital, Sialkot during October 2019 to May 2020.
Materials and Methods: This is a comparison analysis in which we explored specific relationships between hepatic histology and markers of the metabolic syndrome. There were total 50 patients that included in this study. The diagnosis was based on the histological presence of macrovesicularsteatosis, with or without lobular inflammation, hepatocellular degeneration, or fibrosis.
Results: In this study the data was collected from 50 patients with biopsy-proven NAFLD, a relationship between the severity of the metabolic syndrome and NAFLD was observed. While proportions of biopsy correlated with hepatic steatosis, hepatic inflammation and fibrosis were related with the presence and seriousness of the metabolic syndrome. This finding has clinical ramifications, since hepatic ultrasound and serum transaminases have restricted utility in foreseeing hepatic inflammation and fibrosis and there is current dependence on liver biopsies to affirm the analysis and show anticipation.
Conclusion: It is concluded that NAFLD is associated with a high prevalence of obesity. There was a trend towards an association between NASH and metabolic syndrome, in addition, patients with NAFLD with MetS were more likely to have severe steatosis and portal inflammation on liver biopsy.

Key Words: Liver, Metabolic, Syndrome, Obesity, Disease

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INTRODUCTION

Non-alcoholic fatty liver disease (NAFLD) is the most common liver disease since its prevalence is estimated to be 20-30% in general population of Western countries. NAFLD occurs as a histological spectrum of disease and includes the subtypes of simple steatosis and nonalcoholic steatohepatitis (NASH)[1].

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It was thought to be a benign condition but is now increasingly recognized as a major cause of liver-related morbidity and mortality[2]. The metabolic syndrome is a clustering of risk factors that greatly increases an individual's probability for developing atherosclerotic cardiovascular disease (ASCVD), type 2 diabetes mellitus and chronic kidney disease[3]. The predominant underlying risk factors appear to be abdominal obesity, atherogenicdyslipidaemia, hypertension, elevated plasma glucose, a prothrombotic state, and a proinflammatory state [4].

Non-alcoholic fatty liver disease (NAFLD) is now considered a hepatic component of metabolic syndrome (MS) because of the close association between the two conditions. Prevalence of metabolic risk factors including diabetes mellitus, obesity, etc. is rapidly increasing which is consequently increasing the prevalence of NAFLD in Asia [5]. Patients with NAFLD are at risk not only for the liver-related morbidity and mortality but also for the increased cardiovascular

disease risk and increased incidence of diabetes mellitus on long-term follow-up[6].

NAFLD is strongly associated with obesity, metabolic syndrome (MetS), and cardiovascular risk factors and is more common in obese patients. Nonetheless, a smaller, but significant, proportion of patients develop NAFLD despite having a relatively normal body mass index (BMI) [7]. This condition is often referred to as lean or non-obese NAFLD. Traditionally considered a condition unique in Asia, NAFLD has also been found in 10% of lean Americans in the National Health and Nutrition Examination Survey III[8]. Severity, factors associated with advanced disease, and prognosis of non-obese NAFLD are not well understood. A recent international study reported that non-obese NAFLD patients might have more-severe histological necro-inflammation and higher mortality than obese patients. Other smaller studies reported mixed results on the disease severity [9].

MATERIALS AND METHODS

This study was conducted at Allama Iqbal Memorial Teaching Hospital, Sialkot during October 2019 to May 2020. This is a comparison analysis in which we explored specific relationships between hepatic histology and markers of the metabolic syndrome i.e LDL, HDL, Cholesterol and TG. There were total 50 patients that included in this study. The diagnosis was based on the histological presence of macrovesicular-steatosis, lobular inflammation (with or without), hepatocellular degeneration and fibrosis.

Inclusion Criteria: All the patients who done the biopsy of liver and clinically proven were included in this study.

Exclusion Criteria: All patients having any major surgery, pregnant women and any other metabolic diseases were excluded from this study.

Data Collection: All subjects were negative for viral hepatitis and they also had normal values for copper and iron. All subjects expended <14 standard drinks of alcohol every week. Nine male subjects and eight female subjects had prior sort 2 diabetes, five dealt with their diabetes with diet alone, and 12 were taking metformin. Each subject and their particular control was given a score of 1 for each element of the metabolic syndrome, for a most extreme score of 5, with a score of ≥3 being indicative of the metabolic syndrome

Biochemical Analysis: A pathologist blinded to subject details scored liver biopsies, allotting a score from 0 to 4 for inflammation, steatosis, and fibrosis as previously described. For additional fibrosis assessment, all biopsies were stained with Masson's Trichrome, percent fibrosis was calculated in triplicate by microscopy and image analysis and data were expressed as mean percentages.

Statistical Analysis: The data of the different baseline variable was analyzed on SPSS 11 packages. Data of 50 patients was expressed as mean and SD. Significance was set at 0.05.

RESULTS

In this study the data was collected from 50 patients with biopsy-demonstrated NAFLD, a connection between the seriousness of the metabolic syndrome and NAFLD was watched. While proportions of adiposity correlated with hepatic steatosis, hepatic inflammation and fibrosis were related with the presence and seriousness of the metabolic syndrome. This finding has clinical ramifications, since hepatic ultrasound and serum transaminases have restricted utility in foreseeing hepatic inflammation and fibrosis and there is current dependence on liver biopsies to affirm the analysis and show anticipation. We propose that highlights of the metabolic syndrome would potentially be a superior guide in figuring out which patients ought to be considered for biopsy as well as likely explicit treatment. We collect all the lab values of selected patients.

Table No.1: Laboratory value differences between NAFLD participants with and without metabolic syndrome

Laboratory values	Mean±SD	p Value*
Triglycerides (mg/dL)	185.1±103.6	<0.001
Cholesterol, total (mg/dL)	196.8±42.3	0.86
Cholesterol, HDL (mg/dL)	41.2±10.2	<0.001
Cholesterol, LDL (mg/dL)	121.2±35.3	0.66
Cholesterol, HDL/LDL	37.0±15.6	<0.001
Fasting glucose (mg/dL)	96.6±14.6	<0.001
Fasting insulin (μU/mL)	27.2±31.4	<0.001
Fasting C peptide (mg/dL)	4.6±1.6	<0.001
HOMA-IR (mg/dL×μU/mL/405)	6.5±7.4	<0.001
HbA1c (%)	5.6±0.5	0.04
Alanine aminotransferase (U/L)	77.6±47.9	0.47
Aspartate aminotransferase (U/L)	53.6±34.4	0.69
Alkaline phosphatase (U/L)	85.1±32.8	0.43
γ-Glutamyltransferase (U/L)	60.3±39.6	0.15
Albumin (g/dL)	4.17±0.39	0.04
Serum iron (μg/dL)	90.5±31.1	0.006
Serum ferritin (ng/mL)	236.3±265.4	0.27
Transferrin saturation (%)	25.6±10.4	0.008
Albumin (g/dL)	4.17±0.39	0.04

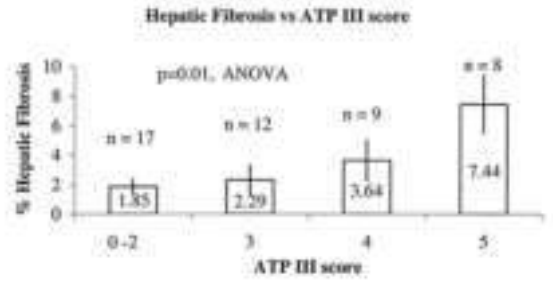

Figure No.1: Features of the metabolic syndrome compared with the degree of hepatic fibrosis

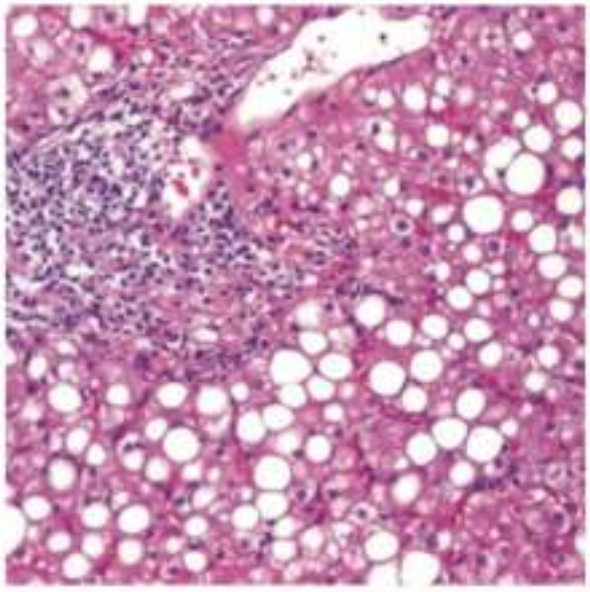

Figure No.2: Histological analysis of liver suffering from NAFLD

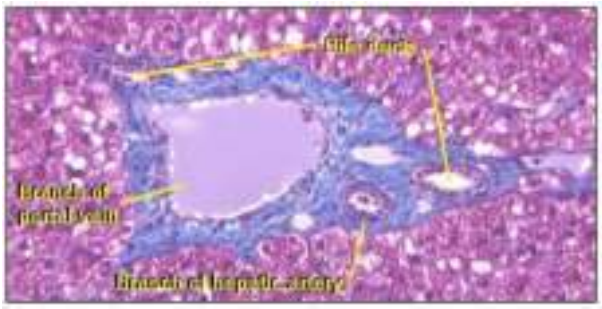

Figure No.3: In the section of equine liver below (Masson's trichrome stain), the capsule and septae are stained blue, while hepatocytes are magenta. Notice how the capsule extends as a septum into the liver about one-third of the way from left, immediately below a large capsular blood vessel

DISCUSSION

In this cross-sectional study of 50 patients with biopsy-proven NAFLD, a relationship between the severity of the metabolic syndrome and NAFLD was observed. While measures of adiposity correlated with hepatic steatosis, hepatic inflammation and fibrosis were associated with the presence and severity of the metabolic syndrome. This finding has clinical implications, since hepatic ultrasound and serum transaminases have limited utility in predicting hepatic inflammation and fibrosis, and there is current reliance on liver biopsies to confirm the diagnosis and indicate prognosis[10-11]. We suggest that features of the metabolic syndrome would potentially be a better guide in determining which patients should be considered for biopsy and/or potential specific therapy[12].

Recent studies have pointed that NAFLD, in its whole spectrum ranging from pure fatty liver to non-alcoholic steatohepatitis (NASH), might represent another feature of MS[13]. Pathophysiologic considerations, clinical associations, and laboratory investigations support that insulin resistance and hyperinsulinaemia have a central role in pathogenesis of both MS and non-alcoholic fatty liver. Studies concluded that NAFLD, in the presence of normoglycaemia and normal or moderately increased body weight, is characterized by clinical and laboratory data similar to those found in diabetes and obesity such as impaired insulin sensitivity and abnormalities in lipid metabolism[14]. Ninty percent of individuals with NAFLD have at least one risk factor of MS, and 33% have all the features of MS. Study concluded that liver fat content is significantly increased in subjects with the MS as compared with those without the syndrome, independently of age, gender, and body mass index[15]. In 304 NAFLD patients without diabetes mellitus the prevalence of metabolic syndrome increased from 18% in normal weight individuals to 67% in obese individuals[16]. The presence of multiple metabolic disorders such as diabetes mellitus, obesity, dyslipidaemia[17] and hypertension is associated with a potentially progressive, severe liver disease[18]. Obesity is found in 30-100% of subjects with NAFLD[19]. In obese persons steatosis is 4.6 fold higher than in normal weight persons[20].

CONCLUSION

It is concluded that there was a trend towards an association between NASH and MetS; in addition, patients with NAFLD with MetS were more likely to have severe steatosis and portal inflammation on liver biopsy. Systematic histological evaluation, full consideration of clinical and laboratory parameters, and good communications with hepatologists are crucial for making an accurate diagnosis of NAFLD and all other medical liver diseases.

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Infection Control Practices among Dental Practitioner in a Public Sector Tertiary Care Hospital During Second Wave of Covid-19 Pandemic in Karachi, Pakistan

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ABSTRACT

Objective: To determine the infection control practices among dental practitioner in a public sector tertiary care hospital during a second wave of COVID-19 pandemic in Karachi, Pakistan.

Study Design: Cross-sectional study

Place and Duration of Study: This study was conducted at the Jinnah Sindh Medical University (JSMU) and Jinnah Postgraduate Medical Center (JPMC) from December 2020 to February 2021.

Materials and Methods: An online survey was conducted and a self-prepared questionnaire was disseminated in closed social media group of the two institutes. The questionnaire included following components; consent form, patients screening, use of personal protective equipment (PPE), hand hygiene practices, environmental cleaning, injection safety precautions. Practices were considered as acceptable if the score was ≥80% of the total questionnaire score based on Bloom's threshold.

Results: Most of the participants were house officers (64.4%) and responded from JSMU (61.4%) and. The highest frequency for acceptable infection control measures was observed for injection safety precautions (96.2%) followed by hand hygiene (86.4%), use of PPE (77.3%), patient screening (58.3%) and environmental cleaning (56.1%). On individual items, poor practice was observed for ventilation system in clinics (38.6%), hand washing before wearing gloves (43.2%), use of N-95 masks or powered air-purifying respirators, disinfecting the clinical contact surfaces (54.5%) and covering surfaces that cannot be cleaned (67.4%).

Conclusion: Infection control practices were unsatisfactory in terms of COVID-19 patient triaging and screening, use of N-95 masks during aerosol procedures and disinfection of surrounding objects after attending the patient

Key Words: COVID-19, infection control, dental practitioner, second wave, public sector hospital, Karachi, Pakistan

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INTRODUCTION

The COVID-19 outbreak was instigated in December 2019 in Wuhan, the city of China, as a pneumonia of unknown cause that rapidly spread around the world. The outbreak was sixth public health emergency of international concern which was declared as pandemic by World Health Organization (WHO) on March 11, 2020.

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The government of Pakistan officially announced the second wave COVID-19 on October 28, 2020 . Earlier the virus was M-164 but during the second wave, a mutated form of virus was observed i.e. 614-G. The protein based substance in initial strain was replaced with glycine that transformed the virus into more infectious and communicable form .

The achievement of preventing the virus spread varied from country wise depending on their prevention approach and their healthcare systems . Worldwide, governments and healthcare organizations are collaboratively doing battle against COVID-19 with implementation of newly designed guidelines recommended by Center for Disease Control and Prevention (CDC) and other global agencies (6). The Government of Pakistan also promptly adopted the

prevention guidelines and recommendations put forward by WHO and CDC to safe the healthcare soldiers.

As a result of dental procedures, a cloud of aerosol generates rendering the dental clinics areas the highly contagious for healthcare workers and visiting patients . It is a fact that public healthcare system in Pakistan is comparatively weaker and showed a slow response to combat in situation of COVID-19 pandemic. However, a cross-sectional nationwide survey conducted in Pakistan during first wave of COVID-19 reported that ≥80% participants were sanitizing/ washing their hands before and after attending patients, taking history of COVID-19 symptoms, ensuring that patients and visitors are wearing masks and using face shields and eye protectors whereas less than 80% reported that they were not using N-95 masks and pre-procedural mouthwash and did not install physical barriers . According to another survey conducted all over the Pakistan during first wave of COVID-19, 66.89% survey respondents said they were taking patients' temperature in their dental clinics.

In the beginning of the pandemic, the fear and anxiety of being infected with virus was also at the peak due to which dental practitioners were maintaining good hygiene practices as indicated in the previously published literature. However, surveillance is an ongoing process and pandemic has not been over yet. Hence it is of very immense importance to determine how dental practitioners are taking infection control measures when they have already learnt to survive in the situation of pandemic. Therefore, we conducted the current study to determine the infection control practices among dental practitioner in a public sector tertiary care hospital during a second wave of COVID-19 pandemic in Karachi, Pakistan.

MATERIALS AND METHODS

An online cross-sectional survey was conducted in Jinnah Sindh Medical University (JSMU) and Jinnah Postgraduate Medical Center (JPMC), Karachi, Pakistan during December 2020 to February 2021 with the approval from Institutional Review Board (IRB #JSMU/IRB/2021-401) in writing. The Google Docs link of the questionnaire was shared on closed social media group of JSMU and JPMC. The study included clinical demonstrators, residents and dental house officers. The consent to participate in a survey was taken online. Sample size was estimated using online available Rao soft sample calculator assuming 50% response distribution, a confidence interval of 95% and taking total population of 200 dental practitioners in both the institutes. The calculated sample size was 132 responses. The survey link was deactivated when 132 complete responses were received.

The questionnaire was constructed in accordance with the CDC guidelines. The first component was demographics including age, gender, designation, working experience. The second part of the questionnaire assessed the infection control practices with total 18 questions to explore practices related to COVID-19. Questions were related to patient screening and triage, use of PPEs, hand hygiene practices, standard injection safety precautions and environmental cleaning and disinfection. All the questions had binary responses either yes or no and a score of 1 was assigned to correct practice. Scoring was done for all 18 items together and for each sub-components. Practices were categorized as satisfactory practices using a Bloom's threshold of ≥80% score .

The data was entered and analyze in IBM SPSS version 21. Descriptive statistics was computed in terms of frequencies with percentages for categorical values, Median with inter-quartile range (IQR) was computed to summarize numerical variables.

RESULTS

The median age of the study participants was 25 (IQR=24 – 27.75) years and majority of them were females (n=103, 78%). More than half of the study participants were house officers (n=85, 64.4%) whereas some of them were residents (n=27, 20.8%) and clinical demonstrators (n=20, 15.1%). Majority of the study participants were working in JSMU (n=81, 61.4%).

Table 1 depicts the responses against every item of the survey. Nearly 50% responded that they were not screening patients for COVID-19 and there was no particular workflow. Around 50% reported that they do not wash their hands before wearing hand gloves. Among all the measures of PPE, the lowest compliance was observed for use N-95 masks or powered air-purifying respirators (PAPRs). Regarding the injection safety measures, highest compliance was observed for discarding for single use devices, keeping the needles or sharp-pointed instruments away from the body followed by avoiding aerosol generating procedures as possible and use of one hand scoop technique for capping used needles. When asked about the environment related safety measures, nearly 40% participants reported for proper ventilation system in their clinics whereas nearly half of them were disinfecting the contact surfaces before attending the new patient into the clinic. More than half of them also said that they covered the surfaces with some barrier that can't be cleaned.

Figure 1 represents, the overall infection control practices for all the components of the questionnaire. The highest acceptable practices were observed for injection related safety measures followed by hand hygiene practices, use of PPE, patients' screening and triage for COVID-19 infection and disinfection of patients' contact surfaces.

Table No.1: Survey participants' response distribution for each survey items

Survey items	Yes n(%)	No n(%)
Patient screening and triaging		
Does your dental setting have a work plan (workflow) for COVID-19 patient screening and dental management?	77(58.3)	55(41.7)
Hand washing practices		
Do you wash your hands before putting on gloves?	57(43.2)	75(56.8)
Do you wash your hands immediately after removing gloves?	111(84.1)	21(15.1)
Do you wash your hand after bare handed touch of instruments or equipment?	126(95.5)	6(4.5)
Do you wash your hands with alcohol or soap for at least 20 seconds when they are visibly soiled with blood?	132(100)	0(0)
Use of personal protective equipment		
Do you wear surgical mask strictly in clinics and outside the clinics?	126(95.5)	6(4.5)
Do you wear either lab coats or sterilized scrub dresses in clinics?	122(92.4)	10(7.6)
Do you change mask when it is wet?	123(93.18)	9(6.8)
Do you remove the gloves if they are torn or puncture?	129(97.7)	3(2.3)
During aerosol generating procedures do you use an N95 respirator or a powered air-purifying respirators (PAPRs)?	40(30.3)	92(69.7)
Do you change your surgical mask when you go out of clinical area?	105(79.5)	27(20.5)
Standard injection safety precautions		
Do you use one hand scoop technique for capping used needle?	111(84.1)	21(15.9)
The direction of needle/probe or sharp instrument is always away from you?	131(99.2)	1(0.8)
Do you discard the single use devices after using once?	131(99.2)	1(0.8)
Do you avoid aerosol generating procedures whenever possible, including the use of high-speed dental handpieces, air/water syringe, and ultrasonic scalers?	126(95.5)	6(4.5)
Environmental cleaning and disinfection		
Is your dental OPD properly ventilated or does it has HEPA filtration unit?	51(38.6)	81(61.4)
Clinical contact surfaces disinfected after every patient?	72(54.5)	60(45.5)
The surfaces which cannot be cleaned properly are covered with surface barrier?	89(67.4)	43(32.6)

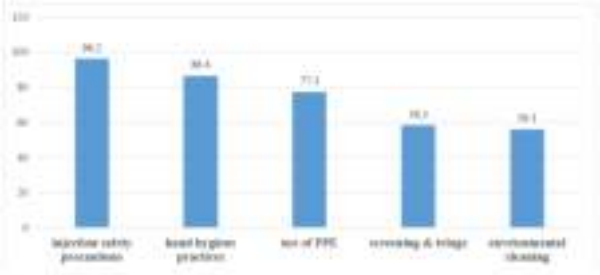

Figure No.1: Frequency of acceptable infection control practices for different domains

DISCUSSION

In compliance to the WHO guidelines, a triage area must be established with dental clinics as a routine procedure to observe patients' temperature . A study from China reported that 88% of COVID-19 patients present are febrile with temperature of more than 37.5 degrees . However, it is quite upsetting to disclose that around 41.7% of the participants reported that there was no proper arrangement in their clinics for screening of COVID-19 patients. A similar survey from Nepal also reported that 69% survey participants were taking body temperature whereas 90% of these study participants were inquired about travel history . Hands are a critical vector for microorganism transmission. The cross-transmission of these organisms happens if hands are not washed effectively. Globally the most effective and low cost prevention against COVID-19 infection is hand hygiene with alcohol rub. In the present study, around half participants (56.8%) were not washing their hands before putting gloves which is quite alarming. 84.1% and 95.5% of participants were washing their hands after removing gloves and after working with instruments respectively. A survey from Lebanon

reported 98.9% were using alcohol hand rub or soap for hands before and after attending patients. .

Healthcare workers around the world are continuously in a combat state against COVID-19 with high risk of virus transmission for those involved in the aerosol-generating procedure (AGP), such as noninvasive ventilation (NIV), high flow nasal cannula (HFNC), and endotracheal intubation. In present survey, almost all of the participants were wearing surgical mask (95.5%), lab coats or scrub gowns (92.4%), changing their face mask on becoming wet (93.2%), changing their punctured gloves (97.7%). However, it was alarming that only 30.3% were using N-95 mask or powered air purifier respirators during AGPs. In the perception of 73.5% dental practitioners, dental treatment should be provided with using PPEs including goggles, gloves and particulate respirators, this was reported in another Pakistani survey that investigated knowledge, attitude and practices in dentistry regarding COVID-19 .

CDC infection control guidelines, indicates that dental impressions are potential sources of cross-contamination and should be handled in a manner that prevents exposure to practitioners, patients, and the environment . In our survey, 99.2% of the participants reported that they discard the single use devices. 99.2% said that direction of needle is always from them. 84.1% reported that they use one hand scoop technique for capping used needles. In a precise way we can conclude that dental practitioner, the part of the current study, were performing up to the mark practices regarding instrument handling.

According to the WHO guidance for infection control in health-care settings, natural ventilation is widely used and accepted as "among the effective environmental measures to reduce the risk of infections transmission in health-care settings". In the present study, 61.4% participants said that there is no ventilation system in their out-patient units. The possible reason for the low compliance could be fact that the study was conducted in a public sector institute where the desired infrastructure to maintain the required ventilation system in clinics is a crucial task due to high turnover of the patients and lack of necessary facilities in terms of manpower and equipment to cope-up the situation. Nearly half of the participants (54.5%) said that clinical surfaces are being disinfected after every patient and 67.5% said that surface barrier was applied where surfaces cannot be cleaned properly. The compliance rate for disinfecting the patient's chair and other things was higher in dental clinics of Lebanon.

The current study depicts the infection control measures for a single public sector institute. A multi-center survey is recommended to conduct to have generalized insights regarding the infection control practices among dental practitioners in public sector institutes.

CONCLUSION

Infection control practices were unsatisfactory in terms of COVID-19 patient triaging and screening, use of N-95 masks during aerosol procedures and disinfection of surrounding objects after attending the patients.

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Frequency of Obesity among Patients of Rheumatoid Arthritis

Maria Abid[1], Gulandam[2], Kaleemullah Kakar[2], Mohammed Atif Gulzar[2] and Sara Jafar[2]

ABSTRACT

Objective: The aim of this study was to determine the frequency of obesity in rheumatoid arthritis patients of Quetta and evaluate the associated risk factors.
Study Design: Prospective, Cross-Sectional Study
Place and Duration of Study: This study was conducted at the outpatient department (OPD) of Internal medicine in Sandeman Provincial Hospital, Quetta from October 2015 to May 2016.
Materials and Methods: Patients of both genders, of age 30 years or more, diagnosed with rheumatoid arthritis for at least 12 months were included. Their socio-demographic characteristics and body mass index (BMI) was determined. Data was entered and analyzed using SPSS v. 20.0.
Results: There were 103 patients of RA with mean duration of disease 15.6 ± 0.6 months. There were more females than males (79% vs. 21%). Their mean age was 48.1 ± 7.7 years. BMI ≥30 kg/m^2 was seen in 56 (54.4%) patients. Obesity in RA was statistically associated with female gender, older age, and lower socio-economic status ($p \leq 0.05$).
Conclusion: More than half of our RA patients were obese. Obesity was associated with RA in female gender, older age, and lower socio-economic status.

Key Words: rheumatoid arthritis, obesity, body mass index, gender, Pakistan

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INTRODUCTION

Rheumatoid arthritis (RA) is an autoimmune systemic disease. It comprises of underlying synovial inflammation and resultant destruction of the bone and cartilage. It has a global prevalence of 1-2%. For every one man, three women are affected by RA [1]. There is symmetric inflammation of synovial tissue of hand, feet, and wrist joints. It may also involve non-articular structures including tendons, fascia, and ligaments. It has a higher risk of co-morbid cardiovascular complications, lung diseases, and neoplasia [2].
Systemic inflammation is also greatly contributed by obesity and high body mass index (BMI). Proinflammatoryadipokines are secreted by fat tissue which increased expansion of adipose tissues and this positive feedback is a vicious cycle of tissue inflammation and secretion of adipokines [3].

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In a large cohort, it was observed that obese patients had higher C-reactive protein (CRP), tumor necrosis factor (TNF)-α, amyloid A levels, white blood cells (WBCs), and interleukin-6 (IL-6) in comparison to controls with body weight-to-height ratio [4].
The pathogenesis of RA is not clear; both genetic and environmental factors play a crucial role[1]. Previously, literature has shown evidence of an association between high BMI and increased risk of development of RA[5–7]. On the other hand, some literature has shown little to no association between the two entities[8,9]. The Quantitative Standard Monitoring of Patients with Rheumatoid Arthritis (QUEST-RA) trial concluded a significant association of high BMI and obesity with RA in women but not in men [10]. Similar results were also seen in a local study [11]. The aim of this study was to determine the frequency of obesity in rheumatoid arthritis patients of Quetta and evaluate the associated risk factors.

MATERIALS AND METHODS

A prospective, cross-sectional study was conducted in the outpatient department (OPD) of Internal medicine in Sandeman Provincial Hospital, Quetta. The study duration was from 3rd October 2015 to 15th May 2016. The study was conducted after approval from institutional review board. All patients were included after attaining informed consent.
Patients of both genders, of age 30 years or more, diagnosed with rheumatoid arthritis for at least 12 months were included. Patients with clinical suspicion

of osteoarthritis – involvement of distal interphalangeal joints– were excluded. Non-probability consecutive sampling technique was utilized and all patients fulfilling the inclusion criteria during the study period were included.

All patients of rheumatoid arthritis satisfied at least 4 of these 6 criteria (criteria 1 to 4 must have been present for ≥6 weeks):

1. **Morning stiffness:** Lasting ≥1 hour before maximal improvement.
2. **Arthritis (swelling) of 3 or more joint areas:** 14 possible areas are right or left proximal interphalangeal (PIP), metacarpophalangeal (MCP), wrist, elbow, knee, ankle, and metatarsal phalangeal (MTP) joints
3. **Arthritis (swelling) of hands:** At least 1 involve area in a wrist, MCP, or PIP
4. **Symmetric arthritis**
5. **Rheumatoid nodules:** Presence of subcutaneous nodules over bony prominences or extensor surfaces.
6. **Positive serum rheumatoid factor**

For all patients, weight and height were measured within the OPD. In order to record patient information, a semi-structured questionnaire was constructed. It included sociodemographic characteristics and BMI. BMI was calculated by dividing weight (kg) by the square of height (m). BMI ≥30 kg/m^2 was taken as "high" in this study.

The data was entered and analyzed with the help of statistical package for social sciences version 20 (SPSS v. 20.0). Demographic data will be presented as simple descriptive statistics giving mean and standard deviation for age and duration of disease.

For qualitative variables like gender, marital status, socioeconomic status, and BMI were presented as frequency and percentages. Effect modifiers were controlled through stratification of age, gender, marital status and socioeconomic status to the effect of these on high BMI. Chi square test was applied; p ≤0.05 was taken as significant.

RESULTS

There were 103 patients of RA included in this study. The mean duration of disease for these patients was 15.6 ± 0.6 months. There were more females than males (79% vs. 21%). Their mean age was 48.1 ± 7.7 years. Their socio-demographic characteristics are shown in table 1.

Of all the patients, 56 (54.4%) had BMI ≥30 kg/m^2. BMI was stratified with patient characteristics as shown in table 2. Although, overall RA was more common in women, high BMI in RA was statistically associated with female gender. Oldest group of study participants were more prone to have high BMI and similar was the case with lower socio-economic status participants (Table 2).

Table No.1: Baselines characteristics of the patients (N=103)

Patient Characteristics	Frequency n (%)
Gender	
Male	22 (21.4%)
Female	81 (78.6%)
Age in years	
Mean ± SD	48.1 ±7.7
31-40	24 (23.3%)
41-50	34 (33.0%)
51-60	45 (43.7%)
Marital status	
Single	3 (2.9%)
Married	100 (97.1%)
Socio-economic status	
Lower class	52 (50.5%)
Middle class	31 (30.1%)
Upper class	20 (19.4%)

Table No.2: Correlation of body mass index with patient characteristics (N=103)

Patient characteristics	Body Mass Index ≥30 kg/m^2		P value
	Yes (N=56; 54.4%)	No(N=47; 45.6%)	
Gender			
Female	49 (87.5%)	32 (68.1%)	0.017
Male	7 (12.5%)	15 (31.9%)	
Age in years			
31-40	4 (10.3%)	20 (31.3%)	0.003
41-50	10 (25.6%)	24 (37.5%)	
51-60	25 (64.1%)	20 (31.3%)	
Marital status			
Single	54 (96.4%)	46 (97.9%)	0.664
Married	2 (3.6%)	1 (2.1%)	
Socio-economic status			
Lower class	24 (42.6%)	28 (59.6%)	0.009
Middle class	15 (26.8%)	16 (34.0%)	
Upper class	17 (30.4%)	3 (6.4%)	

DISCUSSION

Over the years, the prevalence of obesity is on a constant rise. In this study among the rheumatoid arthritis patients, 55% were morbidly obese with BMI ≥30 kg/m^2. Among obese patients, 88% were women, 64% were of age 51-60 years, and 43% were of lower economic class. Chronic and morbid obesity is an important risk factor for RA. It is responsible for 54% of the recent rise in RA incidence [5].

In a large prospective cohort, the risk of RA increased by 1.37 times in 40-70% overweight and obese women [3]. In the QUEST-RA trial, RA women who were overweight and obese had higher disease activity scores (DAS) as compared to normal weight women and men with parallel BMIs [10]. In a larger German cohort, 21-23% RA patients were overweight to obese [12]. In a local study from Peshawar, 36% RA were obese (BMI ≥27 kg/m^2). The odds ratio (OR) for obesity in RA

females was 2.7 (p=0.008) [11]. RA has an overall lesser incidence in men; hence, the impact of obesity in RA is also lesser in men as compared to women [5]. Results from Danish National Patient Registry showed that the overall risk of RA increased by 10% for every 5% increase in total body fat and 5% for every 5cm increased in waist circumference for women. The risk was 50% greater in obese women as compared to normal BMI women. No such correlations were seen for men [13]. The relationship of female gender with obesity in RA is not clear as yet. RA, in general, is also more common in women.

In our study, old age RA patients were more likely to be obese. However, in a large cohort, women who were overweight and obese at 18 years of age had a higher risk of RA as compared to older women[3]. In an analysis from United States, among old arthritis patients (≥65 years) 29.4% were obese in 2009 and 34.3% were obese in 2014. The relative obesity increase was statistically significant over time (p=0.001). They concluded that obesity significantly increased over time among their older adults with arthritis [14].

Comorbid obesity in RA patients has gained much attention because it has negative impacts on the prognosis and outcome the disease. In a large multi-center cohort, overweight and obese RA patients were 25% and 47% less likely to attain sustained remission in three years, respectively, as compared to patients with normal BMI [15]. Other negative impacts of obesity on RA patients include worsened DAS, raised inflammatory markers, tender joints, and worse patient global evaluation, physical function, and pain scores [16]. Obesity itself is a disastrous systemic condition. It not only increases the risk of RA but also worsens its outcome and prognosis. Maintaining a body weight higher than the normal range of BMI increases the risk of developing RA and in women who have already developed it, it plays a negative role in disease outcome and drug response.

CONCLUSION

More than half of our RA patients were obese. Obesity was associated with RA in female gender, older age, and lower socio-economic status. High risk groups which includes obese RA women should be recognized by public health experts and must be professionally helped in reducing their weight to counter the negative effects of obesity on disease outcome and drug response.

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A Comparative Study of IV Fentanyl versus IV Paracetamol for Pain Relief in Postoperatively After Cardiac Surgery

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ABSTRACT

Objective: To compare the efficacy of IV acetaminophen and IV fentanyl for pain reduction after cardiac surgery.
Study Design: Randomized Controlled Trial study.
Place and Duration of Study: This study was conducted at the Department of Anesthesia, Nishtar Hospital Multan, and Shaikh Zaid Hospital Rahim Yar Khan, from March, 2019 to February, 2021.
Materials and Methods: Total 76 patients underwent cardiac surgery requiring general anesthesia. A Visual Analog Scale (VAS) on 0-10 scales was used for assessment of pain. The scores for pain assessment were given as 0 for no pain, 1-4 for mild, 5-7 for moderate and 8-10 for severe pain. Patient's pain score was recorded by the same author that recorded the intraoperative observations, after 5, 15, and 30 minutes after surgical procedure. If the score on the numerical rating score was greater than 3, rescue analgesia fentanyl 25 µg was administered in increments. Total dose of fentanyl used was also recorded. SPSS version 23 was used for data analysis. Numerical variables like age and VAS score were analyzed and presented as mean and SD. Categorical variables like age were presented as frequency and percentages. Tests of significance student's t-test and chi square test were applied to see association among variables. P value ≤ 0.05 was considered as significant.
Results: Mean pain score was 1.66 ± 0.74 and 2.16 ± 0.88 in fentanyl and paracetamol groups, respectively, and the difference was statistically significant (p =0.010). QoR score was 14.63 ± 1.34 and 15.34 ± 1.38 in fentanyl and paracetamol groups, respectively, and the difference was of statistical significance (p =0.026). Nausea was reported by 36.8 % patients of the fentanyl group and 26.3 % of the paracetamol group, however, the difference was not statistically significant (p = 0.324). Vomiting was reported by 34.2 % patients of the fentanyl group and 13.2 % of the paracetamol group, and the difference was statistically significant (p = 0.031). Complaint of dry mouth was present in 52.6 % patients of the fentanyl group and 28.9 % of the paracetamol group, and the observed difference was of statistical significance (p = 0.036).
Conclusion: It can be concluded from the results of our study that, IV paracetamol was not associated with significant pain reduction as compared to IV fentanyl however it was safer in terms of dry mouth and vomiting.

Key Words: Fentanyl, Paracetamol, Intravenous, Postoperative, Cardiac Surgery, Pain score, adverse effects, Efficacy

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INTRODUCTION

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One of the most common surgical procedures performed all over the world is cardiac surgical procedure. Persistent incisional pain in 10 to 50% patients were reported while one third of patients experienced moderate to severe intensity of persistent pain that lead to reduced quality of life [1,2]. Nerve injury along with tissue injury causes persistent incisional pain that is secondary to the surgical dissection and deleterious aspects in association to the healing process. Nociceptive pathway present in the central nervous system (CNS) is activated due to continuous pain signals that lead to incites and make of sensitization in central nervous system. [3,4]. Acetaminophen is a well-known justified non-opioid analgesic [5]. Since the approval of an intravenous (IV) formulation from Food and Drug Administration (FDA) the use of drug has

been increased as a part of perioperative multimodal analgesia. Evaluation of IV acetaminophen has been done in recent studies after large-scale analysis of randomized controlled trials. Patients, in which acetaminophen was administered, had better acute pain control which, in turn, was the strongest predictor for improved patient satisfaction. In some of the published studies, it was reported that after cardiac surgery use of acetaminophen showed reduction in acute postoperative pain scores and opioid consumption by 25-35% and 40-50%, respectively [6]. For persistent incisional pain, poorly controlled acute postoperative pain acts as a strong predictor. [7] However there are some other mechanisms by which acetaminophen reduce the development of persistent incisional pain. Mechanism of pain reduction of acetaminophen is very complex and number of central pathways also involve. Acetaminophen act by inhibiting the prostaglandins through the COX pathway, it also activates cannabinoid CB1 receptors and inhibits nitric oxide pathways [8,9]. Acetaminophen also acts peripherally by decreasing release of prostaglandin E2 release at surgical area [10]. Number of mechanisms involve to peripheral as well as central sensitization and origin of persistent pain. A useful medicine Acetaminophen is very active and efficacious in reduction of post-operative pain that hinders the many pathways involved in acute and chronic pain. Thus there are few evidences that lead to believe that administration of perioperative acetaminophen may reduce pain due to cardiac surgery incision. Our study is a comparative study, between efficacy of IV acetaminophen and IV fentanyl for pain reduction after cardiac surgery.

MATERIALS AND METHODS

The departmental research and hospital Ethical Review Committee Department of Anesthesia, Nishtar Hospital Multan, and Shaikh Zaid Hospital Rahim Yar Khan, from March 1, 2019 to February 28, 2021 approved the study and then written informed consent was taken from all the patients. Patients underwent cardiac surgery requiring general anesthesia, had age greater than 18 and ASA status I and II were included in the study. WHO sample size calculator was used for calculation of sample size and statistics were taken from the reference study by Turan et al. [11]. Patients hypersensitive to the study drugs, obese, airway difficulties, inadequate fasting, or liver problems were excluded from the study. Patients were informed the purpose of study and numerical rating scale by a senior surgeon of day care center. Sealed envelope technique, prepared by computer generated randomization table, was used for dividing the patients into two distinctive groups. The scores for pain assessment were given as 0 for no pain, 1-4 for mild, 5-7 for moderate and 8-10 for severe pain. Before 30 minutes of procedure oral midazolam 7.5 mg was administered to all the patients in the ward as premedication. Before the surgery, IV paracetamol (15 mg/kg) was administered in the preoperative area (before 15 min) Group P and Group F received IV fentanyl 2 µg/kg at induction of anesthesia while the method for general anesthesia was similar in both the groups. Patients were oxygenated for three minutes and monitored for vitals (non-invasive blood pressure), pulse oximetry and electrocardiogram. For induction of anesthesia the 2 mg/kg of IV propofol was used and was maintained by isoflurane 1.5% in oxygen and nitrous oxide (40:60). After unconsciousness endotracheal tube (ETT) was inserted. NIBP (including systolic and diastolic mean blood pressures, pulse oximetry, heart rate, end-tidal CO2) and respiratory rate were monitored and recorded. After every three minutes one of procedure the author of study observed these readings until the end of process. Increased heart rate, blood pressure and respiratory rate more than 20% of baseline indicated poor pain control during the surgery and was regarded as pre-induction time. Fentanyl was administered as rescue analgesia in the increments of 25 µg in intraoperative period for both groups. After completion of the surgery the patients were allowed to return to consciousness and on verbal command the ETT was removed and patients then were transferred to the recovery room. Patient's pain score was recorded by the same author that recorded the intraoperative observations, after 5, 15, and 30 minutes after surgical procedure. If the score on the numerical rating score was greater than 3, rescue analgesia fentanyl 25 µg was administered in increments. Total dose of fentanyl used was also recorded.

SPSS version 23 was used for data analysis. Numerical variables like age and VAS score were analyzed and presented as mean and SD. Categorical variables like age were presented as frequency and percentages. Tests of significance student's t-test and chi square test were applied to see association among variables. P value $\leq$ 0.05 was considered as significant.

RESULTS

Mean age of all the patients in fentanyl group was 34.89 ± 8.92 years while of those in paracetamol group was 37.89 ± 9.95 years, with no statistically significant difference (p = 0.171). Fentanyl group consisted of 18 males and 20 females, while paracetamol group consisted of 22 males and 16 females (p = 0.358). Table-I

Mean pain score was 1.66 ± 0.74 and 2.16 ± 0.88 in fentanyl and paracetamol group, respectively statistically significant difference was observed (p =0.010). QoR score was 14.63 ± 1.34 and 15.34 ± 1.38 in fentanyl and paracetamol groups, respectively, and the difference was of statistical significance (p =0.026). Nausea was reported by 36.8 % patients of the fentanyl group and 26.3 % of the paracetamol group, however, the difference was not statistically significant (p =

0.324). Vomiting was reported by 34.2 % patients of the fentanyl group and 13.2 % of the paracetamol group, this difference is also significant statistically (p = 0.031). Complaint of dry mouth was present in 52.6 % patients of the fentanyl group and 28.9 % of the paracetamol group, and the observed difference was of statistical significance (p = 0.036). Table-II.

Table No.1: Baseline data

Variable	Fentanyl (N = 38)	Paracetamol (N = 38)	p-value
Age, years	34.89 ± 8.92	37.89 ± 9.95	0.171
Gender, M / F	18/20	22/16	0.358

Data is entered as mean ± standard deviation or number

Table No.2: Outcome Data

Variable	Fentanyl (N = 38)	Paracetamol (N = 38)	p-value
Pain score	1.66 ± 0.74	2.16 ± 0.88	0.010
QoR score	14.63 ± 1.34	15.34 ± 1.38	0.026
Nausea	14 (36.8 %)	10 (26.3 %)	0.324
Vomiting	13 (34.2 %)	05 (13.2 %)	0.031
Dry mouth	20 (52.6 %)	11 (28.9 %)	0.036

Data is entered as mean ± standard deviation or number (percentage)

DISCUSSION

The most commonly used drugs for resolution of postoperative pain are short acting narcotic agents as these drugs are very potent analgesics but are associated with certain side effects which beg the need for the use of safer and equally potent analgesics such as IV paracetamol [12,13]. The results of our study suggest that even though use of IV paracetamol was associated with significantly lower incidence side effects such as dry mouth and vomiting, overall efficacy of this analgesic in cardiac surgery patients is statistically lower as compared to IV fentanyl. In the past very few studies have been done to compare IV paracetamol with IV fentanyl after cardiac surgery. In a study by Turan et al. they compared IV paracetamol with placebo and the results they reported are in contrast to the results of our study. They reported that IV paracetamol was of similar efficacy to the opioid consumption and but was not superior at 30 and 90 days follow up [11]. Choiniere et al [14] however reported high incidence and prevalence of pain in patients who underwent cardiac surgery. Koyuncu et al [15] reported in their study that in women who underwent abdominal hysterectomies IV paracetamol was associated with reduced pain postoperatively as compared to the placebo. The main difference between the studies of Koyuncu et al. and the current study is that the abdominal hysterectomies are less invasive, involving no bone and therefore heal better as compared to cardiac surgeries which can account for the contrasting results of the both studies.

Studies in the past have demonstrated that postoperative pain is most commonly associated with incisional pain but progression of this acute pain to chronic pain is blocked by administration of optimum analgesia. In recent study the authors demonstrated that even though IV paracetamol does influence acute post-operative pain, it is not sufficient and potent enough to block the progression of acute pain to chronic pain [11]. In a previous randomized controlled trial which was a double blind study, the authors studied the comparison of IV morphine with IV paracetamol in United Kingdom in patients with acute limb trauma presenting to the emergency department. The results showed no significant difference between the two treatment modalities in terms of pain relief, however they did report higher incidence of side effects among patients who were given IV morphine [16].

In another randomized controlled trial IV paracetamol was compared with IV morphine in 84 patients of knee arthroscopy [17]. The results showed that two treatment modalities had no significant difference in terms of the outcome variables i.e. pain score and patient satisfaction however the adverse effects such as vomiting, nausea and dizziness were reported more in morphine group patients.

In a study by Sinatra et al. [18] IV paracetamol was compared with the placebo in patients who underwent major orthopedic surgery and the results showed IV paracetamol to be an effective, tolerable and potent analgesic when administered over the period of 24 hours. Similarly, many studies compared IV paracetamol to oral ibuprofen [19] as well as its role as opioid sparing agent [20] after different surgeries and found that it can prove to be an effective agent for pain relief in major surgeries. However, our study gave different results to the most of the past studies and thus in order to establish IV paracetamol as an effective replacement to opioids, further studies with larger sample size is required.

CONCLUSION

It can be concluded from the results of our study that, IV paracetamol was not associated with significant pain reduction as compared to IV fentanyl however it was safer in terms of dry mouth and vomiting.

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Errors in Use of Metered Dose Inhalers in Asthma

Ghazala Khalid[1], Usman Nasir[2], Rabea Nasir[3], Rashid Siddique[4], Tahir Butt[2] and Akmal Khurshid Bhatti[2]

ABSTRACT

Objective: To determine the Errors in use of metered dose inhalers in Asthma
Study Design: Analytic interventional study
Place and Duration of Study: This study was conducted at the Idris teaching hospital Sialkot during Jan 2019 to Nov 2020.
Materials and Methods: Four Hundred consecutive patients coming to the out patient department with diagnoses of Asthma or COPD who has ever been prescribed meter dose inhalers of any of drugs beta 2 Agonists, Steroids Ipratropiun and Cromolyn in the pass were asked to demonstrate their technique and common errors were observed. The written informed consent every patient was taken before inclusion in the study. The Ethical Committee permission was taken before collecting the data and get publishing in Medical Journal. The findings were analyzed for results by SPSS version twenty.
Results: The incidence of error was maximum 308(77%) in error no 5 and minimum 3(075%) error no 7. Percentage of Patients trainable after 4 weeks was maximum 304(76.19%) at age group 11-20 years and minimum 214(53.6%) at age group 51-60 years. Incidence of 26 Trainable 25 smoker after 4week was in 32 male and it was 28trainabale 8smokers after 4weeks was in 54 female. Incidence of 36Trainable 48 smoker after 4week was in 64 male and it was 43trainabale 14smokers after 4weeks was in 80 female. Incidence of 20Trainable 20 smokers after 4week was in 32 male and it was 46 trainable 3smokers after 4weeks was in 48 female. Incidence of 24 Trainable 32 smokers after 4week was in 50 male and it was 8 trainable 1smokers after 4weeks was in 14 female. Incidence of 11 Trainable 12 smokers after 4week was in 17 male and it was 5 trainable 0smokers after 4weeks was in 9 female. Incidence of Non-trainable patients in 4 male and 9 female at age group 41-50 years was maximum 13 and was minimum 1male and 1female at age group 11-20 years was 2.
Conclusion: Incorrect inhaler use in sick persons with asthma and Chronic Obstructed Pulmonary Disease is unaccepted high outside clinical methods and does not seen to have betterment over the last forty years. This may be a major hindrance for obtaining good asthma control.

Key Words: Errors, Meter dose, Asthma, COPD

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INTRODUCTION

Recent clinical evidence shows that although modern inhaled treatment for asthma has the power to control disease in most sick persons.[1,2] Control is often not gained in practice.[3,4]

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Problems with technique were known shortly after the begin of pressurized metered-dose inhalers in the nineteen hundred sixty[5] and later result showed that the issues present in spite of involved initial to reduce them.[6-11] Initial effort to betterment the position have added regular training programs for sick persons and health-care people written instructional material, videos, and software; and methods and tools to make inhalation easier, such as the development of a breath-actuated Metered Dose Inhaler and an Metered Dose Inhaler with inhalation chamber and the design of various dry powder inhalers that require an easier inhalation methods.

We examined articles published between nineteen hundred seventy five and twenty thousand fourteen in which inhaler methods taught by sick persons with asthma and Chronic Obstructive Pulmonary Disease was measured by trained watcher who classified the errors according to established suggestions and then measured the overall methods as correct, acceptable, or poor. We also recorded the most common errors noted

for each inhaler type. Finally, we divided this forty year period into early and late periods of use and compared the outcome variety to look for time style.

MATERIALS AND METHODS

Four Hundred consecutive patients coming to the out patient department with diagnoses of Asthma or COPD who has ever been prescribed meter dose inhalers of any of drugs beta 2 Agonists, Steroids Ipratropiun and Cromolyn in the pass were asked to demonstrate their technique and common errors were observed. The written informed consent every patient was taken before inclusion in the study. The Ethical Committee permission was taken before collecting the data and get publishing in Medical Journal. The findings were analyzed for results by SPSS version twenty.

RESULTS

Table No. 1: Percentage of errors observed in study Population

Errors	Cases	Percentage %
1	116	29.2%
2	83	20.75%
3	270	67.5%
4	216	54%
5	308	77%
6	219	54.75%
7	3	0.75%

The incidence of error was maximum 308(77%) in error no 5 and minimum 3(075%) error no 7 as shown in table no 1.

Table No. 2: Percentage of Patients trainable after 4 weeks

Sr. No.	Age group (years)	Cases	Percentage
1	51-60	214	53.6%
2	41-50	235	58.9%
3	31-40	262	65.7%
4	21-30	272	68.08%
5	11-20	304	76.19%

Percentage of Patients trainable after 4 weeks was maximum 304(76.19%) at age group 11-20 years and minimum 214(53.6%) at age group 51-60 years as shown in table no 2.

Table No. 3: Trainable smoker's distribution (Age Group 51-60 years) n=86

Sex	No. of natient	Smokers	Commonest error	Last common	Trainable after 4weeks
Male	32	25	3,4	6,7	26
female	54	8	1,3,5	7	28

Incidence of 26 Trainable 25 smoker after 4week was in 32 male and it was 28trainabale 8smokers after 4weeks was in 54 female as shown in table no 3.

Tale No. 4: Trainable smoker's distribution (Age Group 41-50 years) n=144

Sex	No. of patient	Smokers	Commonest error	Last common error	Trainable after 4weeks
Male	64	48	6	1,7	36
female	80	16	3,6	7	43

Incidence of 36Trainable 48 smoker after 4week was in 64 male and it was 43trainabale 14smokers after 4weeks was in 80 female as shown in table no 4.

Tale No. 5: Trainable smoker's distribution (Age Group 31-40 years) n=80

Sex	No. of patient	Smokers	Commonest error	Last common error	Trainable after 4weeks
Male	32	20	5	2,7	20
female	48	3	5	7	46

Incidence of 20Trainable 20 smokers after 4week was in 32 male and it was 46 trainable 3smokers after 4weeks was in 48 female as shown in table no 5.

Tale No. 6: Trainable smoker's distribution (Age Group 21-30 years) n=64

Sex	No. of patient	Smokers	Commonest error	Last common error	Trainable after 4weeks
Male	50	32	4	7	24
female	14	1	3,4	7	8

Incidence of 24 Trainable 32 smokers after 4week was in 50 male and it was 8 trainable 1smokers after 4weeks was in 14 female as shown in table no 6.

Tale No. 7: Trainable smoker's distribution (Age Group 11-20 years) n=26

Sex	No. of patient	Smokers	Commonest error	Last common error	Trainable after 4weeks
Male	17	12	4	7	11
female	9	0	3	7	5

Incidence of 11 Trainable 12 smokers after 4week was in 17 male and it was 5 trainable 0smokers after 4weeks was in 9 female as shown in table no 7.

Tale No. 8: Patients declared non-trainable

Age Group	Non-trainable patients	Male	Female
51-60 years	9	2	7
41-50 years	13	4	9
31-40 years	8	2	6
21-30 years	4	1	3
11-20 years	2	1	1

Incidence of Non-trainable patients in 4 male and 9 female at age group 41-50 years was maximum 13 and was minimum 1male and 1female at age group 11-20 years was 2 as shown in table no 8.

DISCUSSION

The Inhaler Meter dose had the highest errors (> forty percent for steps two to five). The lower limits of the 95% CIs for errors with this device indicate that even a conservative assessment of the prevalence's would be high. The incidence measure of Dose Per Inhaler errors were somewhat lower, but the preparation, full expired and breath-hold methods still had lower limits of the ninety five percent CIs ≥ twenty five percent. Second, we noted no sign that the issue of incorrect or quality use had decreased over the last forty years, even though reasonable effort has been done in education, training, and procedure development. The marked variety in the people, material and method, types of errors measured, and data reported of the research we found discourage us from undertaking extensive meta-analyses of the data; however, we believe that the findings of persistently high error rates are strong and clinically important.[3,6,9,10]

The noted marked difference in design of study, samples of population, measurements and outcomes calls for a widely accepted agreement on how and what to study of this important characteristic of real-life use of inhaler treatment in a happen in the future life-threating disease. The insufficiency of used information in many articles led to the excluding of more than sixty nine point two percent (three hundred twenty four out of four hundred sixty eight) of the single articles. The combined issues of difference and state of being diverse in character limited our analysis to rough types. If we do not standard our methods for studying procedure, and cannot note sick persons' inhaler use properly, it will continue to be difficult to improve the position in the future.[18,19,20]

CONCLUSION

Incorrect inhaler use in sick persons with asthma and Chronic Obstructed Pulmonary Disease is unaccepted high outside clinical methods and does not seen to have betterment over the last forty years. This may be a major hindrance for obtaining good asthma control.

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Role of Antibiotics in Raised Serum Prostate Specific Antigen (PSA) Level in KPK

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ABSTRACT

Objective: To study the Role of antibiotics in raised serum prostate specific antigen (PSA) Level in Pakistan.
Study Design: Prospective study
Place and Duration of Study: This study was conducted at the Urology Department Ayub Teaching Hospital Abbottabad, Idris Teaching Hospital Sialkot during Feb, 2019 to Feb, 2020.
Materials and Methods: Total 100 male patients with serum PSA level between 4ng/ml to 10ng/ml were enrolled in this study. Patient ages were 50 to 80 years. Detailed history including Diabetes Mellitus & hypertension, physical examination including height (m2) weight (kg) blood pressure, fasting & random blood sugar readings & digital rectal examination (DRE) will be performed after taking informed written consent. Patients will positive transrectal Ultrasonography (TRUS) guided biopsy for carcinoma prostate & patients with urinary retention assessed on Ultrasonography (having more than 400ml urine in the bladder) and need catheterization to relieve the urinary retention were excluded. Urine was collected for routine examination, culture & sensitivity (C/S) after prostatic massage. The sample for serum prostate serum antigen (PSA) was collected before digital rectal examination (DRE) and was analyzed by enzyme-linked immune sorbent assay (ELISA) technique. Tablet ciprofloxacin 500 mg I per oral at interval of 12 hours was given for four weeks. Serum prostate serum antigen (PSA) was repeated after completion of four weeks of antibiotic therapy.
Statistics software SPSS-16 was used for data analysis. Mean & standard deviation was computed for quantitative variable i.e. age and serum PSA level pre and post treatment. Mean change in PSA level after the treatment was described in terms of percentage also. Paired samples T test was applied to see the statistic significance of any difference between pre and post treatment PSA levels. Outcome variable .i.e. change in PSA was stratified among age to know the effect modification.
Results: One hundred patients presenting with mild Lower urinary tract symptoms (LUTS) and prostate serum antigen (PSA) level between 4-10 ng/ml took part in the study. After a 4 week antibiotic administration serum PSA level were re-assessed. Mean standard deviation, minimum and maximum values of the variables i.e. age, International Prostate Symptom Score (IPSS), pre and post treatment PSA levels, as well as change in PSA after the treatment presented in the table no 1
Mean change in serum PSA level after the treatment was 3.82 which show a 46.58% improvement. Paired samples t test was used to identify the significance of any difference between the pre and post treatment serum PSA levels. P-value =0.001 i.e. showing a statistically significant difference after the treatment as shown in table no 2
39 (39%) patients had their post treatment (Rx) PSA improved in the range of 1-3 whereas 61(61%) patients had an improvement in PSA in the range of 4-7 after the treatment.
Conclusion: Antibiotic treatment is clinically beneficial in patients with high prostate serum antigen levels. Prostate serum antigen reduction or normalization after medical treatment, either antibiotic and/or non steroid anti inflammatory drugs, for ≥2 weeks can avoid unnecessary prostate treatment. Antibiotic treatment is more beneficial when the prostate serum antigen level is <20 ng/mL, especially when the evidence for inflammation is not overt.

Key Words: Antibiotics, Serum, Prostate Specific Antigen (PSA)

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INTRODUCTION

In routine, some expert in urology often Write antibiotics before prostate specimen taken to male with a newly increased prostate serum antigen to decrease inflammation-induced prostate serum antigen raised and help to reduce unnecessary treatment.

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However, others have noted that antibiotic treatment has no significant effect on the prostate serum antigen level and that a lowered level of prostate serum antigen after antibiotic treatment does not mean a decreased danger of prostate cancer[1].

Prostate treatment is a potentially unhealthy procedure. Inflammation of Prostate is commonly reported on needle specimen taken & sixty five percent to seventy percent of sick persons with abnormal prostate serum antigen levels do not have cancer on prostate needle specimen taken. After a two-year clinical and biochemical follow-up of symptomatic male who had a high prostate serum antigen level and a normal direct recording electronic, and normal repeat prostate serum antigen level, Prostate treatment can be safely avoided[2].

In the present observational we aimed to address the controversy of whether antibiotic treatment can exclude inflammation in the differential diagnosis of prostate serum antigen raised and thus can avoid unnecessary Prostate treatment. We considered sick persons with LUTS, normal direct recording electronic and normal urine analysis, and elevated prostate serum antigen levels.[3]

MATERIALS AND METHODS

This prospective case series study will be carried out for 6 months in Urology Department Ayub teaching Hospital Abbottabad and Idris Teaching Hospital Sialkot. Total 100 male patients with serum PSA level between 4ng/ml to 10ng/ml were enrolled in this study. Patient ages were 50 to 80 years. Detailed history including Diabetes Mellitus & hypertension, physical examination including height (m2) weight (kg) blood pressure, fasting & random blood sugar readings & digital rectal examination (DRE) will be performed after taking informed written consent. Patients will positive transrectal Ultrasonography (TRUS) guided biopsy for carcinoma prostate & patients with urinary retention assessed on Ultrasonography (having more than 400ml urine in the bladder) and need catheterization to relieve the urinary retention were excluded.

Urine will be collected for routine examination, culture & sensitivity (C/S) after prostatic massage. The sample for serum PSA will be collected before digital rectal examination (DRE) and will be analyzed by ELISA technique. Tablet ciprofloxacin 500 mg I per oral at interval of 12 hours will be given for four weeks. Serum PSA will be repeated after completion of four weeks of antibiotic therapy.

Statistics software SPSS-16 will be used for data analysis. Mean & standard deviation will be computed for quantitative variable i.e. age and serum PSA level pre and post treatment. mean change in PSA level after the treatment will be described in terms of percentage also. Paired samples t0test will be applied to see the statistic significance of any difference between pre and post treatment PSA levels. Outcome variable .i.e. change in PSA will be stratified among age to know the effect modification**.**

Inclusion criteria: All the sick persons on antibiotic therapy in sick persons with high prostate serum antigen levels.

Exclusion criteria: All the sick persons with high prostate serum antigen levels without written antibiotic therapy.

Data extraction and analysis: The objectives were to study the effectiveness and safety of using antibiotic therapy in prostate serum antigen reduction resulting in the avoidance of unnecessary prostate treatment. The variables extracted from each study were: patient demographics, antibiotic type, antibiotic duration, non Steroidal anti-inflammatory drug use with antibiotic or not, prostate serum antigen reduction level after antibiotic therapy, and rate of prostate treatment after antibiotic treatment.

RESULTS

One hundred patients presenting with mild Lower urinary tract symptoms (LUTS) and serum prostate serum antigen (PSA) level between 4-10 ng/ml took part in the study. After a 4 week antibiotic administration serum PSA level were re-assessed. Mean standard deviation, minimum and maximum values of the variables i.e. age, IPSS, pre and post treatment PSA levels, as well as change in PSA after the treatment presented in the table no 1.

Table No.1: Age & Characteristics distribution Role of antibiotics in raised serum prostate specific antigen (PSA) Level in Pakistan

Characterizes	Frequency No.	%age
Age		
51 to 70 years	55	55
71 to 80 years	45	45
Co-morbidities		
Obesity	56	56
Hypertension	59	59
Diabetes Mellitus	52	52

Table No.2: Mean, standard deviation, minimum and maximum values of the variables; age, IPSS, pre treatment (Rx PSA), PSA, Post treatment (Rx PSA) PSA, and Change in PSA

	Min.	Max.	Mean	Std. Deviation
Age	56	80	68.98	8.213
IPSS	4	7	5.84	.861
Pre Rx PSA	5	10	8.20	1.589
Post Rx PSA	2	7	4.39	1.127
Change in PSA	1	7	3.82	1.306

Mean change in serum PSA level after the treatment was 3.82 which show a 46.58% improvement. Paired samples t test was used to identify the significance of any difference between the pre and post treatment serum PSA levels. P-value =0.001 i.e. showing a statistically significant difference after the treatment as shown in table no 2

39 (39%) patients had their post treatment (Rx) PSA improved in the range of 1-3 whereas 61(61%) patients had an improvement in PSA in the range of 4-7 after the treatment

DISCUSSION

Although there is disagreement surrounding the value of antibiotics in reducing higher prostate serum antigen levels, some expert of urology in routine often prescribe antibiotics before prostate treatment to male with a newly increased prostate serum antigen level. Prostate serum antigen level reduction after antibiotics might identify those patients in whom prostate treatment can be avoided.

Some researchers have found that antibiotic treatment can decrease inflammation-induced prostate serum antigen raised and help to reduce unnecessary prostate treatment. Conversely, others have noted that antibiotic treatment has no significant effect on the prostate serum antigen level, and a lowered prostate serum antigen level after antibiotic treatment does not mean a decreased risk of prostate tumor[1].

The antibiotic can be written for two to four weeks[8] or six to eight weeks[4,7]. The type of antibiotic used is based on local reactivates and quinolones are the most frequently used type.

The observation for inflammation should be noted before giving antibiotic treatment in sick persons with high prostate serum antigen levels. The proof of inflammation can be delineated via earnings per share[7], symptoms of acute or chronic inflammation of prostate[4,7,9,17], and observation of the degree of inflammation after prostate surgery[9].

The prostate serum antigen level in focus for antibiotic treatment ranges from four to ten ng/mL. Some studies founded prostate serum antigen levels <four ng/mL[6,17], whilst others founded levels >ten ng/mL[9,16]. In sick persons with prostate serum antigen levels higher than the threshold value, definitive treatment should be not postponed for primary antibiotic treatment.

After use of antibiotic treatment, the prostate serum antigen level was normal by a mostly of percentages, ranging from sixteen percent to fifty nine percent[6–8,10]. Furthermore, the range of the prostate serum antigen level decrease was Seventeen to eighty percent[4,13,15,17] or a less than twenty percent decrease from baseline[17].

The f/t prostate serum antigen ratio rather than prostate serum antigen appears to be more helpful in suggesting prostate tumor in cases taking antibiotic treatment for high prostate serum antigen levels[12].

Prostate treatment should be considered without giving antibiotic treatment in sick persons with high prostate serum antigen values, if a suspicion of inflammation of prostate does not exist[17].

The rate of tumor detection after receiving antibiotic treatment varied from two percent to twenty nine percent[4,6,7,10–13,17].

Carcinoma was found in forty to fifty two percent of sick persons who did not have a prostate serum antigen decrease. Conversely, a detection rate of seven point seven to twenty point three percent was found in sick persons who had a prostate serum antigen decrease in comparison with the pre-treatment values[10,17].

In the literature of pathological results after antibiotic treatment, prostate tumor was evident in only twenty point nine percent to twenty five point five percent, whilst chronic inflammation and BPH was found in fifty point seven to seventy four percent and four point seven to twenty one point eight percent, respectively[4].

For specific prostate serum antigen values, prostate cancer was detected in Twelve percent (three of twenty five sick persons) with prostate serum antigen levels of less than two point five ng/mL, twelve point seven percent (six of forty seven sick persons) with prostate serum antigen levels of ≥ two point five – < four ng/mL, and in thirty percent (21/70sick persons) with prostate serum antigen levels ≥ four ng/mL[4]. While, the cancer detection rate in patients having a prostate serum antigen level between four to ten ng/mL was ten point eight to twelve percent[10].

CONCLUSION

Antibiotic treatment is clinically beneficial in patients with high prostate serum antigen levels. Prostate serum antigen reduction or normalization after medical treatment, either antibiotic and/or non steroid anti inflammatory drugs, for ≥2 weeks can avoid unnecessary prostate treatment. Antibiotic treatment is more beneficial when the prostate serum antigen level is <20 ng/mL, especially when the evidence for inflammation is not overt.

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Tendency of Post COVID Muscle and Joint Pains

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ABSTRACT

Objective: To the study Trend of post COVID muscle and joint pains.
Study Design: Observational Study
Place and Duration of Study: This study was conducted at the Imran Idris Teaching Hospital Sialkot and Allama Iqbal Memorial Hospital Sialkot 26 Feb 2020 to Nov 2020.
Materials and Methods: Fifty-five patients of COVID were included in the study. History of fever, flue, was found and on examination of blood sample PCR it was confirmed patients of COVID-19. The written informed consent of every patient was taken before history of fever, flue, was found and on examination of blood sample PCR it was confirmed patients of COVID-19. Ethical permission of institute was taken before collecting the data and get publishing in Medical Journal. The results were analyzed by SPSS version 20. The patients follow up was conducted and they complaint muscle and joint pain.
Results: The incidence of Post COVID muscle and joint pain was maximum 15(27.27%) at age group 48-58 years and was minimum 2(3.63%) in age group 15-25 years.
The incidence of Post COVID muscle and joint pain was 35(63.63%) in male and was 20(36.36%) in female. The incidence of Post COVID muscle and joint pain was maximum 26(47.27%) in lower class and was minimum 9(16.36%) in high gentry. The incidence of Post COVID muscle and joint pain was maximum 25(45.45%) in patients of back ache and was minimum 2(3.63%) in patients having headache
Conclusion: Low education rate and without awareness leading to not-serious of people towards the adopting of social distance and hand washing. The congestion of people in big cities of Pakistan can lead in the spread of virus. Approach of trace, test and treatment needs to be applied to prevent the transmission in community leading to increase in cases. It was also found that post COVID-19 muscle and joint were evident.

Key Words: COVID 19, Muscle and joint pains

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INTRODUCTION

The COVID 19 corona virus, which started in China, Wuhan, has spread two hundred thirteen countries and peripheries. As of seventeen April two thousand twenty, nineteen lakhs ninety five thousand nine hundred eighty three cases and one Lakhs thirty one thousand thirty seven deaths have been reported internationally [1]. It is an international threat, and now a pandemic said by the WHO, pretending multi-directional challenges to nations internationally.
The World Health Organization has given warning about the speed up of pandemic, as it took sixty seven days to reach one Lakh cases from the first reported case, eleven days to reach the 2nd one lakh 4 days for the 3rd one lakh and just in a matter of 2 days figures reached to the 4th one lakh[2]. Patients without symptoms have also become a definite source of spreading contamination. China and South Korea containing the virus, shown by their rapid decrease in numbers of new cases [3]. Increases in numbers of cases in other parts of the world has forced several governments to put one point seven billion people (almost twenty percent of global population) restriction in home. Ban entry and closing markets, schools and institutions are among the serious measures taken in an attempt to contain the virus [4].
As the borders of Pakistan are not as much vigilant especially with Iran so the transfer of virus through those areas is highly prevalent. Hence migration of virus from Iran and China caused up rise of virus in Pakistan. As the Pakistan has got lesser health facilities available so that Pakistan could rely upon body temperature checking through forehead, detection of close mates of positive cases and collection of information for further strategy formation and implementation. [7] Later on along with these preventive measures confirmation of suspected cases became possible through laboratory detection [8]. As per rules all

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suspected and confirmed cases have been isolated at the places fixed for this purpose in various cities of Pakistan. All the contacts are also checked for presence of virus [9], as recommended by the WHO.

Pakistan, being a financially weaker country. It lacked lab detection kits, standard medicines to treat case, ventilators and other facilities like isolated hospitals. So it mainly relied upon preventive measures like public awareness through print, electronic and social media, importance of wearing mask, keeping social distance, restricting the togetherness of humans in death or wedding ceremonies, in bazaars and in public transport. Still there is a lot to do more. It was also found that post COVID-19 muscle and joint were evident.

MATERIALS AND METHODS

Fifty-five patients of COVID were included in the study. History of fever, flue, was found and on examination of blood sample PCR it was confirmed patients of COVID19. The written informed consent of every patient was taken before history of fever, flue, was found and on examination of blood sample PCR it was confirmed patients of COVID 19. Ethical permission of institute was taken before collecting the data and get publishing in Medical Journal. The results were analyzed by SPSS version 20. The patients follow up was conducted and they complaint muscle and joint pain.

RESULTS

The incidence of Post COVID muscle and joint pain was maximum 15(27.27%) at age group 48-58 years and was minimum 2(3.63%) in age group 15-25 years as shown in table no 1.

Table No.1: Age distribution in Post COVID muscle and joint pain patients

Sr #	Age distribution	Patients	Percentage
1	15-25	2	3.63%
2	26-36	5	9.09%
3	37-47	11	20%
4	48-58	15	27.27%
5	59 on ward	22	40%

The incidence of Post COVID muscle and joint pain was 35(63.63%) in male and was 20 (36.36%) in female as shown in table no 2.

Table No.2: Gender distribution in Post COVID muscle and joint pain patients

Sr #	Gender distribution	Patients	%age
1	Male	35	63.63%
2	Female	20	36.36%
Total		55	100%

The incidence of Post COVID muscle and joint pain was maximum 26(47.27%) in lower class and was minimum 9(16.36%) in high gentry as shown in table no 3.

Table No.3: Socio Economic status distribution in Post COVID muscle and joint pain patients

Sr #	Socio Economic status	Patients	%age
1	High gentry	9	16.36%
2	Middle class	20	36.36%
3	Lower class	26	47.27%
Total		55	100%

The incidence of Post COVID muscle and joint pain was maximum 25(45.45%) in patients of back ache and was minimum 2(3.63%) in patients having headache as shown in table no 4.

Table No.4: Muscle and joint pain distribution in Post COVID patients

Sr #	Muscle and joint pain	Patients	%age
1	Headache	2	3.63%
2	Back Ache	25	45.45%
3	Knee joint	10	18.18%
4	Hip joint	5	9.09%
5	Ankle Joint	3	5.45%
6	Mixed	10	18.18%

DISCUSSION

Socio-Economic impact of Corona Virus Outbreak on national economy:

The starting expenditure losses in different wings have been about at five billion rupees, as Estimated by the Asian Development Bank [11,12]. Decreased in rough Domestic things growth is seen because of the decreased in services wings like airline businesses, economic losses, rapid decrease in imports and exports, reduction in remittances, and disruption in food supplies. The country's gross domestic product anticipated loss is ten percent, which is around one point one trillion rupees due to destruction caused by corona. Karachi, a major financial city with a population of around twenty million people, is anticipated to face a major expenditure loss due to the lock down of up to three hundred Eighty billion rupees. The incidence of Post COVID muscle and joint pain was maximum 25(45.45%) in patients of back ache and was minimum 2(3.63%) in patients having headache. Which concide studies off many Author. (13, 14)

Now the central government is not in favour of a complete shutter down because of the social binding. Of the people Pakistan, twenty-four point three percent live below low income line (15,16). The most at risk people, with regard to compulsory shutter down, and the lower class However, there are methods in place for supporting at risk people in society. Common man programs in Pakistan like EHSAAS, Zakat and Baitul Maal, Langar Khanna, Common man protection, and protection Homes need to be utilized for supporting the at risk class. Poverty is uncontrolled in the country, with poor people unable to have to times living, considering corona virus is not their issues. [17, 18]

Other countries that force complete shutter downs had higher income for each man than Pakistan. It is

important to keep the economy suspended with the priority of keeping people safe from the prevalent. In order to decreased the economic influence of the present flare-up, the government has decided to announce a including economic plan giving shelter and motivation to industries and relief packages for the at risk and poor people. The Sindh government has given a relief of 3 months in paying of utility bills below five thousand Rupees. [19, 20]

CONCLUSION

Low education rate and without awareness leading to not-serious of people towards the adopting of social distance and hand washing. The congestion of people in big cities of Pakistan can lead in the spread of virus. Approach of trace, test and treatment needs to be applied to prevent the transmission in community leading to increase in cases. It was also found that post COVID-19 muscle and joint were evident.

Author's Contribution:

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Level of Vitamin D3 Deficiency in Children

Mumtaz Ali Bharo[1], Kamran Ali[2], Sheeraz Ahmed[1], Bakhtiar Ahmed[1] and Ubed Ullah Bahalkani[1]

ABSTRACT

Objective: To study the Level of Vitamin D3 Deficiency in Children
Study Design: Observational study
Place and Duration of Study: This study was conducted at the department of pediatrics, GMMC Medical College, Sukkur and Per Mirs Medical College, Khairpur Mirs during January 2019 to December 2020.
Materials and Methods: We included the age six to twelve years patients, that attended the endocrinology department of pediatrics. We added sick children who attended clinic of our outpatient for detection of growth and age before puberty without any acute diseases on the day of visit. 230 samples were taken keeping in view exclusion criteria like seizers, low hormonal levels of thyroid gland. All those children whose weight lied in between 3 to 84 percentile were considered as normal, those with 85 to 94 percentile were considered as over weight .It was according to previous formulated standards in Korea. Among samples there were eighty girls (34.78%) and one hundred fifty boys (65.21%). Among the patients, one hundred fifty (62.21%) had a normal weight, fifty (21.73%) were overweight and obese thirty (13.04%). The written informed consent of the parents of the patients was taken before collecting the information. The Ethical Committee permission was taken before collecting the data and get publishing in Medical Journal.
Results: The incidence of was maximum 120 (52.17%) at age 1-6 year and was 110(47.82%) at age group 7-10 year. Male children were 150 (62.21%) and female 80 (34.78%). There were 150 (62.21%) normal children, overweight 50 (21.73%) and obese 30 (13.04%) children. There was 45 (19.56%) cases in spring, 65 (28.26%) in Autumn and 120 (52.17%) cases in winter. There were 130 (56.52%) cases of vitamin D Deficiency and 100 (43.47%) of Sufficiency vitamin D.
Conclusion: From current study it was resulted that feeble levels of serum Vitamin D were mainly encountered in children of school going age. It was also resulted that such feeble levels encountered in cold and blooming seasons. Therefore we suggest that it is necessary to supplement the vitamin D in diet according to our situation.

Key Words: Risk factors, Prevalence, Vitamin D deficiency, Child

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INTRODUCTION

Through multiple researches it has been concluded that for normal build up of bones the need of Vitamin D cannot be denied. Certain other minerals also depend upon it for performing their normal functions. Those minerals include calcium and phosphorus1). Non artificial foods lack it and a big cheapest source is sunlight 2).When its serum levels become less than standard levels it causes undergrowth of bones. The bones become brittle and can be fractured on very minor trauma 3). Its effecting cells are present in many vital organs like central vascular system, hormonal system and takes part in formation and development of different cells of body[4,5,6]. Many diseases of inhalation and itching have been found correlated with feeble levels of Vitamin D. Similarly meorrhagia can also be provoked with its deficiency[7,8,9]. The feeble levels cause dark colored patches on skin. Its low levels may be fatal in old age and over weight persons).[5,10]

MATERIALS AND METHODS

We included the age six to twelve years patients, that attended the endocrinology department of pediatrics clinic. We added sick children who attended clinic of our outpatient for detection of growth and age before puberty without any acute diseases on the day of visit. 230 samples were taken keeping in view exclusion criteria like seizers, low hormonal levels of thyroid gland. All those children whose weight lied in between 3 to 84 percentile were considered as normal, those with 85 to 94 percentile were considered as overweight.

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It was according to previous formulated standards in Korea. Among samples there were eighty girls (34.78%) and one hundred fifty boys (65.21%). Among the patients, one hundred fifty (62.21%) had a normal weight, fifty (21.73%) were overweight and obese thirty (13.04%). The written informed consent of the parents of the patients was taken before collecting the information. The Ethical Committee permission was taken before collecting the data and get publishing in Medical Journal.

RESULTS

Table No. 1: Demographic data

Sr. No.	Characteristics	No. of cases	%age
	Age (Years)		
1	1 – 6	120	52.17%
2	7-12	110	47.82%
	Sex		
1	Male	150	62.21%
2	Female	80	34.78%

The incidence of was maximum 120 (52.17%) at age 1-6 year and was 110(47.82%) at age group 7-10 year. Male children were 150 (62.21%) and female 80 (34.78%) as shown in table no 1.

Table No. 2: Body weight Distribution

Sr. No.	Characteristics	No. of cases	%age
1	Normal	150	62.21%
2	Overweight	50	21.73%
3	Obese	30	13.04%

There were 150 (62.21%) normal children, overweight 50 (21.73%) and obese 30 (13.04%) children as shown in table no 2.

Table No. 3: Season Distribution

Sr. No.	Season	No. of cases	Percentage%
1	Spring (Mar–May)	45	19.56%
2	Autumn (Sep–Nov)	65	28.26%
3	Winter (Dec–Feb)	120	52.17%

There was 45 (19.56%) cases in spring, 65 (28.26%) in Autumn and 120 (52.17%) cases in winter as shown in table no 3.

Table No: 4 Vitamin D (25[OH]D) Distribution

Sr. No.	Characteristics	No. of cases	%age
1	Deficiency (<20 ng/mL)	130	56.52%
2	Sufficiency (≥20 ng/mL)	100	43.47%
3	Total	230	100%

There were 130 (56.52%) cases of vitamin D Deficiency and 100 (43.47%) of Sufficiency vitamin D as shown in table no 4.

DISCUSSION

In the present study children age six to twelve year, we seen that deficiency of vitamin D was very common. In this study there were 123 samples with feeble levels of vitamin D , and their mean serum twenty five (OH) D level was fourteen point eighty six ± three point twenty ng / mL. The level of mean serum twenty five (OH)D level of all subjects was nineteen point eighty three ± seven point thirty nine ng/mL which was also feeble than the sufficient vitamin D concentration (≥20 ng/mL). Prevalence of vitamin D deficiency in spring and winter, compared with autumn the was found to increase.[11]

Noted the mean serum level of 25(OH) D in two thousand eight hundred eighty children and adolescents as 17.42 ± 8.95 ng/mL. In an other study carried out it was found that feeble levels of vitamin D were found in 1213 samples, aged between four and fifteen years, was 58.6%[12]. These results are concide with the findings of our work.[13,15,16]

Level of vitamin D in obese children are known to have a lower level of vitamin D, compared with children of a normal weight. Key enzymes in vitamin D deficiency, That act on adipose tissue such as lipoprotein lipase and fatty acid synthase are thought to be prevented, affecting fat accumulation. Vitamin D3 is stored in subcutaneous fat, and the vitamin D3 synthesized in the skin of obese children become more sequestered. Due to this decrease in the availability of vitamin D3, vitamin D deficiency appears more often in obese children[17,18]. The present study shows a significant difference between the vitamin D deficiency and sufficiency groups, in terms of weight SDS and Body Mass Index SDS.

CONCLUSION

From current study it was resulted that feeble levels of serum Vitamin D were mainly encountered in children of school going age. It was also resulted that such feeble levels encountered in cold and blooming seasons. Therefore we suggest that it is necessary to supplement the vitamin D in diet according to our situation.

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Corrigendum-I

1. Duration of study in article ‘Onlay Mesh Repair for Abdominal Hernia; Do We need a Paradigm Shift?’ published in Med Forum Vol. 32, No.1 January, 2021 at pages 152-155, is one year from June 2017 to May 2018 instead of six months August 2016 to January2017.

Corrigendum-II

2. Duration of study in article ‘Early Complications of Open versus Closed Internal Anal Sphincterotomy in the Management of Chronic Anal Fissure’ published in Med Forum Vol. 32, No.1 January, 2021 at pages 156-158, is six months from August 2016 to January2017 instead of one year from June 2017 to May 2018.

Editor