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Guidelines and Instructions to Authors i-ii
Health is wealth; how the saying goes, but aging is a natural phenomena. The period starting from 70 to 79 is of utmost importance, the reason being that in this period various organs decline rapidly. It is a period of geriatric diseases such as hyperlipidemia, Arteriosclerosis, hypertension and diabetes. After 80 these diseases stabilize or may even decline that’s why ten years starting from 70 to 79 are called dangerous age. There are precautionary measures to stay healthy.

Water is the best and cheapest health drink and should be drunk (at least) at the following times: first, after getting out of bed in the morning, drink a glass of water on an empty stomach. Due to sweating and urine secretion while sleeping, a lot of water is lost. The right amount of exercise is one of the cornerstones of longevity, especially for the elderly, and more attention should be paid to effective and reasonable exercise. However, after exercise, special attention should be paid to replenish water lost to sweating, which takes away electrolytes. If one doesn’t pay attention, hypoglycemia (low blood sugar) after exercise may result and even cause syncope (fainting). Furthermore, it is recommended that the elderly add a pinch of salt and a little sugar to drinking water after exercise. Before going to bed at night While Sleeping, Sweat glands continue to drain water from the body. If the body’s water is reduced, blood can thicken. A glass of water can help prevent this and may even slow down the appearance of aging, help against angina (pain in the chest), myocardial infarctions (heart attack) and other diseases.

A famous medical scientist in the Qing Dynasty in China called porridge “the first complement of the world”. China Daily Online published a 14-year study conducted by Harvard University on 100,000 people. It found that a bowl of about 28 grams of whole grain cereal porridge a day can reduce mortality by 5 percent and the chance of getting a cardiovascular disease by 9 percent. All the volunteers were in good physical condition at the start of the study in 1984, but in the 2010 feedback survey, more than 26,000 had passed away. It was found that those volunteers who had regularly eaten whole grains such as porridge, brown rice, corn, seemed to have avoided all diseases, especially heart disease.

Milk is known as ‘white blood’. Its nutritional value is well known - a lot of calcium, fat and protein. The recommended daily intake of milk and dairy products is 300 grams. It is, therefore, enough to drink 400 ml of milk a day.

Eggs can be said to be the most suitable food for human consumption. The body’s absorption rate of egg protein can be as high as 98 percent. The protein contained in fish is easily digested and absorbed. The amount of unsaturated fatty acids in the fat, especially polyunsaturated fatty acids is relatively good for the body.

Apples have the effects of lowering cholesterol, losing weight, preventing cancer, preventing aging, enhancing memory and making the skin smooth and soft. The benefits of different coloured apples vary. Red apples nourish and detoxify the liver and can fight depression and yellow apples protect vision. Onions have a high nutritional value, help lower blood sugar and cholesterol, prevent cancer, protect against cardiovascular and cerebrovascular (blood vessels of the brain) diseases. Onions are also antibacterial, Help prevent colds and supplement calcium. Eat onions at least three and four times a week.

Walking has a magical anti-aging effect. When adults walk about one kilometer or more regularly for more than 12 weeks, posture is corrected, waistline reduced and the body becomes strong and tires less easily. Walking is also beneficial to treat headache, backache, shoulder pain, etc. and can promote good sleep. Experts believe that a 30 minute walk a day, five days a week, can get rid of the danger of ‘adult diseases’. People who take 10,000 steps a day will have a lower chance of developing cardiovascular and cerebrovascular diseases.

Having a hobby, no matter what it is, can help the elderly maintain extensive contact with society and nature. This broadens the horizons of interest and makes them happier. Last but not least, always be in a good mood. The elderly should maintain a positive attitude, as that is extremely important to health. Common chronic diseases are closely related to negative emotions. Many patients with coronary heart diseases have angina and myocardial infarctions due to adverse emotions causing stress, sometimes resulting in sudden death. Bad tempers lead to high blood pressure. In prolonged and severe cases, this can cause stroke, heart failure, sudden death, etc. Negative emotions such as anger, anxiety and grief and cause blood sugar levels to rise, causing metabolic disorders in the body. This all goes to show how important it is to maintain a good mood.
Comparison of Extra Amniotic Foleys Catheter Balloon with Traction Versus the Combined Use of Foleys Catheter Balloon Plus Extra-Amniotic Instillation of Pgf2 Alpha in Termination of Second-Trimester Pregnancy

Hemasa Gul, Nabeela Khan and Samina Jadoon

ABSTRACT

Objective: To compare the efficacy of intracervical catheter balloon with traction versus intracervical catheter and instillation of pgf2 alpha for termination of mid trimester pregnancy.

Study Design: Randomized controlled trial study

Place and Duration of Study: This study was conducted at the Department of Gynae and Obstetrics, Mardan Medical Complex Teaching Hospital Mardan for 6 months from January 2016 to June, 2016.

Materials and Methods: Consecutive non-probability sampling technique was used. Patients were grouped randomly into two groups by simple lottery method. The group 1 patients were induced with intracervical catheter balloon with traction while patients in group 2 were induced with intracervical catheter balloon and instillation of PGF2-alpha extra-amniotic space. The duration required for expulsion and efficacy of treatment was noted.

Results: The mean age of the patients was 29.68±6.46 years with the mean gestational age of 20.63±4.01 weeks. The need for E&C was found in 17.24% patients and efficacy was observed in 56.90% patients. Statistically, there is a significant difference between the efficacy in study groups of the patients i.e. p-value=0.004.

Conclusion: Foley+PGF2 is found to have more effective and satisfactory results as compared to Foley catheter alone for termination of second-trimester pregnancy.

Key Words: Efficacy, Foley catheter balloon, PGF2 alpha, Trimester, Pregnancy

INTRODUCTION

Therapeutic miscarriage is one of the commonly practiced gynecological procedures in UK. There is no exact data regarding induced abortion in this region. A majority (90%) miscarriages take place in early pregnancies. Worldwide second trimester abortion constitutes 10–15% of all therapeutic miscarriage but is responsible for more than 60% of all major complications. Although the majority of therapeutic miscarriage are performed in the early pregnancies but there is still a gradual increase in mid trimester miscarriage because of the wide-scale introduction of prenatal screening programs that detects women whose pregnancies are complicated by serious congenital anomalies’ such as cardiovascular and skeletal malformation. Achieving the termination of pregnancy in mid trimester is a challenge facing by the obstetricians today. Disseminated intravascular coagulation disorder is an important complication if a dead fetus is retained in uterus for four weeks of the estimated fetal demise. It is also a psychological problem for the mother once she knows that she is having a dead or an abnormal fetus, in such circumstances, pregnancy has to be terminated. Both medical and surgical abortion procedures are used in the second trimester. The complication rates with surgical evacuation are between 4 and 10% and consist of uterine perforation, cervical injury, infection and hemorrhage. These complications in the form of hemorrhage and sepsis, associated with the surgical evacuation when performed by unskilled personal; in low resource countries have changed the focus towards non-surgical management with an economic advantage as well. Non-surgical methods for second trimester miscarriage have shown a considerable development during the last decade and have become more safe and considerable.

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A variety of methods for termination pregnancy in second trimester can be used like induction with mifepristone and misoprostol, misoprostol or extra-amniotic instillation of PGF2 alpha and cervical dilatation with Foley's catheter with different efficacy in terms of induction to expulsion time, need for surgical evacuation and rate of complications. Use of the intracervical catheter for therapeutic miscarriage was first described by Krause in 1833. The mechanical dilatation and endogenous Prostaglandin release are the mechanisms of cervical ripening by Foley's catheter and this effect is exaggerated when traction is added.

The rationale of my study is to find out an effective and safe method for therapeutic termination of mid-trimester pregnancy, which have a short induction to expulsion time, cost-effective and with less complication rate. This study will help in finding the efficacy of PGF2 alpha instillation via Foley's catheter in extra-amniotic space for therapeutic miscarriage in mid-trimester pregnancy as compared to catheter insertion and traction alone.

**MATERIALS AND METHODS**

It was a Randomized Controlled Trial study, conducted at Department of and Gynea and Obstetrics in Mardan Medical Complex Teaching Hospital Mardan; it took six months to conduct the study. The sample size was 58 in each group while taking 76% efficacy of Foley's catheter Balloon with traction and 50% efficacy of PGF2 alpha in Foley's catheter for therapeutic termination of second-trimester pregnancy, confidence interval 95%, power of test 90%. According to WHO formula for sample size calculation. Consecutive non-probability sampling. The Inclusion Criteria were the Women undergoing therapeutic termination of pregnancy with 14-28 weeks of gestation for maternal medical condition including intrauterine fetal death (missed abortion), lethal congenital malformations like anencephaly, gross hydrocephalus and fetal hydrops. Patients with placenta previa, unexplained vaginal bleeding and vaginal discharge, vaginal bleeding, absent membrane, previous lower segment cesarean section, previous myomectomy or patients presenting with labour pains were excluded. Data Collection Approval was taken from the ethical committee of the hospital before starting the project. Patients meeting the inclusion criteria were enrolled and admitted to the hospital. Informed written consent was obtained. A detailed history was recorded. General physical examination, per abdominal and per vaginal, was carried out to assess cervical score and uterine size. Data was collected regarding maternal age, gestational age, parity and indications for termination of 2nd-trimester pregnancy. All baseline investigations have done including Full blood count, blood group and Rh factor, urine routine examination, platelets count and coagulation profile. Patients were divided into two groups randomly by simple lottery method. The group 1 patients were induced with intracervical catheter balloon with traction while group 2 patients were induced with combined intra cervical catheter balloon and instillation of PGF2-alpha in extra-amniotic space. Using sterile techniques in both groups a 20 French gauge Foley's catheter was inserted through the internalos. The balloon of catheter was inflated with 40 ml distilled water and gentle traction was applied by using a urinary bag filled with half liter water. To the patients in group 2 PGF2-alpha injection was instilled in the extra amniotic space through the same catheter. One injection of PGF2-alpha was diluted with 19 ml normal saline. 2 ml of the diluted solution was instilled through the catheter immediately after insertion of the catheter and then 1 ml per hour till expulsion of the balloon. After achieving the cervical ripening, intravenous oxytocin infusion was used for augmentation in both groups. Induction to catheter expulsion interval and catheter expulsion to fetus expulsion interval was recorded. Complete expulsion was confirmed on pelvic examination as closed OS and Ultrasound scan. Evacuation of product of conception and curettage were performed under short general anesthesia when required. Efficacy is defined as complete expulsion of a product of conception within 24 hours. Data was analyzed using suitable statistical tools by SPSS software version 21. Chi-square test was applied to compare the efficacy in both groups. P<0.05 was considered significant. All the results were presented as charts and graphs.

**RESULTS**

The mean age of the patients was 29.68±6.46 years. The mean gestational age was 20.63±4.01 weeks. In this study, the mean induction of expulsion time was 22.17±5.49 hours. Table 1

**Table No.1: Demographics of patients**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>116</th>
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<tbody>
<tr>
<td>Age (years)</td>
<td></td>
<td>29.68±6.46</td>
</tr>
<tr>
<td>Gestational age (weeks)</td>
<td></td>
<td>20.63±4.01</td>
</tr>
<tr>
<td>Induction of Expulsion time (hours)</td>
<td></td>
<td>22.17±5.49</td>
</tr>
</tbody>
</table>

**Table No.2: comparison of outcome in both groups**

<table>
<thead>
<tr>
<th></th>
<th>Foley+PGF2</th>
<th>Foley catheter</th>
<th>Total</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need for E&amp;C</td>
<td>Yes</td>
<td>7 (12.1%)</td>
<td>13 (22.4%)</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>51 (87.9%)</td>
<td>45 (77.6%)</td>
<td>96</td>
</tr>
<tr>
<td>Efficacy</td>
<td>Yes</td>
<td>40 (69.0%)</td>
<td>26 (44.8%)</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>18 (31.0%)</td>
<td>32 (55.2%)</td>
<td>50</td>
</tr>
</tbody>
</table>

The need of E&C was observed in 20 cases in which 7 (12.1%) were from group A and 13 (22.4%) were from group B. Statistically insignificant difference was found between both study groups i.e. p-value=0.07. The efficacy was observed in 66 cases in which 40 (69%)
were from group A and 26 (44.8%) were from group B. Statistically a significant difference was found between the two study groups i.e. p-value=0.004. Table 2

DISCUSSION

Termination of pregnancy in the second trimester due to intrauterine fetal death and fetal abnormalities is one of the big challenges faced by the obstetricians today. There was no statistically significant difference in side effects and major complications developed in both group. In our study, the overall efficacy was observed in 66 (56.90%) patients. Out of 66 patients 40 were from group A and 26 were from group B, similarly efficacy was not found in 50 patients in which 18 patients belonged to group A and 32 patients were from group B. Group A showed statistically more effective results as compared to group B patients.

With the use of intracervical catheter balloon and administration of extra amniotic PGF2-alpha at regular interval, successful termination of pregnancy has been achieved in 76 to 94%. Eileen K Hutton et al demonstrated in their study that when extra-amniotic instillation PGE2 was compared to intracervical catheter only, the only difference between groups was that there were fewer cases of unfavorable cervix at 12 to 24 hours following treatment (RR 0.59; 95% CI 0.41 to 0.86). Patient satisfaction rate was higher in those patients who received extra-amniotic prostaglandin. (mean difference 4.40; 95% CI 3.50 to 5.30) and these patients were less likely to be embarrassed by the treatment compared to vaginal PGE2 (RR 8.91; 95% CI 2.26 to 35.02).

Musarrat Halimi et al described that the combined use of Foley's catheter balloon and extra amniotic PGF2-alpha is more rapid, safe and cost-effective method for induction of therapeutic termination of second-trimester pregnancy, resulting in greater number of successful uterine evacuation within 24 hours than the Foley's catheter balloon alone. The efficacy and safety of the combined use of balloon catheter and extra-amniotic instillation of PEGF2-alpha has been studied with favorable results, but studies comparing the combined use of Foley's catheter balloon and extra-amniotic instillation of PEGF2-alpha with the use of extra-amniotic Foley's catheter balloon alone are limited.

Muhammad Shoaib et al also concluded in their study that the combined use of intracervical catheter balloon with instillation of PGF2-alpha is more efficacious than the catheter balloon with traction alone. H.S Liu et al mentioned in their study that the catheter balloon with intracervical PGE2 is more efficient in decreasing the induction-to-delivery interval for dissolution of second trimester pregnancies than the extra-ovular catheter with intrauterine PGF2α.

In our study, the mean induction of expulsion time was 22.17±5.49 hours with minimum and maximum time of 12 & 30 hours respectively. the need for E&C was found in 17.24% patients. Statistically, there is insignificant difference was found between the need for E&C and study groups of the patients. i.e p-value=0.07

One study revealed that the group 1 patients were induced with intracervical catheter balloon alone with traction while patients in group 2 were induced with combined catheter balloon and PGF2-alpha. Mean induction to expulsion of the products of conception time was significantly shorter in group 2 as compared to patients in group 1 (16.7±4 versus 26.2±11.019 hrs, p<0.005). The combined use of catheter balloon with instillation of PGF2-alpha is more efficacious than the catheter balloon with traction alone.

Shoaib et al demonstrated in their study that the mean induction to expulsion of the products of conception interval was considerably shorter in group 2 as compared to group 1 (16.7±4 versus 26.2±11.019 hrs, p<0.005). One study also presented that the balloon of the Foley catheter can safely remain in the extra-amniotic space for more than 24 hours if the cervix is not favorable, provided the membranes are intact and there is clinical evidence of satisfactory fetomaternal well-being.

Instillation of PGF2 alpha in extra-amniotic space significantly reduces mean induction to products expulsion interval as compared to Foley's Cather and traction alone (17 hours and 27 hours respectively) and in more than 50% of cases termination can be achieved in 24 hours.

CONCLUSION

Foley+PGF2 is found to have more effective and satisfactory results as compared to Foley's catheter alone for termination of second-trimester pregnancy.

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Postoperative Wound Closure and Cosmetic Outcomes of Sutures and Staplers in Thyroid Surgery at Tertiary Care Hospital

Inayat Ali Zardari, Mashooque Ali Khowaja, Abdul Hakeem Jamali, Altaf Hussain Ghumro and Farkhanda Jabeen Dahri

ABSTRACT

Objective: To detect the best material used in order to get least postoperative complications and good cosmetic results for restoring the normal anatomy of affected organ.

Study Design: Comparative study.

Place and Duration of Study: This study was conducted at the Surgical Department of PMCH, Nawabshah from December 2016 to November 2018.

Materials and Methods: All the patients were admitted from Surgical OPD and Emergency department.

Results: Total 45 patients were included in this study. Of them, Prolene was used in 20 (44.4%) patients, Mersilk in 15 (33.3%) and Staplers in 10 (22.2%) patients.

Conclusion: Polypropylene was the best suture with good results keeping in view the postoperative complications and cosmetic outcomes.

Key Words: Polypropylene, Staplers, Cosmetic, Suture

INTRODUCTION

It is an accepted fact that every human wants to be looked beautiful so there is dire need of good aesthetic outcomes even after surgical trauma to body. The role of cosmoses has always been a part of surgeries in all surgical fields. This is the fact that there is increase in conversion of open surgeries to laparoscopic, transabdominal (scar less), SILS (single incision laparoscopic surgeries) and also the endoscopic procedures. These procedures produce fewer scars. Despite all these advancements, the role of sutures, staplers and glues play same role in context of cosmoses.

The surgeries performed for thyroid and parathyroid glands are important cosmetically for women and young adults. The incision for these procedures is highly sensitive as anatomic location is visible. So the sutures used for these methods are performed keeping in view the cosmetic concern. Suture material still occupies significant place in this regard.1,2

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There are three methods of skin closure viz staples, sutures and skin adhesives. Sutures are still in common usage for wound closure due to their easy access, usage and efficiency. It also provides mechanical support for the closure of wound. Moreover, different varieties of sutures are available for surgeons to choose keeping in view the type of wound to close.3 Surgical suture is the material for holding the body tissues together after the non surgical or surgical trauma. It is done with help of different types of needles having threads at their back. The needles have variety of shapes and size along with threads. Knots are usually used to secure the sutures.4,5 The use of surgical suture dates back to 3000 BC in ancient Egypt. The suture in mummy in 1100 BC is the known to be the oldest one. Hippocrates, known as father of medicine, invented the suture technique. Galen invented the Gut sutures in 2nd century and Abulcasis unveiled catgut suture along with needle in 10th century. Sterile catgut was discovered in 1906 with iodine treatment. The revolution in suture material came in 20th century when 1st synthetic thread was produced in 1930s. polyesters were discovered in the 1950s and polyglycolic acid in 1960s. Nowadays, most of threads are made of synthetic polymer fibers. Gut sutures are not used in Europe because of developing Bovine Spongiform Encephalopathy. Silk suture is still in use but limited.6 Each suture has its different characteristics and functions. They have different filament structure, size, degradation capability, tensile strength, surface texture, stiffness and flexibility of the materials. The capability of sutures to bear the tissues induced stress and the capability of repair is dependent on its size and tensile
Sutures are made of two types of materials viz absorbable and non absorbable. Absorbable sutures degrade by losing their 50% of tensile strength usually within 60 days whereas non absorbable sutures can retain their tensile strength more than 60 days. Absorbable sutures include the catgut, polyglycolic acid, polylactic acid, polydioxanone and caprolactone. Naturally derived absorbable sutures are absorbed within 70 days by proteolysis of enzymes. Synthetic absorbable sutures degrade by hydrolysis whereas non absorbable sutures degrade poorly. Non absorbable sutures are composed of silk or polypropylene, polyester or nylon. Neither do they undergo enzymatic digestion nor hydrolytic process and is removed physically. These are commonly used on skin for wound closure and are removed after one to two weeks. They develop least scar as they usually provoke diminished immune response. Various substitutes have been introduced recently like glues, staples and strips in market but these are lacking in stability and flexibility which is only found in sutures in wound healing.

Multiples techniques are used for sutures usage. These are simple interrupted stitch, vertical and horizontal mattress stitch, purse string suture, figure 8 stitch and subcuticular stitch. Staples and glues are also used for wound closure. The time of removal of sutures vary with regard to body parts. Facial wounds are removed within 3-5 days where as scalp wounds are freed on 7-10 days. Joints stitches are out on 14th day whereas of trunk of the body on 7-10 days.

Staples are deemed to be good because they are applied quickly and easily for skin closure but some authors have discouraged their use because of the more vulnerability to develop infection and scars. These have also enhanced tension along the line of incision so it is not appropriate for reconstructive flap surgery. They can be used for closure of long incisions. But the advantage of staples over sutures is their speed of closing wound. The worst disadvantage of staples is the creation of wound gaping if dermal margins are not accurate producing eversion or inversion. The rationale of our study is to find out the better method of skin closure for the purpose of cosmoses of patient so that the natural beauty of human could be maintained.

**MATERIALS AND METHODS**

This is comparative study conducted at surgical department of PMC Hospital Nawabshah from December 2016 to November 2018. Total 45 patients were included in this study. All the patients were admitted from Surgical OPD and Emergency Department of Peoples Medical College Hospital Nawabshah after getting their thyroid profile results. Patients admitted were Euthyroid. Hyperthyroid patients were excluded from this study and treated conservatively. Thorough History and Clinical examination was done. Local examination of Neck was also done to exclude any toxic element. Routine blood investigations were done. X ray and Ultrasound of chest was done to rule out retrosternal extension. Laryngoscope was done by ENT department to exclude preoperative assessment of tonsils. Cardiac and Anesthesia fitness was gotten for Surgery. Patients were shifted to Operation Theater. After thyroidectomy, skin closure was done by Mersilk#1, Proline#0,1, 2/0, and also the Staplers. Patients were shifted to Ward for the postoperative management. On operative and postoperative days, wound was examined for postoperative hematoma. On 5th postoperative, patients were discharged, called on 10th postoperative day for follow up, then finally on 3rd month to compare the wound position of neck cosmetically.

**RESULTS**

Total 45 patients were included in this study. Of 45, Proline#0,1,2/0 was used in 20 (44.4%), mersilk#1 in 15 (33.3%) patients and Stapler in 10 (22.2%) patients only as is shown in Table 1. Out of 20 patients, 7 (15.5%) patients skin closure was done by proline#1, 7 (15.5%) by Proline#0 and 6 (13.3%) with Proline#2/0. Mersilk#1 was used in 15 (33.3%) patients whereas stapler was applied in only 10 (22.3%) patients only. On 10th day and 3rd month postoperatively, patients’ wounds were examined for complications and cosmoses respectively. 4 (8.8%) out of 15 patients used silk for skin closure came with infected wound and 1 patient with wound dehiscence. 2(4.4%) patients out of 10 closed with stapler developed infection in wound. Of total 20 patients, only 1 (2.2%) patient developed minor infection in wound. Increased pain in wounds was noted in patients with staples. 1(2.2%) patient with stapler usage developed wound dehiscence but no any case was reported by usage of proline. 2(4.4%) patients developed granuloma after use of proline but none developed stitch granuloma after silk and stapler usage. Cosmetically, patients with proline use resulted in excellent scar, silk with good scar.

![Chart No.1: Patients details](image-url)

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**Table 1.**

<table>
<thead>
<tr>
<th>Suture Type</th>
<th>Number of Patients</th>
</tr>
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<tbody>
<tr>
<td>Proline#0,1,2/0</td>
<td>20 (44.4%)</td>
</tr>
<tr>
<td>Mersilk#1</td>
<td>15 (33.3%)</td>
</tr>
<tr>
<td>Stapler</td>
<td>10 (22.2%)</td>
</tr>
</tbody>
</table>

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**Figure 1.**

- Proline#0,1,2/0: 44.4%
- Mersilk#1: 33.3%
- Stapler: 22.3%
In our study, no increased pain in wound was noted after use of polypropylene. Another study concluded that patients complained of discomfort at time of polypropylene stitch removal. One study compared catgut and polypropylene for skin repair and concluded the catgut superior to polypropylene but our study made polypropylene subcuticular use superior to all sutures and staplers. This resulted in excellent scar with slightly visible stitch marks. Multiple studies conducted on use of absorbable and non absorbable sutures showed no any difference with regard to complications and cosmeses. But in our study, difference in results is found even among two non absorbable sutures viz polypropylene and Mersilk.

A study conducted in Rawalpindi has dramatically recommended the use of polyglactin for darn repair of hernia after comparison of two sutures viz polyglactin and polypropylene. But our study shows polypropylene as the best with least complications and excellent cosmetic results.

**CONCLUSION**

Our study concluded that polypropylene is the best suture with least postoperative complications and excellent cosmetic result in thyroid surgeries.

**Author’s Contribution:**

Concept & Design of Study: Inayat Ali Zardari

Drafting: Mashooque Ali Khowaja, Abdul Hakeem Jamali

Data Analysis: Altaf Hussain Ghumro, Farkhanda Jabeen Dahri

Revisiting Critically: Inayat Ali Zardari, Mashooque Ali Khowaja

Final Approval of version: Inayat Ali Zardari

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

**REFERENCES**


Frequency and Patterns of Fasting Lipid Profile in Polycystic Ovarian Syndrome

Fatima Zahra¹, Sagheera Anjum², Rashid Naseem¹, Muhammad Athar Khan³

ABSTRACT

Objective: To determine the frequency and patterns of fasting lipid profile in patients presenting with polycystic ovarian syndrome in gynecological and endocrine clinics in a tertiary care hospital

Study Design: A Cross Sectional Survey

Place and Duration of Study: This study was conducted at the Darul Sehat Hospital, Karachi from August 2017 to July 2018.

Materials and Methods: This study was conducted on 110 Female patients who were diagnosed as PCOS on the basis of Rotterdam criteria after taking the history according to predesigned proforma and the required investigations. Lipid profile was analyzed using national lipid association and the national cholesterol education program (NCEP) guidelines for lipids. Postmenopausal, pregnant and patients with diabetes and hypothyroidism were excluded from the study. Informed consent was sought from all patients and collected information was analyzed using the SPSS 21 version.

Results: In our study dyslipidemia was observed in 96.3% of 110 PCOS patients. The mean age was 25.8±5.9 years and mean BMI was 26±4.6 Kg/m². About 80% of PCOS patients had low HDL, 73.5% had high LDL, 31% had high cholesterol, and 12.7% had high TG levels.

Conclusion: In conclusion, dyslipidemia is common in women with PCOS so early detection and prompt treatment of dyslipidemia would definitely improve quality of life and reduce the cardiovascular complications and burden of care.

Key Words: Dyslipidemia, insulin resistance, polycystic ovary syndrome, lipid profile, BMI


INTRODUCTION

In reproductive age group women polycystic ovarian syndrome (PCOS) is one of the most common metabolic disorder.¹ Polycystic ovary syndrome (PCOS) is diagnosed according to Rotterdam Criteria when atleast two of three features of oligo/anovulation, clinical or biochemical hyperandrogenism and polycystic ovaries on ultrasound are found. About 15-30% of women with PCOS also have shown to have regular menstrual cycles.²

Women with polycystic ovarian syndrome commonly have an abnormal lipid profile. In PCOS, an abnormal lipid profile may be related to insulin resistance. The insulin resistance in polycystic ovarian syndrome presents with hyperinsulinemia which has complex effects on the metabolism of lipids, proteins and production of androgen. It is known that dyslipidemia is observed in a large number of women with PCOS, therefore the risk of cardiac and metabolic risks may also be associated with dyslipidemia.³ Obesity, insulin resistance and hyperandrogenism which commonly coexist in PCOS, have shown to have affect the lipid profile either independently or in combination, but the mechanisms of these interactions are not clearly explained.⁴ Dyslipidemia is one the most persistent and highly prevalent risk factor for cardiovascular disorders.⁵ Although the metabolic changes of lipid profiles in young women with PCOS are not completely understood but metabolic health implications of polycystic ovary syndrome (PCOS) including dyslipidemia have been highlighted by a number of international studies.⁶ We also have many young patients with the PCOS but the local data on frequency of dyslipidemia and cardiovascular risks in PCOS is not enough available especially for our ethnic groups. Additionally, the data on patterns of lipid profile abnormalities in these patients is still scarce to highlight the treatment concerns and complications. Hyperlipidemia is one of the risk factor for cardiovascular diseases and in PCOS too, one can develop cardiac diseases alongwith hormonal issues. We need to observe the relationship and patterns of dyslipidemia in order to prevent and treat cardiac complications in PCOS.

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MATERIALS AND METHODS

After taking informed consent a total of 110 women of reproductive age group presenting to the gynecological and endocrine outpatient departments diagnosed as PCOS on the basis of Rotterdam criteria were included in this study. PCOS was diagnosed by the presence of any of the two features of amenorrhea/oligomenorrhea, clinical features of hyperandrogenism as acne and hirsutism or biochemical hyperandrogenism and ultrasound evidence of polycystic ovaries. Women with diabetes, thyroid disorders and pregnancy were excluded from this study.

The weight, height, BMI, age, and marital status were recorded for every patient. The history was taken according to the preformed proforma. The lipid profile and insulin levels was checked on the second day of menstrual cycle with fasting of twelve hours. Other hormonal investigations including luteinizing hormone, and follicle stimulating hormone, thyroid stimulating hormone, prolactin, and testosterone were also done to support diagnosis.

The National Lipid Association and National Cholesterol Education Program (NCEP) guideline for lipids (total cholesterol, triglycerides, HDL cholesterol, LDL cholesterol, and non-HDL cholesterol) was used in all patients with PCOS. The ultrasound pelvis was done on the 5th day of menstrual cycle. The findings of increased ovarian size and/or of at least 12 follicular cysts measuring 2–9 mm were considered indicative of the presence of polycystic ovaries. The data was analyzed by using SPSS version 21. Qualitative variable such as age and BMI categories are presented as frequency (%) while quantitative variables e.g. LDL, HDL, triglycerides, weight, height, cholesterol etc. presented as mean ± SD.

RESULTS

Table No.1: Demographic Characteristics of Study Participants (n = 110)

<table>
<thead>
<tr>
<th>Age in years (Mean + sd)</th>
<th>25.8 ± 5.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age groups n(%)</td>
<td></td>
</tr>
<tr>
<td>14 – 23</td>
<td>54 (49)</td>
</tr>
<tr>
<td>24 – 33</td>
<td>42 (38)</td>
</tr>
<tr>
<td>34 – 43</td>
<td>14 (13)</td>
</tr>
<tr>
<td>Marital Status n(%)</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>42 (38)</td>
</tr>
<tr>
<td>Unmarried</td>
<td>68 (62)</td>
</tr>
<tr>
<td>Weight in kg (Mean + sd)</td>
<td>64 ± 12.8</td>
</tr>
<tr>
<td>Height in meters (Mean + sd)</td>
<td>156 ± 6.2</td>
</tr>
<tr>
<td>BMI (Mean + sd)</td>
<td>26 ± 4.6</td>
</tr>
<tr>
<td>BMI Categories n(%)</td>
<td></td>
</tr>
<tr>
<td>Underweight</td>
<td>4 (3.6)</td>
</tr>
<tr>
<td>Normal</td>
<td>34 (31)</td>
</tr>
<tr>
<td>Overweight</td>
<td>44 (40)</td>
</tr>
<tr>
<td>Obese</td>
<td>48 (25.4)</td>
</tr>
</tbody>
</table>

Table No.2: Values of Total Cholesterol, Triglycerides, HDL Cholesterol, LDL Cholesterol n = 110

<table>
<thead>
<tr>
<th>Variables*</th>
<th>(Mean ± sd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cholesterol (mg/dL)</td>
<td>186 ± 25.5</td>
</tr>
<tr>
<td>Total Cholesterol Categories n (%)</td>
<td></td>
</tr>
<tr>
<td>Desirable: &lt;200 mg/dL</td>
<td>76 (69.1)</td>
</tr>
<tr>
<td>Borderline high: 200-239 mg/dL</td>
<td>30 (27.3)</td>
</tr>
<tr>
<td>High: &gt; or =240 mg/dL</td>
<td>4 (3.6)</td>
</tr>
<tr>
<td>Triglycerides (mg/dL)</td>
<td>102 ± 37.5</td>
</tr>
<tr>
<td>Triglycerides Categories n (%)</td>
<td></td>
</tr>
<tr>
<td>Normal: &lt;150 mg/dL</td>
<td>96 (87.3)</td>
</tr>
<tr>
<td>Borderline high: 150-199 mg/dL</td>
<td>12 (10.9)</td>
</tr>
<tr>
<td>High: 200-499 mg/dL</td>
<td>2 (1.8)</td>
</tr>
<tr>
<td>Very high: &gt; or =500 mg/dL</td>
<td>--</td>
</tr>
<tr>
<td>HDL Cholesterol (mg/dL)</td>
<td>45 ± 6.5</td>
</tr>
<tr>
<td>HDL Cholesterol Categories n (%)</td>
<td></td>
</tr>
<tr>
<td>Normal &gt; or =50 mg/dL</td>
<td>22 (20)</td>
</tr>
<tr>
<td>Abnormal &lt; 50 mg/dL</td>
<td>88 (80)</td>
</tr>
<tr>
<td>LDL Cholesterol (mg/dL)</td>
<td>131 ± 28.8</td>
</tr>
<tr>
<td>LDL Cholesterol Categories n (%)</td>
<td></td>
</tr>
<tr>
<td>Desirable: &lt;100 mg/dL</td>
<td>28 (25.5)</td>
</tr>
<tr>
<td>Borderline high: 130-159 mg/dL</td>
<td>60 (54.5)</td>
</tr>
<tr>
<td>High: 160-189 mg/dL</td>
<td>14 (12.7)</td>
</tr>
<tr>
<td>Very high: &gt; or =190 mg/dL</td>
<td>--</td>
</tr>
</tbody>
</table>

In this study the mean age of patients with PCOS was 25.8 ± 5.9 years. The average BMI was 26±4.6 while 34.6% women were normal or low BMI whereas 65.4 % were either overweight or obese. Mostly i.e. 62 % of women were unmarried.

In our study only 3.63 % of patients had normal lipid profile i.e. dyslipidemia was observed in 96.3%. About 80% of PCOS patients had low HDL; 73.5% have high LDL, 31% have high cholesterol, and 12.7 % have high TG.

DISCUSSION

We have observed that dyslipidemia is common in PCOS and patterns of dyslipidemia are different in various regions as per studies. In one of the local study, the frequency of single lipid abnormality was seen in
PCOS is 71% but in our study it has been increased to 96.3% which is an alarming situation. Even one of the international studies of Kim showed prevalence of dyslipidemia in PCOS around 35.7 % and another study by Rocha showed 76.1%. Hongy et al observed the prevalence of dyslipidemia was 24.7% in patients with PCOS. Such a high rate of dyslipidemia in our patients maybe due to the lifestyle, lack of awareness and noncompliance to medical advice. It demands our attention as it is one of the modifiable risk factor for cardiovascular diseases.

Among lipids HDL is used in SCORE risk assessment for CAD and it has also a strong association with ischemic stroke. We found that low HDL was the commonest dyslipidemia in PCOS. Our study reports low HDL in 80% of PCOS. According to Macut’s study 15mg/dl increment of HDL can reduce 22% risk of CAD. Decrease in HDL-C and increase in TG levels are well known lipid profile characteristics in women with PCOS.

Another lipid LDL was observed to be raised in 74.5% patients and it is a part of Framingham scoring used for increased risk of CAD; it has been observed that there was 20% reduction in relative mortality risk for every 1-mmol/L reduction in LDL-C levels. Macut dejuro reported elevated LDL cholesterol predominantly in all PCOS patients. According to Meta analysis by Kim JJ and Robert, raised LDL was also seen in their studies but they didn’t measure the prevalence; they also noticed TG levels higher than LDL levels.

There are several international studies done to observe the pathophysiology, clinical manifestations and relation of lipids with PCOS and compared to healthy individuals. As stated in one of the comparative study, women with PCOS presented higher total cholesterol levels and LDL-cholesterol whereas HDL-cholesterol was low in PCOS patients compared with healthy women. We observed raised TG in 12.7% and high cholesterol in 30.9% PCOS patients. Macut’s reported that TG started increasing in earlier decade of life as compared to cholesterol which was increased in 3rd decade of life. According to the study conducted in Rawalpindi, decreased HDL was observed in 58% PCOS although it was the most frequent abnormality. Moreover this study reported raised LDL in 11% of PCOS patients and raised TG in 21% and cholesterol 12% of PCOS patients. Shoaib et al found that the levels of total cholesterol, TG, and LDL-C were statistically higher, and level of HDL-C was lower in PCOS patients, when compared with age-matched healthy females. A study from India also reported the most common type of dyslipidemia in Indian population was decreased HDL level (76%), increase in total cholesterol (52%) and triglyceride levels (38%) and 32% patients had elevated LDL. There are studies available for dyslipidemia and PCOS internationally but extensive local data is not available.

CONCLUSION

In conclusion, dyslipidemia is common in women with PCOS so early detection and prompt treatment of dyslipidemia would definitely improve quality of life and reduce the complications and burden of care.

Limitations of the Study: In this study some patients were lost due to cost issues of the investigations. We didn’t exclude the hypertensive patients from the study being unaware of familial hyperlipidemia as one of the cause. We didn’t observe the rise in the levels of lipids or compared the age and BMI to the lipid levels and also didn’t exclude the hypertensive patients from the study.

Author's Contribution:

Concept & Design of Study: Fatima Zahra, Sagheera Anjum
Drafting: Muhammad Athar Khan, Fatima Zahra, Sagheera Anjum
Data Analysis: Muhammad Athar Khan
Revisiting Critically: Muhammad Athar Khan, Fatima Zahra, Sagheera Anjum
Final Approval of version: Muhammad Athar Khan, Fatima Zahra, Sagheera Anjum

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

REFERENCES

Comparison of Hematoxylin and Eosin Stain with Reticulin and Van Gieson Stain in Confirming Presence, Amount and Type of Bone Marrow Fibrosis

Maliha Asif, Sabeen Fatima, Naseem Akhtar, Ghazala Tabassum, Uzma Ishaq

ABSTRACT

Objective: Comparison of Haematoxylin and Eosin stain, with Reticulin and Van Gieson stain in confirming presence, amount and type of bone marrow fibrosis.

Study Design: Descriptive / cross sectional study

Place and Duration of Study: This study was conducted at the Histopathology and Haematology Department of Sheikh Zayed Hospital, Lahore from Jan 2013 to Dec 2014.

Materials and Methods: Bone marrow trephine biopsies of eighty consecutive patients diagnosed with malignant disorders affecting bone marrow were taken, sections were made and stained with Haematoxylin and Eosin, Reticulin and Van Gieson trichrome stain. Identification and grading of bone marrow was done using European consensus 2005 (EC 2005). Types and grades of fibrosis were reported by using frequency and percentages. Data was entered and analyzed on SPSS 20.

Results: In a total of 80 patient studied, 47 (58.75%) patients showed bone marrow fibrosis on Haematoxylin and Eosin stain, while on Silver/Reticulin stain plus Van Gieson stain, 64(80%) of patients were positive for bone marrow fibrosis. If we grade bone marrow fibrosis on basis of Haematoxylin and Eosin stain, 33 (41.25%) patients had no fibrosis, 25 (31.25%) patients had mild fibrosis, 16(20%) patients had moderate fibrosis, and 6(7.5%) had severe fibrosis. While if we grade bone marrow fibrosis on basis of Silver/Reticulin plus Van Gieson stain using European consensus 2005, 16 (20%) patients had MF-0 (no fibrosis), 40(50%) patients had grade1 fibrosis, 21(26.25%) patients had grade 2 fibrosis, while grade 3 fibrosis was only seen in 3 (3.75%) patients.

Conclusion: Patients with various malignant disorders affecting bone marrow have various grades of bone marrow fibrosis, which can be identified more accurately by using special histochemical stains. Special histochemical stain like Reticulin stain plus Van Gieson stain identified 17 (21.25%) more patients having bone marrow fibrosis which were un-identified on Haematoxylin and Eosin stain.

Key Words: Hematoxylin and Eosin stain, Silver/Reticulin stain, Van Gieson Trichrome stain

INTRODUCTION

Cancer is the third leading cause of death in developing economies, accounting for 9.5% of all deaths. It is also the second most common cause of death in the developed world next to cardiovascular disease with a mortality rate of 21%.1 Haematological malignancies are one of the most frequent malignancies among males in Pakistan. Incidence of leukaemia is as high as 23.6 % followed by non-Hodgkin lymphoma (NHL) 15.1%.2 Bone marrow fibrosis is a common morphological finding seen in patients with various haematological disorders especially haematological cancers.3 collagen may have differing relationships to disease has stimulated recent discussions on the importance of distinguishing between increases in these two types of fibres in bone marrow biopsies (Bain et al, 2001; Thiele et al, 2005). Stains that identify reticulin and collagen are routinely available and the use of both stains to evaluate a single biopsy specimen can provide a more complete picture of the amount and nature of bone marrow stromal fibres than performing either one of these stains alone. Bone marrow fibrosis (BMF) is a step-wise evolution from physiologically normal state

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to focal deposition, leading to diffuse increase in reticulin, which finally progresses to collagen fibrosis with or without osteosclerosis. Abnormal cytokines released from platelets and megakaryocytes seems to be essential but not sufficient for fibrosis to occur. Increased in reticulin fibrosis is associated with many benign and malignant conditions while increased in collagen fibrosis is particularly prominent in metastatic cancers and in late stages of severe myeloproliferative disorders.

The clinical implications of increased collagen (collagen fibrosis) is quite different from increased in reticulin (reticulin fibrosis). Collagen fibrosis is not reversible while reticulin fibrosis is often reversible in conditions which are responsive to the treatment. Accurate assessment of the bone marrow fiber content is clinically important for staging of MDS, MPN and lymphoproliferative neoplasms.

Convincing evidence had been produced by several groups that linked degree of BM fibrosis to overall survival in patients with MPN; however, further studies are required to correlate changes in BM fibrosis with molecular markers of disease evolution.

Fibrous tissue of the bone marrow is not well appreciated on Hematoxylin and Eosin stain and require special stains. Van Gieson trichrome stain, Masson’s trichrome stain or Mallory’s trichrome stain is used to identify collagen, while reticulin can be stained by Gomori method or Gordon and Sweets method using silver impregnation technique.

Original staining method used by Gomori to stain reticulin, also enabled assessment of collagen fibers by staining them yellow, while automatic staining procedures with commercially available kits used now a days fails to stain collagen; however, thick reticulin fibers usually represent bundles of collagen. In practice, collagen is almost never revealed unless there is a marked increase in reticulin. Therefore, to detect collagen fibers an additional histological stain such Mallory’s trichrome, Van Gieson or Masson’s trichrome stain has to be used.

**MATERIALS AND METHODS**

This cross sectional descriptive study was carried out in Histopathology and Haematology department of SZH, Lahore; during the period from January 2013 to December 2014.

First 80 patients irrespective of their sex and age presenting in the indoor and outdoor department of Shaikh Zayed Hospital who were diagnosed with malignant disorders affecting bone marrow were included in this study. Patients with history of chemotherapy or radiotherapy and those on thrombopoietin analogues (TPO) were not included in the study.

Three sections were made from each trephine block and stained with Haematoxylin and Eoisin, Reticulin/Silver stain and Van Gieson stain.

Severity and percentage of bone marrow fibrosis was done on H and E stain Identification and grading of bone marrow fibrosis was also done on Reticulin/Silver stain and Van Gieson stain using European consensus 2005 (EC 2005).

All data will be entered and analyzed by using SPSS 20 (statistical package for social sciences). Types and grades of fibrosis will be reported by using frequency and percentages.

Positivity on Van Gieson and Silver stain is compared with positivity on H and E stain and statistical significance will be calculated using Kappa statistics.

**RESULTS**

In a total of 80 patient studied, 47 (58.75%) patients showed bone marrow fibrosis when diagnosis was made on the basis of Hematoxylin and Eosin stain (table 1). On Hematoxylin and Eosin stain 100% of patients with Hodgkin lymphoma, Hairy cell leukaemia and fibrotic phase of MF show BMF. 83.3% of patients with AML and CML are positive for BMF. The percentage of positivity in patients with Multiple myeloma and NHL was 25% and 43.8% respectively, while 50% of patients with cellular phase of MF were positive for BMF. Results were positive in 66.7% and 60% of patients with MDS and CLL respectively, while no patient of ET was positive for bone marrow fibrosis on Hematoxylin and Eosin stain (table 1, fig 1).

On Reticulin plus Van Gieson stain 64 (80%) of patients showed bone marrow fibrosis (table 2). Percentage of positivity in patients suffering from AML, MDS, Hairy cell leukaemia, Hodgkin lymphoma, and fibrotic phase of Primary Myelofibrosis was 100%. In CLL the percentage of bone marrow fibrosis was 80% while 83.3% of patients with CML showed bone marrow fibrosis on basis of this stain. In Multiple myeloma, bone marrow metastasis and NHL 75% patients showed bone marrow fibrosis. In ALL the percentage of fibrosis was 60%, while 50% of patients with cellular phase of MF are positive for BMF. Two patients with ET included in the study were negative for BMF on basis of Reticulin and Van Gieson stain (table 2, fig 2).

If we grade bone marrow fibrosis on basis of H and E stain, 33 (41.25%) patients had no fibrosis, 25 (31.25%) patients had mild fibrosis, 16(20%) patients had moderate fibrosis, and 6(7.5%) had severe fibrosis (table 1, fig 3).

While on Reticulin and Van-Gieson stain 16 (20%) patients had MF-0 (no fibrosis), 40 (50%) patients had grade1 fibrosis, 21(26.25%) patients had grade 2 fibrosis, while grade 3 fibrosis was only seen in 3 (3.75%) patients (table 2, fig 3).
Figure No.1: Bone marrow fibrosis diagnosed on H and E stain in 80 cases of malignant disorders affecting bone marrow

Table No.1: Severity and percentage of bone marrow fibrosis in 80 cases of malignant disorders affecting bone marrow on H and E stain

<table>
<thead>
<tr>
<th>Malignant Disorders affecting B.M</th>
<th>No of cases</th>
<th>Cases of BMF</th>
<th>% of BMF</th>
<th>Severity of Bone Marrow Fibrosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>AML</td>
<td>12</td>
<td>10</td>
<td>83.33</td>
<td>Absent</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Severe</td>
</tr>
<tr>
<td>ALL</td>
<td>5</td>
<td>3</td>
<td>60.00</td>
<td>Absent</td>
</tr>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>NHL</td>
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<td>12</td>
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<td>Moderate</td>
</tr>
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<td>Metastasis</td>
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<td>Multiple Myeloma</td>
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<td>CLL</td>
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<tr>
<td>CML</td>
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<td>Moderate</td>
</tr>
<tr>
<td>MF : Cellular Phase</td>
<td>2</td>
<td>1</td>
<td>50.00</td>
<td>Absent</td>
</tr>
<tr>
<td>Fibrotic Phase</td>
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<td>Absent</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Mild</td>
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<tr>
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</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Severe</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>47</td>
<td>58.75</td>
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</tr>
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<td></td>
<td>Mild</td>
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<tr>
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<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Severe</td>
</tr>
</tbody>
</table>

Figure No.2: Bone marrow fibrosis diagnosed on Reticulin + Van Gieson stain in 80 cases of malignant disorders affecting bone marrow

Table No.2: Percentage and grades of bone marrow fibrosis according to European consensus on grading of bone marrow fibrosis using Reticulin and Van Gieson stain

<table>
<thead>
<tr>
<th>Malignant Disorders affecting B.M</th>
<th>No of cases</th>
<th>Cases of BMF</th>
<th>% of BMF</th>
<th>Grades of Bone Marrow Fibrosis</th>
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</thead>
<tbody>
<tr>
<td>AML</td>
<td>12</td>
<td>10</td>
<td>100.00</td>
<td>MF-0</td>
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<tr>
<td></td>
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<td>MF-1</td>
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<tr>
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<td></td>
<td>MF-2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MF-3</td>
</tr>
<tr>
<td>ALL</td>
<td>5</td>
<td>3</td>
<td>60.00</td>
<td>MF-0</td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
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<td></td>
<td>MF-3</td>
</tr>
<tr>
<td>NHL</td>
<td>16</td>
<td>12</td>
<td>75.00</td>
<td>MF-0</td>
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<tr>
<td></td>
<td></td>
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<tr>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MF-3</td>
</tr>
<tr>
<td>Hodgkin lymphoma</td>
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<td>1</td>
<td>100.00</td>
<td>MF-0</td>
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<td>MF-2</td>
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<tr>
<td>Metastasis</td>
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<td>6</td>
<td>75.00</td>
<td>MF-0</td>
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<td>MF-2</td>
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<tr>
<td>Multiple Myeloma</td>
<td>8</td>
<td>6</td>
<td>75.00</td>
<td>MF-0</td>
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<tr>
<td>CLL</td>
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<td>8</td>
<td>80.00</td>
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<tr>
<td>CML</td>
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<td>5</td>
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<td>MDS</td>
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<td>MF-2</td>
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<tr>
<td>Hairy cell leukemia</td>
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<td>100.00</td>
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<td>MF-0</td>
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<td>MF-2</td>
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<tr>
<td>Total</td>
<td>80</td>
<td>64</td>
<td>80.00</td>
<td>MF-0</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td>MF-3</td>
</tr>
</tbody>
</table>

Figure No.3: Relation and comparison of two grading systems done on basis of both Reticulin+Van Gieson stain (EC-2005) and H/E stain alone in 80 cases of malignant disorders affecting bone marrow

Comparison of Hematoxylin and Eosin stain with Reticulin plus Van Gieson stain: Hematoxylin and Eosin identifies only 47 (58.75%) cases of BMF while Reticulin and Van Gieson stain identifies 64 (80.0%) cases that is 17 more positive cases of BMF (table 3). The 47 cases which were positive on Hematoxylin and Eosin stain were also positive on Reticulin+Van Gieson stain.16 cases were negative on and Reticulin+Van Gieson stain (table 3).
So the agreement between H and E and Reticulin + Van Gieson stains was 63/80 (78.8%) with Kappa statistic of 0.525 and a p-value <0.001 (table 3, table 4).

Table No.3: Comparison of results of H and E stain with Reticulin + Van Gieson stains together on trephine biopsies from 80 patients with malignant disorders affecting bone marrow

<table>
<thead>
<tr>
<th>H/E stain</th>
<th>Reticulin and Van Gieson stain together</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive</td>
</tr>
<tr>
<td>Positive</td>
<td>47</td>
</tr>
<tr>
<td>Negative</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>64</td>
</tr>
</tbody>
</table>

Table No.4: Association between H and E stain and Reticulin+Van Gieson stains by using Kappa test in 80 cases of malignant disorders affecting bone marrow

<table>
<thead>
<tr>
<th>Symmetric Measures</th>
<th>Value</th>
<th>Asymp. Std. Errora</th>
<th>Approx. Tb</th>
<th>P.- value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure of Agreement</td>
<td>Kappa</td>
<td>0.525</td>
<td>0.090</td>
<td>5.337</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>80</td>
<td></td>
<td></td>
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</tbody>
</table>

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

DISCUSSION

For detection and grading of bone marrow fibrosis the use of Silver/Reticulin stain and Trichrome stain was much more effective when compared with H&E stain. We noticed that 41.25% of patients had no marrow fibrosis when their trephine biopsy sections were stained with H&E stain, while this percentage reduced to 20% when Reticulin and Van Gieson stain were used. Furthermore the H&E stain identified fibrosis without determining its exact degree, which is important for the definite diagnosis and evaluation of effectiveness of therapy and transformations in Myeloproliferative disorders (MPD).

A study, very similar to our present study was conducted in Baghdad. Stored paraffin embedded trephine blocks from 132 patients with CMPD were taken. Both males and females irrespective of age were included in the study. The grading system used, similar to our present study was European consensus on grading of bone marrow fibrosis. Trichrome stain and Reticulin stain was used for the demonstration of collagen and reticulin fibers respectively. Although Masson’s trichrome stain and Gomori reticulin stain was used for demonstration of collagen and reticulin respectively instead of Van Gieson trichrome stain and Gordon and Sweet reticulin stain used in our present study for demonstration of collagen and reticulin fibers respectively. The results revealed that when H and E stain was used 90 (68.18%) patients were negative for BMF but when Reticulin stain plus Van Gieson stain was applied on trephine biopsy sections, only 39 (29.5%) patients were negative for BMF. According to our own present study 33(41.25%) patients did not show BMF on H and E stain while only 16(20%) patients did not have BMF (MF-0) when Reticulin plus Van Gieson stain was used. Baghdad study showed that 15(11.36%) patients had mild fibrosis, 15(11.36%) patients had moderate fibrosis and 12 (9%) patients diagnosed to have severe BMF on H and E stain, while according to our own present study 33 (41.25%) patients had no fibrosis, 25 (31.25%) patients had mild fibrosis, 16(20%) patients had moderate fibrosis, and 6(7.5%) had severe fibrosis. While on Reticulin plus Van-Gieson stain according to Baghdad study 46 (34.84%) patients had MF-1, 42(31.81%) patients had MF-2 and 5 (3.78%) patient had MF-3. While according to our own study, 40(50%) patients had grade1 fibrosis, 21(26.25%) patients had grade 2 fibrosis, while grade 3 fibrosis was only seen in 3 (3.75%) patients on Van Gieson plus Reticulin stain.

The difference in the results between these two studies is most likely due to the difference in study population which was CMPD patients in Baghdad study and patients with malignant disorders affecting bone marrow (which also includes CMPD patients) in our present study. Percentage of severe BMF is more on H&E stain than on Reticulin + Van Gieson stain in both these studies.

CONCLUSION

Patients with metastatic cancers and various haematological cancers have various grades of bone marrow fibrosis which may be negative on Haematoxylin and Eosin stain used during the initial diagnosis of the disease. The use of Silver/reticulin plus Van Gieson stain to identify reticulin and collagen respectively and use of proper grading system is essential to give more precise status of bone marrow fiber content. This is very important in distinguishing between various myeloproliferative neoplasms, the transition of one myeloproliferative condition to another, and in making correct therapeutic choices.

Author’s Contribution:
Concept & Design of Study: Maliha Asif
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Data Analysis: Ghazala Tabassum, Uzma Ishaq
Revisiting Critically: Maliha Asif, Sabeen Fatima
Final Approval of version: Maliha Asif

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


Outcome of Fixation of Comminuted and Unstable Intertrochanteric and Sub-Trochanteric Femoral Fractures by using Proximal Femoral Locking Plate

Zulfiqar Ahmed¹, Muhammad Nasir Ali² and Shahid Riaz¹

ABSTRACT

Objective: The purpose of this study was to evaluate the functional and radiological outcome and post-operative complications associated with proximal femoral locking plate applied for the treatment of intertrochanteric and sub-trochanteric femoral fractures.

Study Design: Prospective case series study

Place and Duration of Study: This study was conducted at the Orthopaedic Complex, Quaid-e-Azam Medical College/ Bahawal Victoria Hospital, Bahawalpur from March, 2017 to February, 2018.

Materials and Methods: 23 patients (11 males and 13 females) with age range from 20 to 70 years having comminuted and unstable intertrochanteric (according to Boyd and Griffin classification) and sub-trochanteric femoral fractures (according to Russell-Taylor classification) were operated. Post-operative follow up and evaluation was done for six months by using Harris Hip Score.

Results: Out of 23 patients operated, 01(4.3%) patient developed superficial skin infection, 01(4.3%) patient had implant failure due to early weight bearing while another 01(4.3%) suffered non-union for which bone grafting was done. Overall results at six month follow up according to Harris Hip Score were excellent in 08(34.7%), good in 09(39.1%), fair in 05(21.7%) and poor in 01(4.3%).

Conclusion: This was concluded that Proximal Femoral Locking Plate is a good device for the treatment of comminuted intertrochanteric and sub-trochanteric femoral fractures especially with associated osteoporosis and lateral wall instability.

Key Words: Intertrochanteric fracture femur, Proximal femoral locking plate

INTRODUCTION

Fractures of the proximal femur are among the common injuries and have bimodal presentation¹. In the elderly osteoporotic people, these fractures usually occur due to low energy trauma like fall from standing posture¹ while in the young population the cause is usually high energy trauma like road traffic accidents. The resulting fractures are usually intertrochanteric and sub-trochanteric fractures associated with variability of comminution. The conventional methods of treatment are non-operative and operative. The non-operative method of treatment demands prolonged recumbent period and is usually associated with high rates of complications associated with a bed ridden person like respiratory and urinary infections, deep vein thrombosis, pressure sores, pulmonary embolism² and is usually reserved for the very elderly people having pre-existing comorbidities which render them unfit for anesthesia. The goal of treatment for the patients of these fractures is the early mobility to avoid the complications of the prolonged bed rest and this can be achieved by stable fixation of these fractures. Traditionally these fractures were fixed with dynamic hip screw (DHS)³, dynamic condylar screw (DCS)⁴, proximal femoral nail (PFN)⁵ and angle blade plate ⁶. The DHS, DCS and angle blade plates have high rates of cutout, fixation failure⁷ and medialization especially when performed in osteoporotic patients or those having unstable fractures due to associated severe comminution. The PFN is a good option for these fractures but unsuitable in case of associated greater trochanteric or lateral wall fractures⁸,⁹. The concept of

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Printed: February, 2019
locking plate and screw technology effectively addresses the issues of osteoporosis and comminution\textsuperscript{10, 14}. The proximal femoral locking plate is one such device which can be used to treat these fractures while working as fixator interne\textsuperscript{15} due to the angle stable property of its locking screws with good results even in osteoporotic patients having comminuted fractures\textsuperscript{16}. The objective of this study was to evaluate the functional and radiological outcome and post-operative complications associated with proximal femoral locking plate applied for intertrochanteric and sub-trochanteric femoral fractures.

**MATERIALS AND METHODS**

This was a prospective case series study done at Quaid-e-Azam medical college/ Bahawal Victoria hospital Bahawalpur from March, 2017 to August, 2018. 23 patients with complex proximal femoral fractures (intertrochanteric and sub-trochanteric fractures based on Boyd/Griffin and Russell-Taylor classifications respectively) were operated by application of PFPL. 11 were males and 12 were females. 15 were having fractures on right side and 08 on left side. Age range was from 20 years to 70 years (Table 1). All patients having close complex and comminuted intertrochanteric and sub-trochanteric fractures with two weeks duration and patients having associated osteoporosis and those fit for anaesthesia were included in the study while patients having open fractures, pathological fractures, associated femoral shaft or neck fractures and those unfit for anaesthesia were excluded from the study.

**Surgical Technique:** After pre-operative evaluation for comorbid conditions and anaesthesia all patients were operated in supine position under general or spinal anesthesia on traction table and under C-arm image intensifier control. Fracture fragments were reduced closed by traction or openly as needed on case to case basis. Lateral skin incision was made extending from tip of greater trochanter to distally as needed, fascia lata opened, vastus lateralis detached from its origin at proximal femur and provisional K-wire stabilization of the reduced fracture fragments done as needed. Appropriate length plate placed over the lateral surface of the proximal femur and fixed with appropriate size locking screws. C-arm image intensifier was used during surgery to assure the proper reduction of fracture fragments and to avoid screw penetration in or across the joint. Drain placed and wound closed in layers (Fig.1 & Fig.2)

**Follow UP:** Drain was removed within forty eight hours and patient advised to up and about as soon as tolerated with only touchdown weight bearing on the operated leg. Stiches were removed at two weeks and further physical and radiological follow up done at six weeks, twelve weeks and six months. Final evaluation done according to Harris Hip Score.

**RESULTS**

Postoperatively the patients were followed for a period of six months. Out of 23 patients operated 01(4.3%) developed superficial skin infection which was treated by antibiotics and dressings. 01(4.3%) patients faced implant failure due to early weight bearing against the post-operative advice. Non-union was noted in 01 patients for which bone grafting was done. The likely cause of the non-union was heavy smoking. No patient was lost to follow up. Functional outcome according to Harris Hip Score was excellent in 08(34.7%) patients, good in 09(39.1%), fair in 05(21.7%) and poor in 01(4.3%) patients (Table-2).

**Table No.1: Demographic Data**

<table>
<thead>
<tr>
<th>Total Number of Patients</th>
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</thead>
<tbody>
<tr>
<td>Male</td>
<td>11</td>
</tr>
<tr>
<td>Female</td>
<td>12</td>
</tr>
<tr>
<td>Right Sided Injury</td>
<td>18</td>
</tr>
<tr>
<td>Left Sided Injury</td>
<td>05</td>
</tr>
</tbody>
</table>

**Table No.2: Results/functional outcome (According to Harris Hip Score)**

<table>
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<tr>
<th>Total Number of Patients</th>
<th>23</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>08(34.7%)</td>
</tr>
<tr>
<td>Good</td>
<td>09(39.1%)</td>
</tr>
<tr>
<td>Fair</td>
<td>05(21.7%)</td>
</tr>
<tr>
<td>Poor</td>
<td>01(4.3%)</td>
</tr>
</tbody>
</table>

**Figure No.1: Pre-Operative**

**Figure No. 2: Post-Operative**
DISCUSSION

Proximal femoral fractures are among the common injuries and have a wide spectrum of fracture geometry which extends from simple stable to grossly unstable and comminuted fractures and the goal of treatment in these fractures is early mobility to prevent the complications of prolonged bed rest. Traditional implants for fixation of these fractures are DHS, DCS, angled blade plate an intramedullary devices with associated merits and demerits for each device. DHS, DCS and angled blade plate are unsuitable for grossly comminuted unstable fractures involving the lateral wall and especially in osteoporotic patients due to high rates of cut through and fixation failure. Intramedullary devices also are not suitable for fractures involving greater tuberosity or lateral wall. Proximal femoral locking plate addresses most of the issues due to its angle stability and locking plate and screw mechanism which acts like fixator interne and provide greater pullout strength.

In a study of 33 patients Chalise et al reported 95% union rate with non-union in 1 case and implant breakage in another patient. Excellent and good results based on Harris Hip Score were 87.87%. In another study of 21 patients Ibrahim and Meleppuram reported additional procedure of bone grafting in 2 patients and 84.5% Harris Hip Score. Hossain MM and colleagues reported excellent results in 15 patients, good in 2, fair in 2 and poor in 1 out of the 20 patients operated for evaluation of the results PFLCP.

In our study of 23 patients post-operative superficial infection was noted in 01(4.3%), implant failure due to non-compliance and early weight bearing in 01(4.3%) patients and non-union in 01(4.3%) cases. Overall Harris Hip Score was 88.8% with excellent results in 08(34.7%), good in 09(39.1%), fair in 05(21.7%) and poor in 01(4.3%).

CONCLUSION

We concluded that PFLLP is a good device for the treatment of comminuted intertrochanteric and subtrochanteric fractures especially with associated osteoporosis and lateral wall instability. However our study is limited to only small number of patients and needs further study for evaluation of the outcome in intertrochanteric and sub-trochanteric regions of proximal femur.

Author’s Contribution:
Concept & Design of Study: Zulfiqar Ahmed
Drafting: Muhammad Nasir Ali Shahid Riaz
Data Analysis: Zulfiqar Ahmed
Revisiting Critically: Muhammad Nasir Ali Zulfiqar Ahmed
Final Approval of version: Zulfiqar Ahmed

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

REFERENCES

A Study of Pattern of Burn Injury at Civil Hospital Karachi
Roohi Ehsan1, M. Faiz ud Din2, M. Irfan Khan2, Wasiq Ahmed1, Syed Perwez Alam1 and Javed Iqbal2

ABSTRACT
Objective: To determine pattern of diversified types of injury.
Study Design: Retrospective study
Place and Duration of Study: This study was conducted at the Medico-Legal Department, Civil Hospital Karachi from January 2012 to July 2015.
Materials and Methods: The medico legal records of 3856 patients in the Burn Centre Civil Hospital Karachi were selected and collected. The data was reviewed under the consideration of type of burns, sex and fatality. The data was analyzed using SPSS version 16 and frequencies and percentages were obtained for variables according to the methodology.
Results: In study of 3856 patients, majority of them sustained injury from fire burn, electrical burn, scars and chemical burn as 76.11%, 13.07%, 8.80%, 2.02% respectively. Male to female ratio of 1.58: 1.0 is observed in the study mold, showing a male dominance. The mortality rate was 37.73% with morbidity of 62.27%.
Conclusion: Majority of burn victims were male who sustained injury from a fire burn as they are more exposed to external plunge in encompassment especially at work places in our society. An intensive program is needed to curtail and counter burn injuries along with further evaluation to achieve estimable results.
Key Words: Burn injury, mortality, fire burn, scalds.

INTRODUCTION
Burn has been defined as a type of thermal injury produced by heat, electricity, chemicals, radiation, lightning, explosions and friction. Burn injuries is a unique form of trauma, which is sometimes avertible are characterized among the most severe injuries an individual can experience, the most annihilating of all injuries and sometimes may become a major global public health crisis1,2. The severity can be gauged from the belief that ordering punishment by burning according to Muslim faith is reserved for none other than God.
It is interesting to note that the causes, types and incidence of burns differ in different countries and are influenced by factors such as age, sex, financial status, local, social customs and physical environment3,4. It is the fourth leading cause of injury after road traffic accident, fall and violence.

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Printed: February, 2019

Nearly 11 million burn victims received medical treatment and accounted for about more than 300,000 deaths annually. Overcrowding and cooking in an openly built kitchen are the major problems of the developing countries contributing to 90% of the burn victims worldwide. It has been observed that males have twice the mortality as females in developed world which is contrary to developing world where females have twice the risk of males5.
In this mortal world also, burn injury is a major public health concern, especially in third world countries6,7. As a matter of fact, 9 out of 10 incidents of burn occur in underdeveloped countries. It is pity that these countries lack basic infra structure to prevent the incidence or reduce its severity8. Major factors influencing burn outcome are the degree and duration of heat exposure. Young children, old people and women are more susceptible. It is more dangerous if face, chest or genitals are involved9. The fatality of burns and its outcome is more related to the types of burn and age10. India reported 700,000-800,000 burn victim per year in which females were majorly involved11.

MATERIALS AND METHODS
This is a retrospective study of all medico-legal cases of burn injuries in major government teaching hospital of Karachi from January 2012-July 2015. The Burn Centre of Civil Hospital is a major burn centre which is well equipped and has specialized and trained doctors and staff to handle and manage the burn
injuries. Due to this majority of medico legal burn cases were referred from different hospitals to Civil Hospital. The medico legal records of 3856 patients in the Burn Centre Civil Hospital Karachi from January 2012-July 2015 were selected and collected. The data was reviewed under the consideration of type of burns, sex and fatality. The data was analyzed using SPSS version 16 and frequencies and percentages were obtained for variables according to the methodology.

RESULTS

A total of 3856 burn patients were admitted in Civil Hospital Karachi from January 2012-July 2015. Total number of 1455 patients died with a mortality rate of 37.73%. The recovered patient were 2401 with a morbidity rate of 62.27% & mortality of 37.73% (Table-1, Chart 1 &2).

Table No-1: Frequency of fatality of Burn Patients

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>July 2015</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal</td>
<td>302</td>
<td>384</td>
<td>502</td>
<td>267</td>
<td>1455</td>
<td>37.73%</td>
</tr>
<tr>
<td>Non-fatal</td>
<td>680</td>
<td>704</td>
<td>705</td>
<td>312</td>
<td>2401</td>
<td>62.27%</td>
</tr>
<tr>
<td>Total</td>
<td>982</td>
<td>1088</td>
<td>1207</td>
<td>579</td>
<td>3856</td>
<td>100%</td>
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</tbody>
</table>

DISCUSSION

Burn emblematizes a major health problem worldwide with high mortality, morbidity and economic loss even with small burns. The commonness of medico-legal burn injuries in Pakistan is very high like any other under developed country. Burn is one of the leading causes of death in Karachi. It is also due to retrenchment of awareness and less preventive measures. As we report a mortality rate of about
37.73% due to burn in Karachi during our study period, the world wide reported mortality rate due to burn injuries were 20% in Osogbo, Nigeria, 6.9% in Rotterdam, Netherland and 6.3% in Turkey. The reported mortality rate of burn patients in different cities of Pakistan were 29.7% in Wah, 19% in Peshawar and 21% in Rawalpindi. The reported mortality rate due to burns in different Asian countries is variable Sharma et al reported a relatively low annual mortality rate of 0.6 per 1,000,000 in Kuwait. Mashkarey et al reported a mortality rate of 2.2 per 100,000 in Bangladesh in the year 2011. A study from Iran reported an annual fatality rate of 5.6 death per 100,000. A study from India reported an even higher mortality rate of about 15.1 per 100,000 in year 2003. The non-fatal cases show the morbidity rate of 62.27%, out of which majority of patients were recovered and discharged from the hospital, some patients left against medical advice and very few patients were referred to other departments of the hospital.

In this abstraction 76.11% of the total cases were of fire burn followed by scalds (13%), electrical burn (8.80%) and chemical burns as (2.02%). A similar study was conducted in Civil Hospital Karachi during the period of 2006 to 2010 showing that fire burn (79%) was the most common followed by electrical burn (7.7%), scalds (5.2%) and chemical burns (3%) respectively. Males are usual victims of burn injuries as observed in our study as it is the responsibility of male to earn money and for which he has to go outside and adopt different occupations at different places with more risk for injuries including burn injuries. We found that males (61.33%) are more affected than females (38.67%) with a ratio of 1.58:1.0 in our study. The study at Khyber teaching hospital, Peshawar in 2011 also showed male dominancy of 51.1% over female 48.8% with a ratio of 1.04:1. A five year study period from 2006 to 2010 of burn injury by Ahmer, et al in Civil hospital highlighted male to female ratio of 1:0.8.

Major complications of burn are infection which may cause septicemia, dehydration leading to shock, disfigurement and disability. Despite major advances in therapeutic strategies for the management of patients with severe burns, including improved resuscitation, enhanced wound coverage, infection control and management of inhalation injuries, the consequences of severe burns are acromatic and results in complex metabolic changes that can adversely affect every organ system. The results we found are needed to be taken under consideration as the incidence of burn injuries are accounting a large number of deaths among people due to shock and sepsis. In addition these burn injuries sometimes result in a long duration of admission in the hospital requiring lot of consternation and support which affects the patients physically, psychologically and economically. A large number of cases require surgical intervention to limit the disabilities. But in spite of all these measures most of the patients suffer from ruination which eventually lead into death.

CONCLUSION

Majority of burn victims were male and sustained injury from fire burn. An intensive cognizance program is needed to reduce and prevent the burn injuries. The most important step in reducing the incidence of burn injuries is through proper mass education. Effective prevention requires a thorough understanding of major risk factors.

Suggestions: Action which can reduce the risk for burn include installing smoke detectors, teaching children about fire and burn prevention in schools, stop smoking and heavy alcohol use, wearing flame retardant clothes, planning emergency exits route in houses, schools and work places, practicing fire drills and fire extinguisher should be made available to more places and people should provided with awareness for their use. Actions to reduce the severity of burns once it occurs are given first aid immediately, getting prompt medical attention, if hospitalization is necessary being treated by dedicated burn unit with staff specially trained in burn care.

Keeping in view enormity of the problem and the size of the city, the number of specialized units for treating exclusive burn injuries should be increased. Emergency response teams should be formed comprising of trained and skilled staff that can respond and take charge of burn cases in outdoor situations.

To raise funds for burn units, philanthropists should be taken on board and encouraged to donate generously. The government could facilitate by giving tax exemptions to the donors. Many of the fire incidents being due to short circuiting of substandard electrical installation, the government should frame rules for quality control of electrical wiring and goods both at residential and industrial set-ups.

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Final Approval of version: Roohi Ehsan

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

REFERENCES
Incidence and Management of Breast Abscess in Lactating and Non Lactating Females


ABSTRACT

Objective: The rationale of our study is to compare the incidence in lactating and non lactational mothers and to find out the best management option for the benefit of patients suffering from the breast abscess.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at the Surgical Department of Peoples Medical College Hospital from September 2016 to August 2018.

Materials and Methods: All the patients lactational and non lactational were admitted through Surgical OPD and emergency Department of PMC Hospital Nawabshah Sindh. Detailed History, Clinical Examination and Required biochemical as well as imaging investigations were done followed by different surgical procedures.

Results: Total 50 patients were included in this study. Of 50, 40 (80%) were lactating mothers and 10 (20%) were non lactating girls and women. Pus aspiration by wide bore cannula and ultrasound guided was done in some patients. Incision drainage was done in most of patients. Culture and sensitivity of pus showed Staphylococcus Aureus the most common organism causing the breast abscesses in our study.

Conclusion: Incision drainage produced the excellent results with no recurrence rate. C/S of pus detected the organism involvement and the required antibiotics were started and got good results in healing mechanism.

Key Words:- Breast Abscess, lactation, Pus Aspiration, Incision Drainage, Staphylococcus Aureus

INTRODUCTION

A breast abscess is simply defined as an infection in the breast. It commonly affects women aged between 18 to 50 years having lactational and non lactational status. Seldom is it found in neonates. Generally, non lactational abscesses are noted in obese patients and smokers.1

These are the commonest benign breast infections occurring during pregnancy and puerperium. The incidence of breast abscess ranges from 0.4% to 11% among all breastfeeding mothers. Globally, the mastitis in breastfeeding mothers ranges from 1-10%. The recent advances in this connection entails the increase incidence of mastitis upto 33%.2

Staphylococcus Aureus is the most common organism gaining entry into breast through cracked nipple. Rarely, this infection is hematogenous.

Initially, the infection is confined to a single segment later on involving other segments also. Milk is the best culture medium for bacterial proliferation in this case. Loose parenchyma of breast and accumulated milk in affected segments enhances infection to spread rapidly within the stroma and through the milk ducts. The bacteria are excreted in milk.3

In 1957, Zuska unveiled this disease as lactiferous fistulas also called Zuska’s disease. Bundred et al discovered the anaerobic bateria causing breast abscesses in smokers only.4

The causes of breast abscess are various micororganisms predominantly bacteria. The staphylococcus aureus is the most common bacteria causing this disease. A few cases of breast abscess involve multiple bacterias with isolation of aerobes and anaerobes. Aerobes isolated are staphylococcus, streptococcus, enterobacteriaceae, corynbacterium, escherichia coli, and pseudomonas.

Anaerobes involved are peptostretococcus, propioni-bacterium, bacteroides, lactobacillus, eubacterium, clostridium, fusobacterium and veillonella. Smokers commonly harbor anaerobes. Least common bacteria involved includes bartonellahenselae, myobacteria, parasites and magot infestation. Unusually, Human immunodeficiency virus (HIV) initially present as breast abscesses. Typhoid is the commonest cause of developing breast abscess in those countries where it is commonly present.
regardless of their mode of delivery. The diagnosis is made on clinical examination of peripheral lymph nodes and involvement of subareolar area. Treatment involves incision and drainage followed by antibiotics or a catheter drain. Ultrasound guided aspiration is done for those abcesses which are ≥3 cm. The incidence of this disease is prevalent. Duct ectasia and tuberculosis also lead to abscess formation. The pathophysiology of diseases arises from mastitis. Bacteria originating from the mouth of baby gets entry into breast where it gets the cultural environment of maternal milk for rapid replication. Stagnant milk and its overproduction enhances its replication leading to mastitis. It this inflammation is not treated in time, it converts into abscess. Lactational breast abscess usually occur in periphery of breast. There are two types of breast abscess. One is lactational breast abscess and other is non lactational one. Risk factors for its formation of lactational type are first pregnancy after 30 years, pregnancy prolonged to more than 41 weeks and inflammation of breast. Non lactational breast abscesses are sub divided into central, peripheral or skin associated. Patients with diagnosis of non lactational breast abscess, diabetes mellitus and smokers are prone to develop recurrent infections. This type is associated with squamous metaplasia of lacteferous duct epithelium, duct obstruction and duct ectasia.

Clinically, the patient suffering from breast abscess present with complaint of painful, red and fluctuant breast lump along with fever, malaise and enlarged lymph nodes in axilla. This disease is diagnosed clinically on the basis of history and examination. Location also helps in the diagnosis as most of the lactational abscess present peripherally whereas as non lactational are seen in sub areolar areas.

Apart from routine biochemical investigations, Ultrasound of breast is significantly helpful in its diagnosis. Fine needle aspiration is also done to diagnose and treat these abscesses. Drained pus is sent for histopathology to exclude malignancy. Biopsy is indicated in suspected cases. Milk, nipple discharge, aspirated material and excised tissue are sent for histopathological diagnosis. Mamography plays limited role in its diagnosis. Tuberculin skin test in suspected cases of tuberculosis is an additional test to diagnose.

Generally these abscesses are treated by analgesics (ibuprofen and paracetamol), breast support breast emptying by self or suction device, breast feeding and antistaphylococcal antibiotics. Specific treatment includes pus aspiration, ultrasound guided needle aspiration/catheter drainage and incision drainage. Regular emptying of the affected breast is important part of management. Mechanical suction devices are usually suggested in cases of subareolar abscesses or where feeding for baby/breast emptying is impossible due to severe pain or dressings. Drug induced suppression of lactation should not be done as it has complication of causing nausea and vomiting to patient. It has also negative effect on immune system and growth of the baby.

Antibiotics to treat mastitis are beta lactamase-resistant pencillins (Cloxacillin, dicloxacillin or flucloxacillin) as pencillins are acidic so is milk. Therefore these drugs are poorly concentrated in milk. Erythromycin is alkaline and well concentrated in milk so remains active in milk. Cephalixin or clindamycin can be used as alternative to erythromycin. Co-Amoxiclav use in these patients render them to induce MRSA.

The Ultrasound guided aspiration along with antibiotics has proved to be effective as treatment of the breast abscess. The size of abscess less than 3 cm are aspirated under guidance of ultrasound whereas ultrasound guided catheter drainage are indicated for abscesses ≥3 cm or larger. Another option to treat this disease is incision and drainage followed by multiple dressings. This surgical treatment has important role in cases which do not respond to aspirations and antibiotics. Abscess possessing thick pus, resistant bacteria, muli loculated abscesses, tuberculosis, inflammatory carcinoma or an immunocompromised host.

MATERIALS AND METHODS

This is a cross sectional study conducted with in 2 years over 50 patients, admitted at Surgical Department of Peoples Medical College Hospital from September 2016 to August 2018. All the patients were admitted through Out Patient Department (OPD) and emergency Department. They were suffering from breast abscesses. History was taken and thorough clinical examination of normal as well as affected breast along with axillary lymph nodes was done. Patients presented with complain of painful swelling in right or left breasts or both simultaneously. Fever was also noted from mild to high grade. Tacchycardia was also found on general physical examination. Regional lymph nodes were also enlarged in some patients. Hot and redness was found in breast on local examination of the affected breast. Some patients came with burst abscesses having multiple necrotic material on examination. The provisional diagnosis was made. Routine blood investigations were done in which white blood cell (WBC) was raised due to inflammation in breasts. The patient was also advised to get ultrasonography of both breasts which told the volume of pus present in the breast. The accurate diagnosis was made. Surgery was planned after briefing the surgical procedure to patient herself as well as attendants along with per operative and postoperative complications. Consent was taken and patients were shifted to operation theater for the incision drainage and pus for culture/biopsy wherever required.

RESULTS

This study included total 50 patients. Of them, 40 (80%) were lactating mothers and 10 (20%) were non lactating females. All patients were operated through pfannenstiel incision but wound closure was done by
different threads of different sizes. There was age difference among all patients. The Lactational patients aged between 20 to 50 years where as 3 patients out of total 10 non lactational aged between 15 to 19 years and remaining 7 patients were of 51 to 70 years. 20 lactating mothers had first pregnancy before 30 years and 20 had first pregnancy after 30 years of their age. Different surgical procedures were done to treat the disease. Pus aspiration was done in 10 (20%) patients whereas 13 (26%) patients were treated by Ultrasound guided aspiration. Remaining 27 (54%) patients went under incision drainage and debridement of necrotic tissues as is shown in graph 2 below. Only 1 (2%) came with recurrence of breast abscesses having Diabetes mellitus and smoking history. She was non lactational old age lady.

Pus drained from the patients was sent for culture and sensitivity that showed the presence of Staphylococcus Aureus in 32 (64%) patients. Pseudomonas was detected in 7 (14%) patients whereas Escherichia Coli was also found to be present in 7 (14%) patients. 2 (4%) patients developed the breast abscess due to the infection caused by Mycobacterium and bacteroids affected 2(4%) patients as is shown in table 2 below

**DISCUSSION**

The breast abscess is the condition prevalent commonly among lactating women and rarely is it found among non lactating females. Patients usually present in different ways from simple small sized abscess to large ones. A few patients come with complain of burst abscess. In India, large abscess are treated by suction drainage but this practice is not applied in our setup because of recurrence. Sharma has called ultrasound guided aspiration as the best one as these facilities are available in India even in remote areas but in our study, open incision drainage is considered to be the best option because the recurrence rate is zero and no multiple visits are required to drain the abscess. In simple aspiration, there are chances of developing fistula formation but in our study no fistula formation noted. For the purpose of cosmoses, aspiration of breast abscess is done throughout the world but the defect in this method is that it requires multiple visits at least daily for 5 to 7 days which is then followed by ultrasound scan for confirmation of any remaining collection in the breast. There is another more limitation for aspiration that every abscess cannot be aspirated. Necrosis in abscess is treated by open surgical procedure. In our study, patients also paid multiple visits on different occasions. Ankit Bharat in study has claimed the increasing ratio of non lactational abscesses but in our study lactational cases are common and frequent. Same study also showed recurrence in non lactational patients that is similar to our study. In one study, cigarette smoking, hypertension and diabetes Mellitus has been shown as causative factors for recurrence but in our study, smokers and diabetics old age females developed recurrences. The smoking toxins affect the ductal secretions which cause fibrosis in the retroareolar tissues. On study concluded the 97% and 81% accuracy of drainage by ultrasound guided aspirations in lactating and non lactating females respectively. In our study, we also needed no any second aspiration of abscess by ultrasound guided.

**CONCLUSION**

Incision drainage produced the excellent results with no recurrence rate. C/S of pus detected the organism involvement and the required antibiotics were started and got good results in healing mechanism.
Author's Contribution:
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Revisiting Critically: Mashooq Ali Khowaja, Abdul Hakeem Jamali
Final Approval of version: Mashooq Ali Khowaja

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

REFERENCES
Mental Health Beliefs: Causes of Mental illnesses According to Attendants of Mentally ill Patients in Pakistan.

Imran Javid, Muhammad Faisal, Rana Mozammil Shamsher Khan and Sana Iqbal

ABSTRACT

Objective: The objective of the current study was to investigate attendant’s beliefs about causes of mental illness of their patient.

Study Design: Cross-sectional study.

Place and Duration of Study: This study was conducted at the AIMT Hospital Sialkot during the month of November 2018.

Materials and Methods: Non-probability convenience sampling technique was used to get a sample size of 391. Inclusion criteria were adult attendants giving written informed consent. Attendants with psychiatric illness, medical illness and having delusions were excluded. They were asked, what do you think about the cause of mental illness of your patient? Collected data was analyzed by SPSS v 22.

Results: 203 (51.92%) attendants were male and 188 (48.08%) were female. Mean age of males was 31.34±11.23 years (range 18-62 years). Mean age of females was 29.78±10.24 years (range 18-67 years). Majority were married, illiterate and from rural background. 184 (47.06%) had family history of mental illness. Attendants beliefs about the cause of mental illness were as following, 245 (62.66%) evil spirits, 174 (44.50%) medical illnesses, 167 (42.71%) attention seeking. 86 (21.99%) head injuries, 103 (26.34%) drug abuse, 93 (23.78%) drug side effects, 39 (42.71%) curse of God and 97 (24.81%) disturbed relations.

Conclusion: Of the 391 attendants of mentally ill patients 245 (62.66%) responded that evil spirits were the main cause of mental illness of their patients. 174 (44.50%) thought that these were medical illnesses too. 167 (42.71%) thought that their patients were attention seekers.

Key Words: Mental illness, attitudes, Mental health beliefs, stigma

Citation of articles: Javid I, Faisal M, Khan RMS, Iqbal S. Mental Health Beliefs: Causes of Mental Illnesses According to Attendants of Mentally Ill Patients in Pakistan. Med Forum 2019;30(2):31-34.

INTRODUCTION

Mental illness is defined as variety of mental health conditions and disorders affecting one’s thoughts, behavior and mood. Classically, public attitudes study toward mental illness and individuals with mental illness has mainly been carried out by mental health professionals for example Psychologist and Psychiatrist. Different people from different fields of life, literate, illiterate, adolescents and old ones have different thoughts about mental illness.

Some people have positive attitudes and some have negative attitudes toward mental illness. The people of the concerned population are misguided and got false beliefs about mental illness. A study conducted in Singapore showed that negative attitudes towards mentally ill people were dominant among population. In the past, mentally ill people were mutilated, thrown away from their houses and even penalty to death to relieve their souls. A study conducted on Nigerians journalists and nurses showed that supernatural forces, curse of God, evil spirits and witches caused mental illness and mentally ill people were called as threatening, precarious, untrustworthy, careless and brutal. These false beliefs had changed the public attitude toward mental illness that they were being discriminated in jobs, housing, in getting medical facilities and even in social relationships reported in a study conducted in America. Negative attitudes because of false beliefs may also affect the funding for mental health services. It was believed that even a very small group of professionals involved in denigration of mentally ill people or who do not have such confidence in improvements, will transform positive social interactions into negative social interactions at a certain time.
On the other side of the story, health care professionals have positive attitudes toward mentally ill people on the basis of well-ordered contact as compared to the general public. American study also reported that positive attitudes were present among Americans research respondents. Lack of knowledge about mental illness and negative attitudes toward mentally ill people may also be present among Sialkot’s Pakistani population. To our information no study has been conducted on this topic in Sialkot. The objective of the current study was to investigate attendant’s beliefs about causes of mental illness of their patient.

MATERIALS AND METHODS

The study was conducted at AIMT Hospital Sialkot which is affiliated with KMSCM Sialkot. This research was completed in Psychiatry department which has indoor and OPD running whole week. Current study was conducted on attendants who accompanied with their psychiatric patients to this hospital in the month of November 2018. It was conducted in both OPD and inpatients. Only one attendant was allowed to answer the question. It was a cross-sectional study. Non probability convenience sampling technique was applied. Sample size was calculated by G Power calculator. Ethical approval was taken from institutional ethical review committee. Guideline mentioned in the Declaration of Helsinki were followed. Title and purpose of study were explained to each attendant. Total 402 people were approached but 11 refused to give consent. The demographic variables of these people were not very different from rest of the attendants.

Inclusion criteria were adult attendants giving written informed consent. Attendants with psychiatric illness, medical illness, having delusions, in delirium and who refused to give informed consent were excluded from the study. In the end 391 attendants were included after applying the inclusion and exclusion criteria and taking written informed consent. Purpose along with title of the research was explained to all the attendants. A data sheet was prepared. First portion of the sheet contained written informed consent, second portion contained demographic details of the person and in the third portion an open-ended questions was asked. What do you think about the cause of mental illness of your patient? If a person was unable to answer, then he was given a list of options which are shown in the results. Attendants were asked to tick mark their options. For illiterate attendants data collectors read out the whole data sheet and marked the responses according to the will of the attendant. After collection of data it was analyzed by SPSS v 22.

RESULTS

Of the 391 study participants, 203 (51.92%) were male and 188 (48.08%) were female. Mean age of males was 31.34±11.23 years (range 18-62 years). Mean age of females was 29.78±10.24 years (range 18-67 years). According to age participants were divided into three groups, as 18-29 years old, 30-45 years old and above 45 years old. In the first age group there were 129 (32.99%) participants, 176 (45.01%) were in second age group and 86 (22.00%) were in third age group. 213 (54.47 %) contributor were from rural while 178 (45.53%) belonged to urban background. 269 (68.80%) were married and 122 (31.20%) were single. According to educational status, there were three groups. The groups were Illiterate, up to 10 years and more than 10 years of education with number and percentage of 167 (42.71%), 131 (33.50%) and 93 (23.79%) respectively. Positive family history was present among 184 (47.06%) attendants while 207 (52.94%) didn’t have family history of mental illness. Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number</th>
<th>% age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>203</td>
<td>51.92%</td>
</tr>
<tr>
<td>Female</td>
<td>188</td>
<td>48.08%</td>
</tr>
<tr>
<td>Age in years</td>
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<td></td>
</tr>
<tr>
<td>8-29</td>
<td>129</td>
<td>32.99%</td>
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<tr>
<td>30-45</td>
<td>176</td>
<td>45.01%</td>
</tr>
<tr>
<td>Above 45</td>
<td>86</td>
<td>22.00%</td>
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<tr>
<td>Background</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>213</td>
<td>54.47%</td>
</tr>
<tr>
<td>Urban</td>
<td>178</td>
<td>45.53%</td>
</tr>
<tr>
<td>Marital status</td>
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<tr>
<td>Married</td>
<td>269</td>
<td>68.80%</td>
</tr>
<tr>
<td>Never</td>
<td>122</td>
<td>31.20%</td>
</tr>
<tr>
<td>Years of study</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illiterate</td>
<td>167</td>
<td>42.71%</td>
</tr>
<tr>
<td>Up to 10 years</td>
<td>131</td>
<td>33.50%</td>
</tr>
<tr>
<td>More than 10 years</td>
<td>93</td>
<td>23.79%</td>
</tr>
<tr>
<td>Others family members</td>
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<td></td>
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<td>having mental illness</td>
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<td>Yes</td>
<td>184</td>
<td>47.06%</td>
</tr>
<tr>
<td>N0</td>
<td>207</td>
<td>52.94%</td>
</tr>
</tbody>
</table>

Table No.2: Perceived causes of mental illness N =391

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Mental illness cause</th>
<th>Number (n)</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Medical illness</td>
<td>174</td>
<td>44.50%</td>
</tr>
<tr>
<td>2</td>
<td>Head injury</td>
<td>86</td>
<td>21.99%</td>
</tr>
<tr>
<td>3</td>
<td>Drug abuse</td>
<td>103</td>
<td>26.34%</td>
</tr>
<tr>
<td>4</td>
<td>Drug side affects</td>
<td>93</td>
<td>23.78%</td>
</tr>
<tr>
<td>5</td>
<td>Curse of God</td>
<td>39</td>
<td>9.97%</td>
</tr>
<tr>
<td>6</td>
<td>Attention seeker</td>
<td>167</td>
<td>42.71%</td>
</tr>
<tr>
<td>7</td>
<td>Evil spirits</td>
<td>245</td>
<td>62.66%</td>
</tr>
<tr>
<td>8</td>
<td>Disturbed relationships</td>
<td>97</td>
<td>24.81%</td>
</tr>
</tbody>
</table>
Of the 391 attendants of mentally ill patients 245 (62.66%) responded that evil spirits are the main cause of mental illness. 174 (44.50%) thought that these were medical illnesses. 167 (42.71%) thought that their patients were attention seekers and thus changed their behavior by their own will to get attention. 86 (21.99%) thought that their patients’ head injuries caused their mental illness. 103 (26.34%) participants said that drug abuse caused their mental ailment. 93 (23.78%) said that drug side effects played an important role in causing mental diseases. 39 (42.71%) believed that curse of God affected the mental capacities of their patient. 97 (24.81%) participants thought that disturbed relations caused mental illness. Table 2.

DISCUSSION

Our study results show that three main triggering factor for mental illness are, evil spirits 245 (62.65%), medical illness 174 (44.50%) and attention seekers 167 (42.71%). In our study there is dominancy of male gender 203 (51.92%), rural population 213 (54.47%), married people 269 (60.80%) and illiterate participants 167 (42.71%). The supremacy of evil spirits may be because that our study participants mostly belonged to rural dwelling 213 (54.47%). A study conducted on Nigerians journalists and nurses showed that supernatural forces, curse of God, evil spirits and witches caused mental illness contrary to our research which mentioned evil spirits 245 (62.65%), medical illness 174 (44.50%) and attention seeker 167 (42.71%) the leading causes of mental illness. Disturbed relationship was also an important cause of mental illness among Americans and Pakistanis. A study conducted in Singapore showed that, male gender, old age, socioeconomic status and lower education were related with more negative behavior towards the mentally ill, which favors our results because majority of our study respondents were male gender, rural residents and illiterate. Drugs and substance abuse is the cause of mental illness according to 103 (26.34%) participants in our study as it is the same as in the study conducted in Nigeria in which it is stated that causes such as drugs, drinking alcohol and abuse of different substances that are injurious to health, stress related jobs, and trauma were also considered as main causes of mental health illness. In addition, this is a general belief among Nigerians who are used to attribute mental illness causes to psychological or social impacts. In our study the attendants who had history of mental illness in their families when they was asked about the cause of mental illness in their patient their attitude toward mental illness was very positive. They replied that mainly it’s because of medical illness 174 (44.50%) or may be drugs side effects 93 (23.78%) but not the evil spirits as it is the same as in the study conducted in Singapore which explains that the professionals who have a positive family history or close personal friends diagnosed with mental illness predicted remarkably less societal distance regarding who had a mental illness. The strengths of our study are its easy method to conduct and using simple survey form to collect data. The limitations being cross-sectional nature and being hospital based. Some of the data collectors might be more enthusiastic and encouraged more responses from attendants. Bias and social pressure may have also been concurred upon attendants. In future prospective studies done in community with rigorous methodology may shed more light on this issue.

CONCLUSION

Of the 391 attendants of mentally ill patients 245 (62.66%) responded that evil spirits were the main cause of mental illness of their patients. 174 (44.50%) thought that these were medical illnesses too. 167 (42.71%) thought that their patients were attention seekers and thus changed their behavior by their own will to get attention.

Author’s Contribution:

Concept & Design of Study: Imran Javid
Drafting: Muhammad Faisal
Data Analysis: Rana Mozammil
Revisiting Critically: Imran Javid, Muhammad Faisal, Sana Iqbal
Final Approval of version: Imran Javid

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

REFERENCES


Hypothyroidism in Women Can Lead to Recurrent Miscarriages

Tanweer Akhtar¹, Shazia Shaikh¹, Saira Bano Saima² and Shabnam Naz³

ABSTRACT

Objective: To determine the frequency of hypothyroidism inpatients presenting with the history of recurrent miscarriages at tertiary care hospital in Larkana.

Study design: Descriptive / cross-sectional study

Duration and place of study: This study was conducted at Shaikh Zaid Women Hospital, Obstetrics and Gynecology Unit-II, SMBBMU, Larkana from March, 2016 to September, 2016.

Materials Methods: Total eighty patient having age between 18-35 years, parity at least para 1 and history of recurrent miscarriages were included in this study. After taking approval from an ethical review committee of the institute. Blood sample was taken & sent to a central laboratory for serum analysis of TSH and free T4 levels. Hypothyroid patients were treated with thyroxin. Data was collected on a predesigned proforma. The data was analysed using SPSS version 17.

Results: Mean age of enrolled participants was 26.8±4.3 years, the mean parity was 1.79±0.74 and 66 (82.5%), 37 (46.3%) had income <10000 a month, 22 (27.5%) had three miscarriages, the mean duration of pregnancy was 14.19±1.71 weeks, mean TSH level was 3.48±1.7 and mean free T4 level was 4.55±1.1. The frequency of hypothyroidism in patients presenting with recurrent hypothyroidism was 26 (32.5%) cases.

Conclusion: In conclusion, the prevalence of thyroid autoimmunity was higher in pregnant women with a history of recurrent abortion. The frequency of hypothyroidism in patients presenting with recurrent miscarriage was statistically significant in poor patients and frequency of hypothyroidism increases as a number of abortions increases.

Key Words: Abortion, recurrent miscarriage, hypothyroidism, Thyroid Stimulating hormone (TSH), thyroxin (T4)


INTRODUCTION

Recurrent miscarriage (RM) is characterized as repeated loss of pregnancies (consecutive three or more) that ends in the spontaneous miscarriage of the fetus before 20 weeks of gestation¹. It affects about 1-2% of pregnant women. The etiology of miscarriage is diverse and includes uterine abnormalities (such as fibroids), genetic anomalies, hormonal and endocrinial abnormalities, anticardiolipinantibodies, chromosomal abnormalities and infectious agents. Despite major advances in our understanding of the etiology of RM over the last 20 years, even after the comprehensive investigation, no cause for pregnancy failure is identified in approximately 50% of couples⁴.

Among endocrinial causes, thyroid dysfunction is an important cause of miscarriage. It is because adequate maternal thyroid function during pregnancy is critical to the mother and developing fetus. Thyrroxine dose may need to be increased by 30-50% in early pregnancy. Mild thyroid abnormalities are associated with an increased rate of miscarriage which is due to an impaired thyroid adaptation to pregnancy. Changes in maternal thyroid function during pregnancy require an additional challenge to the maternal thyroid gland. Women who are overtly hypothyroid carry an increased risk of both early and late obstetrical complications, such as recurrent miscarriage& spontaneous abortions. Primary hypothyroidism is a common disorder in women of childbearing age, with an estimated prevalence of 2-3% of women cluing pregnancy. Thyroid disorders are responsible for approximately 17% to 20% cases of recurrent miscarriage. The reported prevalence of spontaneous miscarriage in Pakistan is 6.5%. While it is documented that the prevalence of hypothyroidism and SCH in Pakistani population is 4.1 and 5.4%, respectively and female is predominant gender. Despite a data found who can show the proportion of share of hypothyroidism in the incidence of recurrent miscarriages. Researches emphasized that recurrence of miscarriages associated with hypothyroidism or thyroid autoimmunity so, therefore women with the history of miscarriages need to be evaluated for thyroid...
function. The rationale for this study is hypothyroidism is found frequently in patients of recurrent miscarriage then the current study recommend the screening of all patients whose loses their pregnancy before term. The main aim of this study is to determine the frequency of hypothyroidism in patients presenting with the history of recurrent miscarriages at tertiary care hospital in Larkana.

MATERIALS AND METHODS

A descriptive cross sectional study was conducted for duration of six months from 14-03-2016 to 13-09-2016 at Shaikh Zaid Women Hospital, Obstetrics and Gynaecology Unit-III, SMBBMU, Larkana. In all 80 age of patient should be between 18-35 years, parity at least para 1 and history of recurrent miscarriages were included in this study. Women known case of hypothyroidism, non-thyroidal autoimmune diseases, Turner’s syndrome, and uterine anomalies like the bicornate uterus, history of urogenital loss, common case of chronic hypertension, ischemic heart diseases, diabetes mellitus, renal disease, autoimmune diseases and patients using contraception were excluded.

After taking approval from an ethical review committee of the institute, patients who meet the inclusion criteria were included in this study after taking informed consent from gynecology OPD. A blood sample of participants was taken and sent to a central laboratory for serum analysis of TSH and free T4 levels (which are done free of cost from the hospital). After that, the patients were treated as per the standard protocol of institution. The researcher herself collected the data from patients on a prescribed proforma. Data were collected on demographic variables include name, age, address, the number of miscarriages (>3; with duration of each pregnancy). The primary outcome variable is the detection of hypothyroidism in these patients of recurrent miscarriage.

Statistics: All data were entered and analyzed in SPSS version 18. Mean & standard deviation (Mean ± SD) were expressed for the continuous variables. Frequencies and percentages were expressed for categorical variables. To evaluate the effect modification, the effect modifiers were stratified followed by application of chi-square with a p-value <0.05 taken as significant.

RESULTS

A total of 80 patients were enrolled in this study during the study period. The mean age of enrolled participants was 26.8±4.3 years, the mean parity was 1.79±0.74 and 66 (82.5%) has parity of 2, 37 (46.3%) had income <10000 a month, 22 (27.5%) had three miscarriages, the mean duration of pregnancy was 14.19±1.71 weeks and 43 (53.8%) had duration of pregnancy <14 weeks and mean TSH level was 3.48±1.7 and mean free T4 level was 4.55±1.1. The frequency of hypothyroidism in patients presenting with recurrent hypothyroidism was 26 (32.5%) cases (Table 1).

Of patients, the frequency of hypothyroidism in patients presenting with recurrent miscarriage was high in <25 years of age is 15 (34.1%) while the frequency of hypothyroidism in patients presenting with recurrent miscarriage was 24 (36.4%) in parity 2. However, the frequency of hypothyroidism in patients presenting with recurrent miscarriage was 17 (45.9%) in poor class and the frequency of hypothyroidism in patients presenting with recurrent miscarriage was 54.5% in patients with 3 miscarriage. Of patients with duration of pregnancy of <14 weeks, the frequency of hypothyroidism in patients presenting with recurrent miscarriage was 17 (39.5%). (Table 2)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Percentage</th>
<th>Mean±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;25</td>
<td>55%</td>
<td>26.8±4.3 years</td>
</tr>
<tr>
<td>&gt;25</td>
<td>45%</td>
<td></td>
</tr>
<tr>
<td>Parity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>para 2</td>
<td>82.5%</td>
<td>1.79±0.74</td>
</tr>
<tr>
<td>para &gt;2</td>
<td>17.5%</td>
<td></td>
</tr>
<tr>
<td>Duration of pregnancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;14 weeks</td>
<td>53.7%</td>
<td>14.19±1.71 weeks</td>
</tr>
<tr>
<td>&gt;14 weeks</td>
<td>46.25%</td>
<td></td>
</tr>
<tr>
<td>Income distribution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor class (10,000)</td>
<td>46.25%</td>
<td></td>
</tr>
<tr>
<td>Middle class (10,000-50,000)</td>
<td>36.25%</td>
<td></td>
</tr>
<tr>
<td>High class (&gt;50,000)</td>
<td>17.5%</td>
<td></td>
</tr>
<tr>
<td>No. of miscarriages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>28.75%</td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td>33.75%</td>
<td></td>
</tr>
<tr>
<td>Three</td>
<td>27.50%</td>
<td></td>
</tr>
<tr>
<td>Four</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Status of Hypothyroidism</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>32.50%</td>
<td>TSH (3.48±1.7)</td>
</tr>
<tr>
<td>No</td>
<td>67.50%</td>
<td>T4 (4.5±1.1)</td>
</tr>
</tbody>
</table>
DISCUSSION

Thyroid hormones are essential for the developing fetus. Hence a pregnant woman needs thyroxine more than non-pregnant lady to provide T4 to both herself and her developing fetus. The fetus’s thyroid gland is not fully functional until after 12 weeks of pregnancy. If the mother does not have sufficient thyroid hormones, she may be at increased risk of miscarriage. Since the majority of women are not sure that they are pregnant until four to six weeks after the last menstrual period, they do not go to see doctors and test their thyroid function until the first trimester is more than half over. It is advisable to suggest thyroid investigation to the pregnant women with history of recurrent miscarriage as soon as possible after knowing they are pregnant.

In a study, the overall incidence of hypothyroidism was 2.5%, whereas overt thyroid deficiency was in 1.3 per 1000. The incidence of subclinical hypothyroidism in all women between 18-45 years is about 5 percent. The potent risk factor being heredity whereas other risk factors include type 1 diabetes and anti-microsomal antibodies. Deficiency of iodine has been proved to cause excessive miscarriage. Likewise, thyroid antibodies were associated with an increased incidence of abortion despite the lack of overt hypothyroidism. The underlying mechanism behind hypothyroidism is not clear. However, it is postulated that the presence of thyroid autoantibodies reflects a generalized activation of the immune system and a generally heightened autoimmune reactivity against the fetoplacental unit. Most but not all studies have shown a significant association between the presences of thyroid autoantibodies and a higher miscarriage rate. However, patients with high titers of thyroid autoantibodies do not show a higher rate of miscarriages compared with patients with low titers. The mechanisms involved still remains unclear. The systemic review and meta-analysis showed a positive association of pregnancy loss with thyroid antibodies with an incidence of 17-33%. In a study, the incidence of hypothyroidism was 5.71%, whereas others have found that it is no greater incidence than normal control. However there seems to be higher incidence of co-existence of multiple endocrine abnormalities in some women, but in this study, only 1 women had both diabetes mellitus and recurrent pregnancy loss. In our study, the frequency of hypothyroidism in patients presenting with recurrent hypothyroidism was 26 (32.5%) cases. Similarly, in a study, of 100 pregnant patients with previous recurrent miscarriage, thyroid autoimmunity (anti-TPO O34 U/ml) was found in 31% (P=0.031) and subclinical hypothyroidism was observed in 27% (P=0.74) of the cases. The incidence of subclinical hypothyroidism was higher in the TPOAbC group than in the TPOAbK group (52 vs 16%;P-0.0002). In a follow-up study in which pregnancy outcome was evaluated in 42 euthyroid women with a history of three or more consecutive, first trimester abortions, 31% had thyroid autoantibodies. Future research, within the setting of clinical trials, should focus on the potential health gain of identification, and effect of treatment, of thyroid disease on pregnancy outcome. Furthermore, it was recently shown that thyroxine administration to pregnant women with positive thyroid autoantibodies and a history of recurrent abortions may improve the final outcome.

CONCLUSION

In conclusion, the prevalence of thyroid autoimmunity was higher in pregnant women with a history of recurrent abortion. The frequency of hypothyroidism in...
patients presenting with recurrent miscarriage was statistically significant in poor patients and frequency of hypothyroidism increases as a number of abortions increases.

**Author’s Contribution:**
- Concept & Design of Study: Tanweer Akhtar
- Drafting: Shazia Shaikh
- Data Analysis: Saira Bano Saima, Shabnam Naz
- Revisiting Critically: Tanweer Akhtar, Shazia Shaikh
- Final Approval of version: Tanweer Akhtar

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

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Competency of Medical Students Regarding Basic Life Support (BLS) in Adult and Children: Training Need Assessment in Peshawar
Saminullah Khan¹, Sher Bahadur², Atta ullah Jan², Rizwan Anwar², Gohar Rehman²

ABSTRACT

Objective: To assess the competency in term of knowledge, attitude and practices of medical students regarding basic life support and cardiopulmonary resuscitation in adult and children.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at the multicenter based study conducted in four different public private medical colleges in Peshawar during March 2017.

Materials and Methods: A total of 249 sampled subjects were recruited in study using convenience sampling technique through self administered questionnaire. Data were analyzed using SPSS version 20.

Results: A total of 249 students (mean age 23.27 ± 0.97 years) out of whom 110 (44.2%) male and 139(55.8%) were female. Majority 210(84.3%) of them were aware about nomenclature of BLS and CPR, but small proportion 68(27.4%) of students were able to correctly know about "No signs of life". Nearly half of them knew the correct location of hand and rate of compression for CPR, while 30.1% were able to correctly answer questions about depth of chest compression in adults. Similar finding were also reported for children as well. Misconception was seen as 161(64.9%) considered that there is difference between child and adult BLS protocol. The attitude of student was very positive, thus 152 (61.0%) of them had attended the BLS training but still there was a need for refresher training to retain knowledge and improve the skills.

Conclusion: The competency of medical students in terms of attitude was optimal whilst the knowledge and practices needed to be refreshed through refresher training.

Key Words: Competency, basic life support, Knowledge, attitude, practices, awareness

INTRODUCTION

Cardiac arrests and other life threatening incidents remain a significant public health problem all over the world including Pakistan.¹ ² ³ Cardiac rehabilitation (restoration) by the trained and skilled professional averting sever adverse health consequences due to life threatening incidents such as cardiac arrest and road traffic accidents is rising worldwide.⁴ To minimize the effects of these life-threatening conditions, certain type of preparedness is required such as availability of trained health care professionals for provision of timely BLS.⁵ Cardiac first response (CFR) training among health professionals especially medical students is needed to be essential part of curriculum to deal with such situations as out of hospital cardiac arrests are leading to marked increase in mortality.⁶ Similarly basic life support (BLS) nowadays becoming a prerequisite for doctors in many countries,⁷ however in Pakistan there is lack of emphasis about the placement of BLS training in formal curriculum. The medical students competent in providing immediate life support to patients with cardiac arrest and other life threatening conditions can ensure the survival of patients long enough till he/she reaches proper medical services.⁸ Thus an adequate competency in terms of knowledge, attitude and practices among medical students become the core norms of the health care provision. The main aim of BSL is to provide and maintain ventilation and circulation to the brain and vital organs until medical care arrive to treat the underlying cause.⁹ Literature indicates that medical student fall short of required competencies regarding BSL.⁴ Study on medical students from South India reveals that 322(61.9%) of students attributed lack of awareness about BLS, as formal curriculum did not address the theme to be part of curriculum, therefore 479(92.1%) responded that

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Printed: February, 2019
A similar study conducted on 377 students where most (50.2%) of students were not confident of performing BLS/CPR and would be uncomfortable to be in situation that needed BLS/CPR. Literature further reported that there was significant association between BLS training and knowledge scoring. In a study conducted in Saudi Arabia reveals that 28% students have participated in BLS training and their mean knowledge score was higher as compared to those who have-not attended any training in this regards. Study from Pakistan indicates that nearly 14.7% medical students have taking training regarding BLS. Overall medical students in Pakistan have poor knowledge regarding basics of BLS. This study aim to assess the competency in term of knowledge, attitude and practices of medical students regarding basic life support and cardiopulmonary resuscitation in adult and children.

MATERIALS AND METHODS

This is multicenter based cross sectional study conducted in Peshawar, where students from Kabir Medical College (KMC), Khyber Girls Medical College (KGMC), Khyber Medical College (KMC), and Rehman Medical College (RMC) participated in the study. Using convenience sampling technique data were collected on self administered questionnaire during March 2017. The study population was comprised of final year students. Using WHO software for sample size calculation, based on formula given below.

$$n = \frac{z_{\alpha/2}^2 \cdot p \cdot (1 - p) \cdot N}{d^2 (N-1) + z_{\alpha/2}^2 \cdot p \cdot (1 - p) \cdot N}$$

The calculated sample size was (n=249) by assuming total strength of students (N=700), 95% confidence interval, 50% anticipated population proportion 0.05 absolute precision, 0.1 relative precision. Data were analyzed using SPSS version 20.

RESULTS

A total of 249 students (mean age 23.27 ± 0.97 years) were requested and all responded positively (response rate 100%) out of whom 110(44.2%) were male and 139(55.8%) were female. Results regarding knowledge indicates that 210(84.3%) correctly demonstrated the abbreviation of BLS and CPR. Only 68(27.4%) of students were aware about "No signs of life" and 50.4% were able to correctly point out the location of hand for CPR procedure in adult. About rate of compression in adult 50.6% correctly answer the question. However 75(30.1%) know about the exact depth of chest compression in infants. Knowledge about ratio of chest compression and ventilation in adults was observed among 48.6% of student.

Table No.1: Know about the BLS and CPR in adult among participants

<table>
<thead>
<tr>
<th>Knowledge about the abbreviation of BLS (n=249)</th>
<th>Correct</th>
<th>Incorrect</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct</td>
<td>210</td>
<td>25</td>
<td>14</td>
</tr>
<tr>
<td>Incorrect</td>
<td>25</td>
<td>10.0</td>
<td>5.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Knowledge about the abbreviation of CPR (n=249)</th>
<th>Correct</th>
<th>Incorrect</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct</td>
<td>210</td>
<td>28</td>
<td>10</td>
</tr>
<tr>
<td>Incorrect</td>
<td>28</td>
<td>11.2</td>
<td>4.0</td>
</tr>
</tbody>
</table>

"No signs of life" means (n=248)

<table>
<thead>
<tr>
<th>Correct</th>
<th>Incorrect</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>68</td>
<td>160</td>
<td>20</td>
</tr>
</tbody>
</table>

Location of hands for CPR in adults (n=248)

<table>
<thead>
<tr>
<th>Correct</th>
<th>Incorrect</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>125</td>
<td>120</td>
<td>3</td>
</tr>
</tbody>
</table>

Rate of chest compression in adults: (n=248)

<table>
<thead>
<tr>
<th>Correct</th>
<th>Incorrect</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>126</td>
<td>113</td>
<td>10</td>
</tr>
</tbody>
</table>

Depth of chest compression in adults (n=248)

<table>
<thead>
<tr>
<th>Correct</th>
<th>Incorrect</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>75</td>
<td>146</td>
<td>28</td>
</tr>
</tbody>
</table>

Ratio of chest compression and ventilation in adults (n=248)

<table>
<thead>
<tr>
<th>Correct</th>
<th>Incorrect</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>121</td>
<td>111</td>
<td>17</td>
</tr>
</tbody>
</table>

Is there any difference between child and adult BLS (n=248)

<table>
<thead>
<tr>
<th>Yes</th>
<th>161</th>
<th>(64.9%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>87</td>
<td>35.1%</td>
</tr>
<tr>
<td>Don’t know</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

Among medical students only 77(28.5%) have correctly answered the question about rescue breathing in infants, similarly 75(30.1%) were aware about ratio of chest compression and ventilation in children, while 125(50.2%) correctly answer about Depth of chest compression in infants. Furthermore, 161(64.9%) reported that there is difference between child and adult BLS.
The attitude of medical students was sportive as most 237(95.2%) of them believe that learning about BLS is important for a medical student. Similarly, 239(96.0%) were of the view that BLS should be integrated in the medical curriculum both undergraduate and postgraduate level. Majority 232(93.2%) of them consider that the BLS knowledge saves one's life.

![Image](image-url)

**Figure No.2. Attitude of medical students about BLS**

Regarding the practical aspects of BLS, 152 (61.0%) of students have attended the BLS training, 42(17.2%) of them have practically performed on patients and 9(3.8%) of them have saved the life of patients. A high proportion 152 (61.0%) of students in Peshawar were trained.

**Table No.2: training status and practices of BLS services in medical students**

<table>
<thead>
<tr>
<th>Questions related to Attitude</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have You Ever Attended BLS Session(n=245)</td>
<td>152 (61.0%)</td>
<td>93 (37.3%)</td>
</tr>
<tr>
<td>Have you ever performed BLS? (n=244)</td>
<td>42 (17.2%)</td>
<td>202 (82.8%)</td>
</tr>
<tr>
<td>Do you feel confident in initiating BLS procedure? (n=208)</td>
<td>103 (49.5%)</td>
<td>105 (50.5%)</td>
</tr>
<tr>
<td>Have you ever saved any body's life by doing BLS procedure? (236)</td>
<td>9 (3.8%)</td>
<td>227 (96.2%)</td>
</tr>
</tbody>
</table>

**DISCUSSION**

Health care providers should be well versed in terms of knowledge and skills related to basic life support services to deal with the emergencies. However, retention of knowledge and skills remained a crucial problem among health care providers. Medical students are considered the future doctors and they could play important role in dealing with the casualties in community. Keeping the importance of BLS and CPR, students are keen to take part in the training sessions pertaining to BLS. This study was aimed to determine the competency level in term of knowledge attitude and practices of medical students regarding Basic life support among adult and children. The results of present study could be used as baseline for planning of capacity building among medical students studying in different medical colleges of Peshawar. The present study revealed that majority 210(84.3%) of students know the abbreviation of BLS and CPR. However, only 68(27.4%) of students were aware about "No signs of life"and this was very low as compared to other health care professionals. A study from Nepal indicates that 65% of medical and paramedical staff could recognize “no signs of life”.11 Nearly half (50.4%) of students in present study correctly pointed out the location of hand for CPR procedure in adult. Furthermore 50.6% and 30.1% had correctly answered questions about rate of compression and depth of chest compression in adults respectively. Less than half of students (48.6%) know about ratio of chest compression and ventilation in adults. This result gives an impression that the medical students have suboptimal knowledge about the basic principles of BLS and CPR. These findings were in consistence with study conducted in Karachi Pakistan where they also found that medical students were awarded about BLS but they had poor practical knowledge.10 This indicates that students have less opportunity to do hands on practice to develop the skills. Knowledge of medical students about the same parameters of BLS/CPR for children was also low,161(64.9%) considered that there is difference between child and adult BLS protocol. Study from Jazan University Saudi Arabia also revealed similar results.12 They reported complete knowledge of BLS (CPR) among medical students. It was also found that students who took part in the formal training of BLS had good knowledge.13 The attitude of medical students in the present study was found sportive as most them were of the view that learning about BLS is important and should be integrated in the medical curriculum because the BLS knowledge saves one's life. These finding also supported in other researches.14-17 Regarding the practical aspects of BLS services, majority 152 (61.0%) of students have attended the BLS training, 42(17.2%) of them have practically performed on patients and 9(3.8%) of them have saved the life of patients. Result of present study indicate that 152 (61.0%) of medical students had attended BLS course. This indicates that in comparison to other areas, medical students in Peshawar are very keen to be trained in BLS.10-13 This indicate that medical students knows the important of BLS and hence taking part in the BLS session, which are then practiced in community to save the lives of people during medical emergencies. University also recognizes the importance of BLS training thus formally arranging training for medical students.18-20

**CONCLUSION**

The medical students in Peshawar are aware of CPR/BLS, thus majority had attended the training session but still retention of knowledge about the basic principle of CPR/BLS for adult and children was not optimal, however student had very positive attitude
towards CPR/BLS. Students recommended that this should be incorporated in the medical curriculum.

**Author’s Contribution:**

- Concept & Design of Study: Saminullah Khan
- Drafting: Atta ullah Jan
- Data Analysis: Sher Bahadur
- Revisiting Critically: Gohar Rehman
- Final Approval of version: Rizwan Anwar

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

**REFERENCES**


Objective: To determine Awareness of Tetanus Toxoid Vaccine in Women of Karachi.

Study Design: Cross-sectional study

Place and Duration of Study: This study was conducted at the at Jinnah Post Graduate Medical Center, Karachi from July 2018 to November 2018.

Materials and Methods: A study was conducted on a sample of 400 females. The sample was taken through Non-Probability Purposive Sampling within a study period. An informed verbal consent was taken from the candidates. Pilot study was conducted to assess the authenticity of the questionnaire. A structured questionnaire was then distributed, got filled, data was entered and analyzed using SPSS version 20, with 95% confidence interval and p-value <= 0.05 considered as statistically significant

Results: A total of 400 women were asked about the Tetanus Toxoid Vaccine. Out of 400 women 290 (72.5%) knew about Tetanus Toxoid Vaccine while 110 (27.5%) had no idea about it. Of these 290 women who had awareness 220 (76%) were unmarried while 70 (24%) were married. Out of 110 females who didn’t have awareness 35 (32%) were married and 75 (68%) were unmarried. Out Of 290 Women who had awareness 214(88%) were students, 23 (69%) were working women 53(42%) were house wives. Women who had awareness 160(55.1%) got to know about this from friends, family and other relatives while 130(44.8%) were told by health care providers at some point in their lives.

Conclusion: Despite development of highly effective preventive measures, high rate of tetanus in Pakistan points towards lack of preventive measures. Reasons for lack of regular vaccination for tetanus include low level of education, unavailability of immunization centers near to residence, misconceptions regarding vaccination among women such as it might cause infertility, anaphylactic reactions and misconception of TT being a contraceptive. There is a dire need for Policy Formulation And Programme Implementation For increasing awareness amongst the women For Optimum Immunization with tetanus toxoid including the schedule and booster dosage.

Key Words: Awareness, Tetanus, Toxoid, Women, Immunization


INTRODUCTION

Tetanus also known as lock jaw is a neurologic syndrome caused by bacterium Clostridium tetani. It is vaccine preventable infectious disease that does not spread from person to person. It results in an annual total 3,09,000 deaths. Clostridium tetani is an obligate anaerobic, gram-positive rod that is motile and readily forms endospores. It dwells in soil, dust and manure. This bacteria generally enters through a discontinuity in the skin either in the form of a puncture wound or cut with a contaminated object. Bacteria produce toxins that interfere with muscle contractions and produce muscle spasms and hypertonia typical of the disease. Severe spasms can even lead to bone fractures. Other presenting symptoms include headache, fever, sweating, dysphagia, hypertension and tachycardia. Tetanus is diagnosed clinically by its typical clinical manifestations as there are no specific diagnostic laboratory tests. Most common types of injuries associated with tetanus are puncture wounds followed by lacerations and abrasions.

Tetanus can be prevented through the administration of tetanus toxoid (TT) which is available in different forms i.e. DPT(Diphtheria pertussis, tetanus), DT(diphtheria tetanus), TT(tetanus toxoid), ATS(anti-tetanus serum) and is highly effective preventive measure in medical practice with extremely low failure rates. The protective titer of neutralizing antibody clinically accepted is 0.01 U/ml. Vaccines are considered as one of the most effective public health interventions. Increasing number of cases of Maternal and Neonatal Tetanus (MNT) is attributed to a triple failure of public health in terms of routine vaccinations, antenatal care and clean delivery/umbilical cord care services. The WHO
recommends that 90% of the females living in high-risk areas should be vaccinated against tetanus.\textsuperscript{12} WHO estimated that neonatal tetanus killed about 49,000 newborn children in 2013, a 94% reduction from the situation in 1988 when an estimated 787,000 newborn babies died of tetanus within their first month of life.\textsuperscript{13} and in Pakistan 22000 neonatal deaths occur annually due to MNT.\textsuperscript{14} Vaccination of mothers with tetanus toxoid (TT) is recommended and practiced worldwide, and has resulted in fall in the incidence of maternal and neonatal tetanus.\textsuperscript{15} with no evidence of adverse effects either to the mother or fetus.\textsuperscript{16} MNT elimination is defined as achievement of less than 1 case of neonatal tetanus in every district of a country per 1000 live births annually.\textsuperscript{17} The 3 key strategies for achieving MNT elimination recommended by WHO are: administration of at least 2 doses of tetanus toxoid (TT2) to all pregnant woman in high risk areas and 3 doses (TT3) to all females of child bearing age.\textsuperscript{9} Studies have demonstrated that to be maximally effective, the first two doses of TT (TT1 and TT2) should be given with interval of at least 4 weeks between them and the ideal interval between TT2 and birth being at least 4 weeks.\textsuperscript{18} The main objective of this study was to determine the awareness of tetanus toxoid in women of Karachi.

**MATERIALS AND METHODS**

A Cross-sectional study was conducted on a sample of 400 females attendants of patients admitted to Jinnah Postgraduate Medical Centre, Karachi. The sample was taken through Non-Probabilty Purposive Sampling within a study period of four months from July 2018 to November 2018. A well-constructed questionnaire which was translated into Urdu and Sindhi for convenience of the participants was used. Questions asked were related to age, education, marital status, parity, occupation, awareness of tetanus toxoid vaccine, its dosage and booster and prior vaccinations. Females who had received even one dose of tetanus toxoid vaccine were considered as vaccinated. Pilot study was conducted to assess the authenticity of the questionnaire. Data collected was entered and analyzed using SPSS version 20, with 95% confidence interval and p-value <= 0.05 considered as statistically significant.

**RESULTS**

A total of 400 women were asked about the Tetanus Toxoid Vaccine. Data was collected from these. Their number and respected ages were 139 who ranged from 12 to 20 years, 166 ranged from 21 to 30 years, 52 ranged from 31 to 40 years, 38 ranged from 41 to 50 years and 5 ranged from 50 to 60 years. Mean age was 26+10 (mean +S.D). 243 (60.7%) women were students, 33 (8.25%) were working women and 124 (31%) were housewives. 256 women were married while 144 were unmarried. 72.5% (290) of women knew about tetanus toxoid vaccine while 27.5% (110) had no idea about it. Of those who had awareness 160 (55.1%) got to know about this from friends, family and other relatives while 130 (44.8%) had been told by health care providers at some point in their lives.

Of 290 women who had awareness 220 (76%) were unmarried while 70 (24%) were married, of 110 women who did not have awareness 35 (31%) were married and 75 (69%) were unmarried. When T-test was applied to occupation and awareness of tetanus toxoid p-value was found to be <0.05 (0.01). 214 (88%) were students, 23 (69%) were working women 53 (42%) were housewives. Women who had awareness 160 (55.1%) got to know about this from friends, family and other relatives while 130 (44.8%) had been told by health care providers at some point in their lives.

Of 400 women only 46 (11.5%) knew the correct doses of tetanus toxoid vaccine. 139 (34.7%) women knew that after every ten years a booster for this vaccine is recommended.

![Figure No.1: Age of individuals.](image1)

![Figure No.2: Variables which show awareness of TT in females. Percentage of aware women is showed in Bluecolour. N=400](image2)
209 (50.1%) women knew that tetanus toxoid vaccine is recommended during pregnancy while only 184 (44%) knew that if not given during pregnancy this vaccine can cause harmful events. 48 (11%) of women said that they had never opted for vaccines because they thought of it as harmful to health. 252 (63%) women claimed that they regularly vaccinate their family members. 135 (33.5%) women spread awareness of this vaccine amongst family and friends.

**DISCUSSION**

Despite development of highly effective preventive measures, high rate of tetanus in Pakistan points towards lack of initiative to work on these preventive measures. Education regarding vaccination severely lacks among our population, which have little to no education on health care. Reasons for lack of regular vaccination for tetanus include low level of education, unavailability of immunization centers near to residence, misconceptions regarding vaccination among women such as it might cause infertility, anaphylactic reactions and misconception of TT being a contraceptive. Lack of family support to women plays big time role in our part of the world. 220 (76%) women who had awareness were unmarried while 70 (24%) were married, of 110 women who did not have awareness 35 (31%) were married and 75 (69%) were unmarried. This corresponds with another study conducted in Peshawar city where married women had awareness of TT vaccine compared with women less than age 20 or those who are above 30 but not yet married or pregnant. The study showed that Women who had awareness 160 (55.1%) got to know about this from friends, family and other relatives while 130 (44.8%) had been told by health care providers at some point in their lives. The study showed that out of 400 women only 46 (11.5%) knew the correct doses of tetanus toxoid vaccine. This was similar to a study conducted in Nigeria where there was a low level of awareness regarding the number of doses of the vaccine required in pregnancy (14.4%) and for life protection (19.5%). The Study showed that 139 (34.7%) women knew that after every ten years a booster for this vaccine is recommended. This was also found in a study conducted in India.

**CONCLUSION**

Despite development of highly effective preventive measures, high rate of tetanus in Pakistan points towards lack of preventive measures. Reasons for lack of regular vaccination for tetanus include low level of education, unavailability of immunization centers near to residence, misconceptions regarding vaccination among women such as it might cause infertility, anaphylactic reactions and misconception of TT being a contraceptive. There is a dire need for Policy Formulation And Programme Implementation For increasing awareness amongst the women For Optimum Immunization with tetanus toxoid including the schedule and booster dosage. As directed by WHO, all countries are committed to "elimination" of Maternal And Neonatal Tetanus (MNT), i.e. a reduction of neonatal tetanus incidence to below one case per 1000 live births per year in every district. So far 14 countries
including Pakistan, remain that have not eliminated Maternal And Neonatal Tetanus.

Author's Contribution:
Concept & Design of Study: Tafazzul H Zaidi
Drafting: Faheem Ahmed
Data Analysis: Kiran Mehtab
Revisiting Critically: Tafazzul H Zaidi, Faheem Ahmed
Final Approval of version: Tafazzul H Zaidi

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

REFERENCES
Objective: To determine the efficacy of intrauterine balloon catheter in control of bleeding from placental bed during cesarean section in major placenta praevia.

Study Design: A descriptive case series study

Place and Duration of Study: This study was conducted at the Shaikh Zaid Women Hospital, Obstetrics and Gynaecology Unit-III, SMBBMU, Larkana from March 2016 to September 2016

Materials and Methods: Sixty two patients of age 18-35 years, having an alive singleton pregnancy, gestational age of >37 to 42 weeks and diagnosed case of major placenta praevia were consecutively selected. Patients with placenta accrete, uterine anomalies, submucosal uterine fibroids, preeclampsia, instrumental deliveries and hemoglobin concentration <8 g/dL were excluded. Mean ± SD, frequencies & percentages were calculated. Chi-square was used as a test of significance with a P value <0.05 taken as significant.

Results: Mean age ± SD was 28.18 ± 5.0 years (Range 18-35). Parity ranged from zero to 3 with a mean parity ± SD of 1.45 ± 0.18 children. Mean ± SD gestational age of was 38.65 ± 1.30 weeks (37-42). Mean age ± SD amount of blood loss was 644.97 ± 418.81 milliliters. (Range: 251-2415ml). The efficacy of balloon catheter in the prevention of bleeding (primary outcome) was 88.7%. The post-stratification analysis showed that efficacy of balloon catheter in the prevention of bleeding was more with elder maternal age, higher gestational age, lower SE status, higher gravidity), higher parity and normal weight but statistically non-significant.

Conclusion: The use of intrauterine balloon catheter in cases of major placenta praevia as the first step in order to prevent intractable PPH as well as minimize the chances of undesirable hysterectomy.

Key Words: Placenta praevia, intrauterine balloon catheter, Caesarean section, Postpartum Hemorrhage.


INTRODUCTION

In pregnancy, placenta praevia complicates up to 3-5% of all deliveries called the most important causes of maternal mortality globally. In placenta praevia, the placenta is attached partially or fully to the myometrium leading to blockage of the uterus at its neck side. It occurs due to deficiency of the decidua and when there is a myometrial invasion by chorionic villi that interfering with normal delivery of a baby.

It is a major cause of obstetrical bleeding that is intrapartum or postpartum and . Postpartum hemorrhage (PPH) on the other hand complicates up to 18% of all deliveries, accounting for 25-30% of all maternal deaths. According to the Millennium Developmental Goals report, the ratio of maternal mortality is 320 per 100,000 live birth. Postpartum bleeding is usually from the placental bed at the lower uterine segment and occurs immediately after the placenta is delivered.

There have many interventions develop to prevent this hemorrhage. Among these isthe use of various uterotonicics, such as oxytocin, methylergonovine maleate, 15-methylprostaglandin F2α, dinoprostone, and misoprostol. If uterotonicics fail, techniques of tamponade include uterine gauze packing or the use of a Foley’s intrauterine catheter, Sengstaken-Blakemore tube, and Bakri balloon and . These are based on the principle of uterine tamponade which requires developing intrauterine pressure so as to stop bleeding.

Foley catheter with a 30-ml balloon capacity is easy to acquire and may routinely be stocked on labor and delivery suites. The efficacy of intrauterine balloon...
catheter in control of bleeding from placental bed in cases of placenta praevia was 80\(^{\circ}\). Therefore; the intrauterine balloon catheter is being suggested for stopping the hemorrhage in cases of placenta praevia. Sengstaken-Blakemore tube is expensive while intrauterine balloon catheter is a simple, cheap & quick intervention in preventing hemorrhage in resource-poor settings. Further, it is equally effective\(^{10}\).

The rationale study is to assess the efficacy of intrauterine balloon catheter in preventing the PPH in cases of placenta praevia which are delivered through cesarean section. Success in this will recommend the use of an intrauterine balloon catheter in all patients thus saving resources and preventing maternal morbidity and mortality. The objective of this study is to determine the efficacy of intrauterine balloon catheter in control of bleeding from placental bed during cesarean section in major placenta praevia.

**MATERIALS AND METHODS**

A descriptive case series study was conducted for duration of six months from 14-03-2016 to 13-09-2016 at Shaikh Zaid Women Hospital, Obstetrics and Gynaecology Unit-III, SMBBMU, Larkana. In all 62 patients of age 18-35 years, having an alive singleton pregnancy, gestational age of 37 to 42 weeks and a diagnosed case of major placenta praevia were consecutively selected. Patients with placenta accrete, uterine anomalies, submucosal uterine fibroids, preeclampsia, instrumental deliveries and hemoglobin concentration <8 g/dL were excluded.

The data collection was started soon after getting the approval of synopsis from Research Evaluation Unit of CPSP, Karachi. Only booked cases of placenta praevia to the gynecological OPD of Unit III, Shaikh Zaid Women’s Hospital Larkana, were taken up in the study after taking valid written consent (& confirming the eligibility as per selection criteria). All patients were delivered through cesarean section once the labor pain starts. Following delivery of the infant, 1 g of ceftriaxone and 5 IU of synthetic oxytocin was administered intravenously and the placenta was removed by controlled cord traction. The consultant obstetrician (having experience of five years) waited until signs of separation before applying traction to the cord, except in the setting of significant bleeding.

Following delivery of the placenta, a No. 24F Foley catheter was placed into the uterine cavity and inflated with 60-80 ml of saline (a volume of 150 ml can be reached before it bursts). Additional Foley catheters can be inserted, if necessary, until bleeding stops. In cases where bleeding did not stop, other standard measures were taken like; intravenous infusions of oxytocin (10–20 U), intravenous ergometrine (0.5 mg), intramuscular prostaglandin F2α or rectal insertion of misoprostol.

The researcher herself assisted the consultant obstetrician as well as collecting the data from patients on a prescribed proforma. The data were collected on demographic variables include name, age, gestational age, parity, address & socioeconomic status. Amount of bleeding was also being noted. The primary outcome variable was the detection of efficacy (achieving hemostasis) of an intrauterine balloon catheter in major placenta praevia.

**Statistical Analysis:** The data were entered in MS Excel and analyzed in SPSS version 18. Mean & standard deviation (Mean ± SD) was expressed for the continuous variables like maternal age, gestational age, height, weight, BMI, gravida, parity & amount of bleeding. Frequencies and percentages were expressed for categorical variables like socioeconomic status, address & efficacy of intrauterine balloon catheter in major placenta praevia (i.e; primary outcome variable). To evaluate the effect modification, the confounding factors like maternal age, gestational age, socioeconomic status, BMI, parity & amount of blood were stratified. It was followed by application of chi-square with a p-value<0.05 taken as significant.

**RESULTS**

### Table No.1: Demographic profile of studied females

<table>
<thead>
<tr>
<th>Variables</th>
<th>N= 62</th>
<th>Mean (S.D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of Patient (Years)</td>
<td></td>
<td>28.18 ±5</td>
</tr>
<tr>
<td>Gravida</td>
<td></td>
<td>2.45±0.89</td>
</tr>
<tr>
<td>Parity</td>
<td></td>
<td>1.45±0.18</td>
</tr>
<tr>
<td>Gestational age (Weeks)</td>
<td></td>
<td>38.65±1.3</td>
</tr>
<tr>
<td>Height (Feet)</td>
<td></td>
<td>5.54±0.3</td>
</tr>
<tr>
<td>Height (Meters)</td>
<td></td>
<td>2.86±0.31</td>
</tr>
<tr>
<td>Weight (Kgs)</td>
<td></td>
<td>71.97±9.51</td>
</tr>
<tr>
<td>BMI (Kg/ m²)</td>
<td></td>
<td>25.08± 3.93</td>
</tr>
<tr>
<td>Amount of blood loss (millilitres)</td>
<td></td>
<td>644.97± 418.8</td>
</tr>
</tbody>
</table>

### Table No.2: Percentages of studied variables in females

<table>
<thead>
<tr>
<th>Variables</th>
<th>Percentages (N=62)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of Patients</td>
<td></td>
</tr>
<tr>
<td>18-20</td>
<td>9.70%</td>
</tr>
<tr>
<td>21-30</td>
<td>53.20%</td>
</tr>
<tr>
<td>31-35</td>
<td>37.10%</td>
</tr>
<tr>
<td>Residence</td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>51.60%</td>
</tr>
<tr>
<td>Rural</td>
<td>48.40%</td>
</tr>
<tr>
<td>Gravida</td>
<td></td>
</tr>
<tr>
<td>3-4</td>
<td>48.40%</td>
</tr>
<tr>
<td>Parity</td>
<td></td>
</tr>
<tr>
<td>Null parity</td>
<td>14.50%</td>
</tr>
<tr>
<td>1-2</td>
<td>74.20%</td>
</tr>
<tr>
<td>3-4</td>
<td>11.30%</td>
</tr>
<tr>
<td>Socio-economic Status</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>12.90%</td>
</tr>
<tr>
<td>Middle</td>
<td>56.50%</td>
</tr>
<tr>
<td>Upper</td>
<td>30.60%</td>
</tr>
<tr>
<td>BMI (Body Mass Index)</td>
<td></td>
</tr>
<tr>
<td>Underweight</td>
<td>9.70%</td>
</tr>
<tr>
<td>normal weight</td>
<td>35.50%</td>
</tr>
<tr>
<td>overweight</td>
<td>45.20%</td>
</tr>
<tr>
<td>obese</td>
<td>9.70%</td>
</tr>
<tr>
<td>&lt;500</td>
<td>54.80%</td>
</tr>
<tr>
<td>501-1000</td>
<td>33.90%</td>
</tr>
<tr>
<td>1001-1500</td>
<td>4.80%</td>
</tr>
<tr>
<td>1501-2000</td>
<td>4.80%</td>
</tr>
<tr>
<td>&gt;2001</td>
<td>1.60%</td>
</tr>
</tbody>
</table>

Blood loss in milliliters
Total 62 participants of our study have mean age ± SD was 28.18 ± 5.0 year with a mean parity ± SD of 1.45 ± 0.18 children. Patients presented a maximum gestational age was 42 weeks while mean ± SD gravidity recorded was 2.45 ± 0.89 with a range of 1-4. Mean weight of patients was 71.97 ± 9.51 Kgs with a mean height of patients in feet was 2.86 ± 0.31. Mean Body mass index (BMI) on the basis of these weight & height measurements was 25.08 ± 3.93. Whereas, mean age ± SD amount of blood loss was 644.97 ± 418.81 milliliters. (Table 1).

It was observed that more than one half of total patients; 53.2% (n=33) belonged to age group of 21-30 years and 48.4% (n=30) were belonging to urban areas. However, 51.60% and 74.20% females were in 1-2 gravidity and parity group respectively. 56.5% (n=35) females had middle level of socioeconomic status, 45.2% overweight and 54.8% were bled < 500 millilitres (Table 2).

Majority of patients that is 91.9% (n=57) had presented within the gestational age of 37-40 weeks while remaining 8.1% (n=5) were in their >41 weeks of gestation. (Figure 1). With this basic data the outcome variable i.e; efficacy of balloon catheter in the prevention of bleeding, it was found that a vast majority responded and 88.7% (n= 55) women were successively saved from PPH. The failure was 11.3% (n=7) which was tackled with other measures. (Figure 2).

Study found that efficacy of balloon catheter in the prevention of bleeding was more (91.3%) in patients of elder age (31-40 years) compared to (83.3%) among those of younger age (18-20 years) and women with higher gestational age (>41 weeks) had more efficacy of balloon catheter (100%) compared to women presenting with 37-40 weeks gestation (87.7%) but both were statistically non-significant. There was a slight and non-significant difference of efficacy of balloon catheter between the different SE status women; the lower SE status being more responsive (88.7%) than Upper SE status women (87.5%). Whereas, gravidity’s relationship with the efficacy of balloon catheter revealed that women with lower gravida (1-2) had lower efficacy of treatment compared to the higher gravida. Nulliparous women had lower efficacy of treatment compared to the women with higher parity of 3-4 children but statistically non-significant. Women

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Efficacy of the treatment</th>
<th>Total</th>
<th>P- value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal age categories (years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-20</td>
<td>5 (83.3%)</td>
<td>1 (16.7%)</td>
<td>6 (100%)</td>
</tr>
<tr>
<td>21-30</td>
<td>29 (87.9%)</td>
<td>4 (12.1%)</td>
<td>33 (100%)</td>
</tr>
<tr>
<td>31-35</td>
<td>21 (91.3%)</td>
<td>2 (8.7%)</td>
<td>23 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>55 (88.70%)</td>
<td>7 (11.3%)</td>
<td>62 (100%)</td>
</tr>
<tr>
<td>Gestational age categories (weeks)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37-40</td>
<td>50 (87.70%)</td>
<td>7 (12.30%)</td>
<td>57 (100%)</td>
</tr>
<tr>
<td>&gt; 41</td>
<td>5 (100%)</td>
<td>0 (0%)</td>
<td>5 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>55 (88.70%)</td>
<td>7 (11.30%)</td>
<td>62 (100%)</td>
</tr>
<tr>
<td>Socioeconomic status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper</td>
<td>7 (87.5%)</td>
<td>1 (12.5%)</td>
<td>8 (100%)</td>
</tr>
<tr>
<td>Middle</td>
<td>31 (88.6%)</td>
<td>4 (11.4%)</td>
<td>35 (100%)</td>
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<tr>
<td>Lower</td>
<td>17 (89.5%)</td>
<td>2 (10.50%)</td>
<td>19 (100%)</td>
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<tr>
<td>Total</td>
<td>55 (88.70%)</td>
<td>7 (11.30%)</td>
<td>62 (100%)</td>
</tr>
<tr>
<td>Gravida</td>
<td></td>
<td></td>
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<tr>
<td>1-2</td>
<td>27 (84.3%)</td>
<td>5 (15.6%)</td>
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<td>3-4</td>
<td>28 (93.3%)</td>
<td>2 (6.67%)</td>
<td>30 (100%)</td>
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<td>Total</td>
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<td>62 (100%)</td>
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<tr>
<td>Parity</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Nullparity</td>
<td>7 (77.78%)</td>
<td>2 (22.22%)</td>
<td>9 (100%)</td>
</tr>
<tr>
<td>1-2</td>
<td>41 (89.10%)</td>
<td>5 (10.90%)</td>
<td>46 (100%)</td>
</tr>
<tr>
<td>3-4</td>
<td>7 (100%)</td>
<td>0 (0%)</td>
<td>7 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>55 (88.70%)</td>
<td>7 (11.30%)</td>
<td>62 (100%)</td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underweight</td>
<td>6 (100%)</td>
<td>0 (0%)</td>
<td>6 (100%)</td>
</tr>
<tr>
<td>Normal weight</td>
<td>22 (100%)</td>
<td>0 (0%)</td>
<td>22 (100%)</td>
</tr>
<tr>
<td>Over weight</td>
<td>24 (85.71%)</td>
<td>4 (14.29%)</td>
<td>28 (100%)</td>
</tr>
<tr>
<td>Obese</td>
<td>2 (33.33%)</td>
<td>4 (66.67%)</td>
<td>6 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>55 (88.70%)</td>
<td>7 (11.30%)</td>
<td>62 (100%)</td>
</tr>
<tr>
<td>Amount of blood loss in millilitres</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;500</td>
<td>34 (100%)</td>
<td>0 (0%)</td>
<td>34 (100%)</td>
</tr>
<tr>
<td>501-1000</td>
<td>21 (100%)</td>
<td>0 (0%)</td>
<td>21 (100%)</td>
</tr>
<tr>
<td>1001-1500</td>
<td>0 (0%)</td>
<td>3 (100%)</td>
<td>3 (100%)</td>
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<td>3 (100%)</td>
<td>3 (100%)</td>
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<tr>
<td>&gt;2001</td>
<td>0 (0%)</td>
<td>1 (100%)</td>
<td>1 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>55 (88.7%)</td>
<td>7 (11.30%)</td>
<td>62 (100%)</td>
</tr>
</tbody>
</table>
with underweight & normal weight both had 100% efficacy of balloon catheter compared to overweight and obese women. Result found that women having a lesser bleeding amount (< 1000 ml) had 100% efficacy of balloon catheter compared to those > 1000 milliliters (P-value = 0.0001).

![Figure No.1: The frequency of patients as per presenting gestational age.](image1)

![Figure No.2: The frequency of efficacy of balloon catheter in the prevention of bleeding. (n=62)](image2)

**DISCUSSION**

The increase in the recorded incidence of placenta praevia in the past few decades is being contributed to the increase in cases of the postpartum hemorrhage and its related complications. Hysterectomy can be an undesirable action to take, especially in the case of a low parity patient. Usually, this step is taken when other traditional measures to stop hemorrhage fail. Various management options are utilized for control of bleeding caused by this clinical abnormality and conservative approaches are becoming increasingly used instead of a hysterectomy.\(^{11}\)

The current study has evaluated the efficacy of intrauterine balloon catheter in control of bleeding from placental bed during cesarean section in cases of major placenta praevia. In a sample of 45 patients diagnosed with the above-mentioned condition, it was found that hemostasis was achieved in a very large proportion of cases (i-e; 88.7%; n= 55) and only in 11.3% (n=7) cases major bleeding occurred (>500 ml) and intervention of balloon catheter failed. Comparing to these results, other contemporary studies have also found almost mimicking outcomes. A local study\(^{12}\) and another study from Iran have reported the success of intrauterine balloon catheter in achieving hemostasis with a rate of 88% & 80% respectively.\(^{13}\)

The current study noted that efficacy of balloon catheter in the prevention of bleeding was more among women of elder age compared to younger ages (RR = 1.09) however the finding not associated with statistical significance (P value = 0.839). Likewise; it was noted women who presented with higher gestational age, lower SE status, higher gravida, higher parity & normal weight women had more positive results and efficacy success rate of the balloon catheter in the prevention of bleeding than their counterparts. Other studies have found similar results. However, some studies do not match with the current study findings wherein, parity and maternal age are the factors of difference. These studies reported the elder maternal age and high parity both cause higher failure rate of efficacy of balloon catheter in prevention PPH\(^{15,19}\) and 20). The current study found the use of a balloon catheter in the prevention of bleeding is also very much effective. Hence to prevent intraoperative & postpartum hemorrhage during & after LSCS operation due to major degree placenta praevia can be successively achieved with this. This
intervention is directly useful in lowering the high incidence of maternal mortality and morbidity."

**CONCLUSION**

The use of intrauterine balloon catheter in cases of major placenta praevia as the first step in order to prevent intractable PPH as well as minimize the chances of undesirable hysterectomy.

**Author’s Contribution:**
- Concept & Design of Study: Sania Pirzada
- Drafting: Tanweer Akhtar, Shaista Tabassum Abro
- Data Analysis: Shazia Shaikh, Shabnam Naz, Fouzia Kashif
- Revisiting Critically: Sania Pirzada, Tanweer Akhtar
- Final Approval of version: Sania Pirzada

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

**REFERENCES**

Frequency of Lymph Node Metastasis in Oral Cavity Cancer with Clinically Node Negative
Allah Bux Mushtaq¹, Abdul Waheed² and Mukhtar Ibrahim³

ABSTRACT

Objective: To determine the frequency of lymph node metastasis in oral cavity cancer with clinically node negative (N₀).

Study Design: Descriptive / cross sectional study.

Place and Duration of Study: This study was conducted at the Department of Otolaryngology, Sindh Government Lyari General Hospital, Karachi from January 2015 to June 2016.

Materials and Methods: All patients with aged 20 years or more with either gender presented with more than 3 months oral cavity cancer with clinically N₀ diagnosed on histopathology having stage T₁ or T₂ were enrolled. Presence of abnormal cells in lymph nodes was taken as metastasis positive.

Results: Mean age of the patients was 43.93 ±7.87 years. Male preponderance was found to be higher 71 (75.50%) as compared to females 23 (24.50%). Betel quid chewing was found in majority 56 (59.60%) patients followed by cigarette smoking 52 (55.30%), areca nut 42 (44.70%), gutka 36 (38.30%) and naswar 33 (35.10%). Lymph node metastasis was found in 39 (41.50%) patients.

Conclusion: The frequency of lymph node metastasis was noted in 41.50% oral cavity cancer with clinically node negative (N₀).

Key Words: Lymph Node Metastasis, Clinically Node Negative, Oral Cavity Cancer

INTRODUCTION

Oral cancer is one of the most common types of tumor in the head and neck (38%) with an incidence of 75% in male patients over age 60 years old, while about 95% of cases are squamous cell carcinomas.¹ Oral squamous cell carcinoma is an invasive lesion with the presence of perineural growth. It has a significant recurrence rate and frequently metastasizes to cervical lymph nodes.² Lymph node metastatic tumors occur in about 40% of patients with oral cancer. Clinically, their manifestations are hidden in rates of 15% to 34%.³⁻⁴ However, despite significant advances in surgery and chemotherapy achieved over the past decades, oral cancer is still characterized by poor prognosis and a low survival rate.⁵⁻⁶

In patients diagnosed with tumors at an advanced stage, there is a high occurrence of invasion to surrounding tissues, with lymph node and distant metastasis, and a peculiarly high risk of second malignancy during the patient’s lifetime.⁷ The rationale of the study is that cervical metastasis is the major determinant of prognosis and management of early stage cancer is still controversial. Therefore, actual magnitude of lymph node metastasis has to be known that will help in decision making for management of early stage oral cavity cancer.

MATERIALS AND METHODS

The study was conducted at Department of Otolaryngology, Sindh Government Lyari General Hospital, KarachiFrom January 2015 to June 2016. The study design was Descriptive Cross sectional study. The inclusion criteria were patients of Oral cavity cancer with clinically NO diagnosed on histopathology, Stage T₁ and T₂, Duration of symptoms 3 months or more, Aged 20 years or more and Either gender. The Exclusion criteria was Patients with T₃, T₄, N+ve, Recurrence of Oral cavity cancer, Site of origin of cancer other than oral cavity and Received any prior treatment. Patients of Oral cavity cancer with clinically NO meeting the inclusion criteria admitted in the department of Otolaryngology of the institute were included in the study. Prior to inclusion the pros and cons of the study was explained to the patient and
written informed consent was taken for inclusion in the study and for surgery.
History of the patients regarding the duration of symptoms and factors leading to oral cavity cancer was taken and local examination was done by the principal investigator. Surgery was performed by consultant having more than 2 years of post-fellowship experience under general anaesthesia.
Specimen of regional lymph nodes was sent to the institutional laboratory for histopathology. Report of the histopathology was followed and presence of abnormal cells in lymph nodes was taken as metastasis positive. This information along with stage of tumour, duration of symptoms, factors leading to it, age and gender was noted.
Statistical package for social sciences for windows was used for data entry and analysis. Data was double entered, cleaned and coded. Frequencies and percentages were calculated and presented for qualitative data like gender, stage of tumour, site of tumour and associated factors. Mean±S.D was calculated and presented for quantitative data like age, duration of symptoms and size of tumour. Multivariate analysis was done to address the effect modifiers like gender, age, stage, duration of symptoms, size of tumour and associated factors. 95% confidence interval was also calculated.

RESULTS

Mean age of the patients was 43.93 ±7.87 years. Majority of the patients 81 (86.2%) were presented with >40 years of age. Male preponderance was found to be higher 71 (75.50%) as compared to females 23 (24.50%). Mean duration of symptoms was 4.02 ±0.74 months. Majority of the patients 67 (71.30%) were presented with ≤4 months of duration of symptoms. Mean tumor size was 2.64 ±0.78 cm.

![Figure No.1: Site of Tumor](image)

Majority of the patients 76 (80.90%) had ≤3 cm of tumor size. There were 54 (57.40%) patients with T1 stage of tumor while 40 (42.60%) had T2 stage of tumor. Majority of the patients 58 (61.70%) had buccal mucosa site cancer followed by lower alveolus 17 (18.10%), lips 13 (13.80%) and tongue 6 (6.40%). Betel quid chewing was found in majority 56 (59.60%) patients followed by cigarette smoking 52 (55.30%), areca nut 42 (44.70%), gutka 36 (38.30%) and naswar 33 (35.10%). Lymph node metastasis was found in 39 (41.50%) patients.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Univariate Analysis</th>
<th>Multivariate Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>95% CI</td>
</tr>
<tr>
<td>Age, in years</td>
<td>1.05</td>
<td>0.95-1.05</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>1.77</td>
<td>0.68-4.58</td>
</tr>
<tr>
<td>Duration of Symptoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤4 months</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>&gt;4 months</td>
<td>0.61</td>
<td>0.24-1.56</td>
</tr>
<tr>
<td>Stage of Tumor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1</td>
<td>-</td>
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</tr>
<tr>
<td>T2</td>
<td>2.21</td>
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</tr>
<tr>
<td>Site of Tumor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tongue</td>
<td>0.41</td>
<td>0.06-2.81</td>
</tr>
<tr>
<td>Lips</td>
<td>0.66</td>
<td>0.14-3.07</td>
</tr>
<tr>
<td>Buccal Mucosa</td>
<td>0.51</td>
<td>0.16-1.64</td>
</tr>
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<td>Lower Alveolus</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Betel Quid</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No</td>
<td>0.09</td>
<td>0.03-0.28</td>
</tr>
<tr>
<td>Gutka</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No</td>
<td>0.47</td>
<td>0.20-1.10</td>
</tr>
<tr>
<td>Areca Nut</td>
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</tr>
<tr>
<td>Yes</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No</td>
<td>1.85</td>
<td>0.79-4.29</td>
</tr>
<tr>
<td>Cigarette Smoking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No</td>
<td>0.09</td>
<td>0.03-0.26</td>
</tr>
</tbody>
</table>

OR: Odds Ratio, AOR: Adjusted Odds Ratio, CI: Confidence Interval

Multivariate analysis showed that people who did not chew betel quid were 87% less likely to have lymph node metastasis as compared to the people who chew
betel quid (OR: 0.13, 95% CI: 0.04-0.43, p-value 0.001) and people who smokes cigarette were 88% less likely to have lymph node metastasis as compared to the patients who smokes cigarette (OR: 0.12, 95% CI: 0.04-0.39, p-value 0.001).

Current study shows that more than twenty percent likelihood of neck metastases-occult (in neck that is palpatory negative) is found suggestive of elective neck treatment, suggesting for radiative therapy and also surgery as it seems effective. This Occult metastasis likelihood, that can appear in neck from both sides, is established through primary tumor features i.e. site and size, alongwith various biological touchstones.\(^\text{15}\)

Owing to the enhanced nodal metastases risk, even in necks that are clinically negative, most patients having tumors at T2 stage or more than that undergo any neck treatment (elective). A shortfall in this method is that the major number of patients do not carry metastases, thus were rendered to the morbid management. By analysing otherwise occult adenopathy, advanced imaging methods may show higher sensitization to positive nodes detection which accordingly reduce occult metastasis likelihood below twenty percent.

DISCUSSION

From Darwinistic point of view, Metastasis was construed as a process wherein cell heterogeneity is strengthened by the genetic unsteadiness of primary tumor, allowing few metastatic clones to show and spread cancer at distance.\(^\text{8}\) This accounts for the most overwhelming malignancy stage and the vital factor of cancerous death. Metastasis comprises chronological events involving spread, spur of angiogenesis, mobility, inflow into bloodstream and interaction with ingredients of the fresh micro-habitation, involving functional inflammatory and stromal cells.\(^\text{9,10}\)

Apparentely slight malignant cells portion under-take metastatic track, owing to an inter-play between inherent features of cancer cells and host factors; hence metastasis may depict cells escaping the unfriendly atmosphere created by them, i.e. paucity of O2 and required nutrients, immunity attacks and inflammation.\(^\text{11-13}\)

Lymph node metastatic growth cells are identified in around 40% patients having oral cancer.

Their appearances are from 15% to 34%.\(^\text{14-15}\) However, regardless of major advancements in surgery/chemotherapy obtained over the past periods, a low endurance rate and poor prognosis is its characteristic.\(^\text{16}\) Where patients having tumors diagnosed at complex level, increased incidence of invasion in adjoining tissues, having distant metastasis/ lymph node, as well as abnormal increased risk of 2nd malignancy during the lifetime is likely.\(^\text{4,7}\)

Moreover, because of the fact that lymphatic metastasis occurs frequently that affects prognosis, a treatment decision of neck lymph nodes has to be made in every patient, even metastases are clinically absent. In case of patient possessing metastases of local lymph node needs to be critically assessed. It is established that the mechanism of palpation is an ineffective method to identify cancer stage in neck.

Figure No.2: Associated Factors

CONCLUSION

The frequency of lymph node metastasis was noted in 41.50% oral cavity cancer with clinically node negative (No).

Author’s Contribution:

Concept & Design of Study: Allah Bux Mushtaq
Drafting: Abdul Waheed
REFERENCES


Improvement in Quality of Life after Surgery, in Gynaecomastia Patients
Muhammad Hussain, Ijaz Hussain Shah, Naheed Ahmad Ch, Muhammad Aamir Adnan, Muhammad Bilal Saeed and Dur-e-Shahwar

ABSTRACT

Objective: To evaluate the effects of surgery in gynaecomastia patients in context of physical and psychological improvement.

Study Design: Observational study.

Place and Duration of Study: This study was conducted at the Department of Pak Italian Modern Burn Centre, Nishtar Medical University & Hospital Multan from January 2017 to June 2018.

Materials and Methods: Total 40 male patients (mean age 25.5 years) were included in survey, all underwent surgery for gynaecomastia. 6 patients underwent only liposuction and 34 patients underwent fibrous tissue excision through periareolar incision and liposuction. We used a short questionnaire having 2 questions regarding their satisfaction before and after surgery.

Results: The change in the satisfaction was very significant after the surgery for gynaecomastia. They scored significantly higher than before surgery on 2 main scales, psychological and physical health.

Conclusion: Surgery for gynaecomastia markedly improved patient’s life quality especially in physical and psychological health. This shows that adults with gynaecomastia issues are pretty satisfied with surgery and it improves their quality of life. It is also evident on score scale.

Key Words: Improvements In Life, After Surgery, Gynaecomastia Patients


INTRODUCTION

Enlarged breasts in the young male may be source of emotional distress, psychological problem and it can reduce selfconfidence. This condition can also result in decrease participation in sports and physical education activities due to embarrassment fear of pejorative peers' attitude.1-3 These adolescents with gynaecomastia can face difficulties in developing relations with women and suffer from a lack of social acceptance. So they try to hide their chest contour by wearing loose dresses. They also start using compression vests and adopt inappropriate postural position that leads to spinal issues. However, the literature concerning psychosocial problems of men with gynaecomastia is rather scarce.2,3 Once the etiology of the gynaecomastia has been ruled out, treatment includes the reassurance & follow-up physical examination (in case of physiological gynaecomastia), pharmacological treatment, or surgical breast reduction. Surgical options are according to the type of excessive tissue. It may be in the form of excessive glandular, fibrous, fatty or excess skin tissue. Invasive techniques include removal of excessive glandular tissue, fatty tissue, and skin by subcutaneous mastectomy, breast reduction. Other less invasive techniques are liposuction and pull-through technique through smaller skin incision.4,5 Excellent aesthetic results, in patients with small and moderate gynaecomastia, can be achieved. But it is very challenging to obtain even a good aesthetic outcome in patients with high-grade gynaecomastia. Ridha et al9 concluded that a measure of treatment success in these patients should be patient's satisfaction. This suggests that apart from objective aesthetic outcomes evaluation, treatment results should also be analyzed in the context of patient subjective assessment.

So, the objective of our study was to evaluate the results of surgical treatment of gynaecomastia in the context of improvement of patients’ quality of life and satisfaction with the surgery.

MATERIALS AND METHODS

Forty patients underwent surgery for gynaecomastia in our unit during 2 years and completed both (preoperative and postoperative) stages of the study and they were included in the analysis. Inclusion criteria for the patients were; all males 18 years or above age, bilateral symmetrical or asymmetrical enlargement, no hormonal issues, regardless of etiology, all falling in 2a...
and 2b classification and do not need skin excision. Exclusion criteria were suspected breast tumor, having psychological disorder, falling in class 1 & 3 of gynaecomastia, not yet completed hormonal therapy. The mean age of the men involved in the study was 25.5 years (SD 6 years). The mean age of gynaecomastia onset was 15 years (SD 4.2 years). For surgery, all the patients received general anesthesia and infiltration of tumescent fluid. 34 patients underwent liposuction and fibrous tissue excision through 3 to 9 o’clock periareolar incision. Remaining 6 patients underwent only liposuction. Minimal skin excess in 2b patients got good contraction and there was no skin excess at 6 months follow up. Patients were sent home after 24 hours of surgery after dressing change and on compression dressing for 6 weeks. They were asked to come for follow-up visit after 3 and 6 months after sutures removal. A few patients noted ecchymosis but it settled in 10 days. Complications (periooperative and late postoperative) occurred in 3 patients. Two subjects reported prolonged hyposthesia of the nipple-areola complex. We used a short questionnaire including two questions about patient satisfaction with gynecomastia surgery. It includes the following items:

–Before Surgery: “How would you define your personal Life before surgery regarding your concern of issue?
1- Highly satisfied 2-Satisfied 3-Neutral 4- Dissatisfied 5- Highly dissatisfied.
–After Surgery: “How would you would define your personal life after surgery?
1- Highly satisfied 2-Satisfied 3-Neutral 4- Dissatisfied 5- Highly dissatisfied.

RESULTS
The results were transformed into 1 to 5 likert scale (LS), where lower values meant answer that is more positive.

Table No.1: Age Group of Patients.

<table>
<thead>
<tr>
<th>Age Group (Years)</th>
<th>No. of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30</td>
<td>30</td>
</tr>
<tr>
<td>30-40</td>
<td>8</td>
</tr>
<tr>
<td>40-50</td>
<td>2</td>
</tr>
<tr>
<td>Above 50</td>
<td>0</td>
</tr>
</tbody>
</table>

Table No.2: No of patients falling in Simon grade 2a and 2 b.

<table>
<thead>
<tr>
<th>No of Simon grade 2a patients</th>
<th>No of Simon grade 2b patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>14</td>
</tr>
</tbody>
</table>

Table No.3: No of patients according to intervention.

<table>
<thead>
<tr>
<th>Patients underwent only liposuction</th>
<th>Patients underwent liposuction &amp; fibrous tissue excision through periareolar incision</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>34</td>
</tr>
</tbody>
</table>

All the data is analyzed through SPSS version 18. Descriptive statistics like mean and standard deviation were found for the variables like age and responses obtained from patients before and after surgery to check their level of satisfaction and conclusions are drawn accordingly.

DISCUSSION
Gynaecomastia is breast enlargement. It may be unilateral or bilateral. Simon classified gynaecomastia in 3 classes.
Class I: mild visible breast enlargement, no skin excess.
Class IIA: moderate breast enlargement, no skin excess.
Class IIB: moderate breast enlargement with mild skin excess.
Class III: Marked breast enlargement with significant extra skin.

Gynecomastia is a breast disease with a strong impact on men especially during the pubertal phase. There are various options for treatment of Simon’s grade 2a and 2b gynaecomastia. Nuzzi et al., analyzed life quality of adolescents and young men with gynecomastia (aged 12–21 years) using SF 36v2. They found that subjects with gynecomastia scored significantly lower than the controls in the following domains: general health, vitality, social aspects, limitations due to emotional aspects and Psychical Health. In 1996, Davanço et al, who used SF-36, found that after surgical treatment patients life quality improved significantly in the domains: general health, vitality, social aspects, limitations due to physical aspects, and Psychical Health. Although gynecomastia does not cause any apparent serious health detriment, the patient considers it serious. In this article we are assessing patient’s satisfaction level after surgery for Simon grade 2 gynaecomastia. In 34 patients (out of 40 patients), we have performed power assisted liposuction and fibrous tissue removal through periareolar incision. And 6 of our patients only needed liposuction due to more glandular tissue. Our results show that patients are very satisfied with their surgery. Only 1 patient was not satisfied with periareolar prominent scar. Although he was satisfied with overall change in breast size. These findings are very similar to the data presented by Fruhstorfer et al, they found that more than 90% of men who underwent gynaecomastia surgery were satisfied with their outcome. Ridha et al. observed that patients satisfaction with surgical breast reduction was not as high as described in earlier studies. The authors noted the need for appropriate selection of patients eligible to surgery, with particular consideration of their expectations concerning the possible aesthetic effects. Although, it is single center study and may include smaller sample size, but we found that gynecomastia surgical treatment significantly improved men's life quality in all aspects and especially in the social aspect and psychical health. This indicates that adult men with gynecomastia are a specific group, in which surgery may result in life quality improvement.

CONCLUSION
Gynaecomastia in young men is very embarrassing and disturbing and it decreases their self-confidence. Surgical treatment for Simon grade 2a and 2b is very beneficial. They are very satisfied from psychological and physical context after the surgery. So such patients should be encouraged to undergo surgery for gynaecomastia.

Author’s Contribution:
Concept & Design of Study: Muhammad Hussain
Drafting: Ijaz Hussain Shah, Naheed Ahmad Ch.
Data Analysis: Muhammad Aamir Adnan, Muhammad Bilal Saeed, Dur-e-Shahwar
Revisiting Critically: Muhammad Hussain, Ijaz Hussain Shah
Final Approval of version: Muhammad Hussain

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

REFERENCES
Outcome of Ultra-Thin Abdominal Flap for Wrist and Forearm Wounds Coverage

Muhammad Nasrullah¹, Waseem Humayoun² and Husnain Khan³

ABSTRACT

Objective: To assess outcome of ultra-thin abdominal flap for wrist and distal forearm flap wounds coverage.

Study Design: Descriptive longitudinal study

Place and Duration of Study: This study was conducted at the Department of Plastic Surgery, Jinnah Burn & Reconstructive Surgery Centre/Allama Iqbal Medical College, Lahore from January 2017 to December 2018.

Materials and Methods: Sixty patients of both genders having injury of hand and distal forearm with ages 15 to 65 years were included. Soft tissue was provided with ultrathin abdominal flap. After harvesting of conventional abdominal flap, the subcutaneous fat was trimmed up to the thickness of 2 to 4 mm thereby saving the subdermal vascular plexus.

Conclusion: Ultra-thin abdominal flap is well founded and safe treatment modality for the reconstruction of trauma of hand and distal forearm as it provides reliable soft tissue coverage that gives better match and contour.

Key Words: Ultra-thin abdominal flap, Harvesting, Pliable tissue, Cosmesis

INTRODUCTION

Soft-tissue deformity of hand and forearm are commonly seen after injury, burns and tendons of tissues and muscles. Management of these cases are very difficult for the reconstructive surgeons. In order to preserve the underlying vital structures immediate vascularized soft-tissue coverage is required. To achieve this objective, multiple flap options are used including local, regional, distant and free-flaps.¹³ Due to extensive injuries local and regional flaps may be not available and other modality like free-tissue transfer required prolong anaesthesia, expertise and patient’s blood-vessels out of traumatome. Many of studies illustrated that the use of abdominal flap is safer and had better outcome in term of cosmetic and better survival rate for coverage of hand and distal forearm wounds.⁴⁵

If the donor tissue is not thin, then the decision is to be made to choose between a multi-stage procedure by transferring a thick flap and subsequently debunking it or transferring skin as flap-graft principle.⁶ Many flaps have been described and used for coverage of various soft-tissue defects. Of these flaps, there are reversed flow flaps that sacrifice a great vessel like reversed radial forearm flap and reversed perforator forearm flaps that do not sacrifice vessels.⁷ Also there are distant flaps that are often used for their construction of larger defects and offer a great amount of skin without other donor site morbidity to the injured hand. Distant flaps may be pedicle or free flaps.⁸

The abdominal flap is a time-tested flap that is used for resurfacing degloving injuries of the palmar and dorsum of the hand. It has the advantages of ease of elevation, ease of positioning and vascular reliability, while the groin flap is a pedicled flap which is based on the superficial circumflex iliac artery. It provides thin, compliant skin for the thumb, single finger and double finger defects. This flap has the advantage of primary donor site closure, hidden donor site, vascular reliability and versatile use.⁹¹³

MATERIALS AND METHODS

This descriptive longitudinal study was carried out at Outpatient Department Jinnah Burn & Reconstructive Surgery Centre / AICMC Lahore from 26th January 2017 to December 2018. A total of 60 patients having trauma to the hand and distal forearm were included. Patients between 15 to 65 years of age were included require flap coverage with ultra-thin abdominal flap. Exclusion criteria were patients with trauma or surgery in donor area, defect size greater than primary closure of donor site, patients with arthritis and stiff joints. After
harvesting of conventional abdominal flap, the subcutaneous fat was trimmed up to the thickness of 2 to 4 mm thereby saving the sub dermal vascular plexus (Figs. 1-4).

RESULTS

We enrolled total 60 patients out of which 45 (75%) were male and 15 (25%) were female who sustained injury to their hand or distal forearm. 20 (33.33%) patients were ages 15 to 30 years, 24 (40%) patients had ages 31 to 45 years and 16 (26.67%) patients were ages above 45 years (Table 1). The overall flap survival found in 56 (93.33%) in which 42 (75%) were men and 25% were women (Table 2).

Table No.1: Demographical details of all the patients (n=60)

<table>
<thead>
<tr>
<th>Variable</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>45</td>
<td>75.0</td>
</tr>
<tr>
<td>Female</td>
<td>15</td>
<td>25.0</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 - 30</td>
<td>20</td>
<td>33.4</td>
</tr>
<tr>
<td>31 - 45</td>
<td>24</td>
<td>40.0</td>
</tr>
<tr>
<td>&gt;45</td>
<td>16</td>
<td>26.6</td>
</tr>
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</table>

Table No.2: Gender-wise overall flap survival (n=60)

<table>
<thead>
<tr>
<th>Total flap survival</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (n=56)</td>
<td>42 (75%)</td>
<td>14 (25%)</td>
<td>93.33</td>
</tr>
<tr>
<td>No (n=4)</td>
<td>2 (50%)</td>
<td>2 (50%)</td>
<td>6.67</td>
</tr>
</tbody>
</table>

Table No.3: According to the necrosis (n=56)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>P necrosis without dehiscence</td>
<td>5</td>
<td>7.14</td>
</tr>
<tr>
<td>P necrosis with dehiscence</td>
<td>2</td>
<td>3.57</td>
</tr>
<tr>
<td>Total flap necrosis</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table No.4: Frequency of cosmesis in genders (n=56)

<table>
<thead>
<tr>
<th>Cosmesis</th>
<th>Male</th>
<th>%</th>
<th>Female</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very pleased</td>
<td>32</td>
<td>57.14</td>
<td>7</td>
<td>12.5</td>
</tr>
<tr>
<td>Pleased</td>
<td>9</td>
<td>16.07</td>
<td>5</td>
<td>8.93</td>
</tr>
<tr>
<td>Displeased</td>
<td>2</td>
<td>3.57</td>
<td>5</td>
<td>8.93</td>
</tr>
</tbody>
</table>
DISCUSSION

Soft tissue injuries are commonly found in reconstructive settings. For the coverage of hand and forearm injuries pedicle abdominal flap is a good and reliable and had better outcomes in term of cosmetic results. Use of abdominal tissue as a donor for hand soft tissue defects reconstruction will help preserving the sacrifice of major blood vessel to hand as in the case with radial forearm and ulnar forearm flap. The dissection is quite easy and thus obviates the need of tedious dissection like that of posterior interosseous artery flap.

In present study, 60 patients were included and from all the patients 45 (75%) were men and 15 (25%) were women who sustained injury to their hand or distal forearm. Hand injury was more common than forearm injury. Patients having injury to their hand were 44 (73.33%) and rest of 26.67% patients had distal forearm injury. The mode of injury in most of the cases was machine injury. Some patients presented after road traffic accidents. These results were similar to some other studies conducted regarding reconstruction of distal forearm and hand injuries in which male patients population was high as compared to females. In our study, all the patients underwent debridement initially and were provided soft tissue by ultra-thin abdominal flap. Patients were followed for 2 weeks after second stage of division and in setting. We found that the reliability of this technique is excellent as there was the overall flap survival found in 56 (93.33%) in which 42 (75%) were men and 25% were women (Table 2). Five (7.14%) patients had found partial necrosis without dehiscence, 2 (3.57%) patients found to had partial necrosis with dehiscence and no patients found to have total flap necrosis. Four out of 5 patients with partial necrosis without dehiscence was managed conservatively and the wound was healed by secondary intention. The patient with partial necrosis of flap with dehiscence required flap advancement. These results were comparable to some other studies in which the total flap survival was 90 to 95%. All the patients were managed by restitching at the time of division of flap pedicle.

In our study we found according to the cosmosis 39 (65%) were very pleased in which 32 patients were men and 7 were women, 14 (23.33%) patients were only pleased in which 9 were men and 5 were women and 7 (11.67%) patients were displeased in which 2 were men and 5 were women. A study conducted by Lin et al reported 34 (51.8%) patients were very pleased. Only 7 (12.7%) patients fell into category of displeased. It was evident from our result that displeasure was more common in females. As only 38.5% women were very pleased from their final results. This may be attributed to the fact that females are more concerned about their cosmetic values. Female patients were more concerned about the scaring associated with their construction. The bulk of the flap was considered satisfactory in all the patients.

In our study, complete flap survival is fairly comparable with the mentioned study showing significant outcome with 93.33% complete survival without any complication. Our study also confirms the fact that para-umbilical perforator flap can survive if the sub dermal blood vessel plexus is undamaged. This validates the results of study by Colson et al used glove flap (modified thin abdominal wall flap) for the treatment of acute burns for fingers and hands and attained good results. They treated 7 hands in 5 patients with thin abdominal flap in glove pattern. In their study all the flaps survived in all cases. They concluded that function of hand and finger were salvaged with the preservation of range of motion in each joint.

CONCLUSION

We concluded from this study that the use of ultra-thin abdominal flap for the coverage of hand and forearm trauma is very reliable modality and had better outcome in term of cosmetics results. It is also concluded that reconstruction of soft tissue defects by ultra-thin abdominal flap is the safe procedure. In this study the overall pleased results was 93.33% this shows that procedural effectiveness and patients satisfaction. There were no procedural and other complications found.

Author’s Contribution:
Concept & Design of Study: Muhammad Nasrullah
Drafting: Waseem Humayoun
Data Analysis: Husnain Khan
Revisiting Critically: Muhammad Nasrullah, Waseem Humayoun
Final Approval of version: Muhammad Nasrullah

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

REFERENCES

Immuono Histochemical Expression of Ki-67 in Adenoid Cystic Carcinoma of Salivary Gland Tumors

Sultan Muhammad Wahid1, Zainab Rizvi1, Faiz Rasul1, Muhammad Talha Haseeb2, Rozina Jaffar3 and Memona Ansari1

ABSTRACT

Objective: To determine expression of Ki-67 in Adenoid cystic carcinoma of salivary glands.

Study Design: Descriptive study.

Place and Duration of Study: This study was conducted at the Department of Oral Pathology, de’Montmorency College of Dentistry, Lahore from May 2014 to December 2016.

Materials and Methods: Thirty two cases of Adenoid cystic carcinoma (ADCC) of salivary glands were selected from Departments of Surgery, Lahore General Hospital, Mayo Hospital, and de’Montmorency College of Dentistry, Lahore. Slides were prepared by routine hematoxylin and eosin (H & E) staining, as well as by Immunohistochemistry (IHC) for Ki-67. Grading of ADCC was done as low, intermediate and high grades on H&E sections. Scoring of Ki-67 expression was determined on Ki-67 immunohistochemically stained slides. Data was entered into SPSS version 22 and descriptive statistics were determined.

Results: Out of 32 cases of Adenoid cystic carcinomas 68.1% (22) reported in female and remaining in male (10) 31.2%. Total cases of intermediate grade ADCCs were 43.8%, high grade ADCCs were 31.3%, and low grade ADCCs were 25%. Strong positive expression was observed in 93.8% cases and only 6.3% showed moderate positive expression. A significant association of Ki 67 with grades of Adenoid Cystic Carcinoma was observed (p 0.041).

Conclusion: Ki-67 is expressed in Adenoid cystic carcinoma. In most of the cases ADCC expressed strong positive expression of Ki-67. Its expression is helpful in grading small biopsies, predicting behavior, and planning target therapy of Adenoid cystic carcinoma.

Key Words: Ki-67, salivary gland tumors, immunohistochemistry, Adenoid cystic carcinoma


INTRODUCTION

Benign tumors are common in females whereas malignant tumors are more common in males.1 Malignant salivary gland tumors are 0.3 % of all malignancies.2 There are 24 types of malignant salivary gland tumors having diverse morphology.2,3,4 Adenoid Cystic Carcinoma (ADCC) is a rare malignancy of salivary glands which accounts for only 1% of all malignant tumors of the head and neck region and 10% of all salivary gland neoplasms.

It occurs more commonly in minor as compared to major salivary glands.5 This tumor can be diagnosed in salivary glands, breast, tracheobronchial tree, lacrimal gland, skin, female genital tract and prostate. Out of all these Salivary Gland (SG) of the oral cavity is the most common site ranking 19.8% and tongue is the second most common site ranking 39.9% and 23.5 % and 76.5 % respectively.6,7 It is more commonly detected in the lungs, bones, liver and brain.8 The carcinoma is usually diagnosed on histopathology which shows tissue composed of inner ductal epithelial cells and outer myoepithelial cells. Three growth patterns have been described: the
cribriform or glandular type, the tubular type and the solid type with the solid type showing more aggressive behaviour and poor prognosis. The other diagnostic tools are initial needle biopsy, core needle biopsy and Immunohistochemistry Ki-67 is the most commonly used cell proliferation markers. Its Immunohistochemical expression increases with cell cycle progression and reaches its peak during the G2 and M phases suggesting high biological aggressiveness of tumour with poor prognosis. A considerable number of researches have linked Ki-67 expression with the aggressiveness and prognosis of adenoid cystic carcinoma, although the results are still inconclusive. The aim of this study was to determine expression of Ki-67 in ADCC of the salivary glands tumors.

MATERIALS AND METHODS

It is a descriptive study conducted in Postgraduate Medical Institute, Lahore after the approval of ethical board during period of May 2014 to December 2016. Total thirty two cases of ADCC of salivary glands were included in this study after taking written and verbal consent from the patients. These cases were collected from Departments of Surgery, Lahore General Hospital, Mayo Hospital, and de’Montmorency college of Dentistry, Lahore. Routine processing and slides preparation was done in the Histopathology Laboratory of PGMI, Lahore. Slides were stained with routine Hematoxylin and Eosin (H&E) stain. Grading of ADCC was done as low, intermediate and high grade. Immunohistochemical staining for Ki-67 antigen was also done and scoring of Ki-67 expression was determined on Ki-67 immunohistochemical stained slides. Ki-67 immunoreactivity was divided into four groups as: score zero (0); negative [when neoplastic cells stained less than 5%], score one (1): + weak positive (WP) [when neoplastic cells stained 5-19%], score two (2): ++ moderate positive [when neoplastic cells stained 20-50%] score three (3): +++ strong positive (SP) [when neoplastic cells stained more than 50%]. Observations were recorded based on intensity of nuclear staining. The intensity was graded in all the cases with 0, 1, 2 and 3 to represent negative, weak positive, moderate positive and strong positive staining respectively. Cares was taken to decrease the subjectivity by ensuring (a) two observations per field area of slide and (b) by intra-lesional comparison with a positive control. Data was entered into SPSS version 22 and descriptive statistics were determined. P value <0.05 was taken as significant.

RESULTS

Out of 32 cases of Adenoid cystic carcinomas 68.1% (22) reported in female and remaining in male (10) 31.2%. Total cases of intermediate grade ADCCs were 43.8%, high grade ADCCs were 31.3%, and low grade ADCCs were 25%. Strong positive expression was observed in 93.8% cases and only 6.3% showed moderate positive expression. A significant association of Ki-67 with grades of Adenoid cystic Carcinoma was observed (p 0.041).

Table No.1: Clinicopathological characteristics of ADDC

<table>
<thead>
<tr>
<th>Clinicopathological characteristics</th>
<th>No. (f)</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-40</td>
<td>10</td>
<td>31.2</td>
</tr>
<tr>
<td>41-60</td>
<td>10</td>
<td>31.2</td>
</tr>
<tr>
<td>61-80</td>
<td>12</td>
<td>37.5</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Gender:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>22</td>
<td>68.8</td>
</tr>
<tr>
<td>Female</td>
<td>10</td>
<td>31.2</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Hospital</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mayo hospital</td>
<td>14</td>
<td>43.7</td>
</tr>
<tr>
<td>Lahore General</td>
<td>12</td>
<td>37.5</td>
</tr>
<tr>
<td>de’Montmorency College of Dentistry/ PDH</td>
<td>6</td>
<td>18.8</td>
</tr>
<tr>
<td>Total</td>
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<td>100.0</td>
</tr>
<tr>
<td><strong>Site</strong></td>
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<tr>
<td>Parotid Gland</td>
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</tr>
<tr>
<td>Submandibular salivary Gland</td>
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<td>6.3</td>
</tr>
<tr>
<td>Minor salivary gland on palate</td>
<td>6</td>
<td>18.8</td>
</tr>
<tr>
<td>Minor salivary gland on labial mucosa</td>
<td>2</td>
<td>6.2</td>
</tr>
<tr>
<td>Minor salivary gland on Buccal mucosa</td>
<td>8</td>
<td>25.0</td>
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<tr>
<td>Total</td>
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</tr>
<tr>
<td>Excisional</td>
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<td>Resection □</td>
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<tr>
<td>Total</td>
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<tr>
<td><strong>Size</strong></td>
<td></td>
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</tr>
<tr>
<td>less than 1cm maximum diameter</td>
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<td>6.3</td>
</tr>
<tr>
<td>1cm to 2cm maximum diameter</td>
<td>4</td>
<td>12.4</td>
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<tr>
<td>2-5cm</td>
<td>18</td>
<td>56.3</td>
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<tr>
<td>more than 5 cm in maximum diameter</td>
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<td>Total</td>
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<td>100.0</td>
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<tr>
<td><strong>Mass:</strong></td>
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<td>Solid</td>
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<tr>
<td><strong>Grade : Low Grade</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate</td>
<td>14</td>
<td>43.8</td>
</tr>
<tr>
<td>High Grade</td>
<td>10</td>
<td>31.2</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Ki-67 Expression</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>++ moderate positive [staining in 20-50% of neoplastic cells]</td>
<td>2</td>
<td>6.3</td>
</tr>
<tr>
<td>+++ strong positive [staining in more than 50% of neoplastic cells]</td>
<td>30</td>
<td>93.7</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Table 2: Association of Ki-67 with grades of Adenoid cystic Carcinoma

<table>
<thead>
<tr>
<th>Grade</th>
<th>Ki-67</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>++ moderate</td>
<td>+++ strong</td>
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<tr>
<td>Low Grade</td>
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<td>6</td>
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<tr>
<td>Intermediate</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>High Grade</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>30</td>
</tr>
</tbody>
</table>

P value 0.041

DISCUSSION

Salivary gland neoplasms are a heterogeneous and important group of tumors. Among these ADCC is an important and challenging due to its various histopathological subtypes. Different markers have always been extensively studied in ADCC hoping to find any diagnostic or screening help in identification of its histopathological subtype or to label the type or grade of carcinoma, but, mostly these studies have inconclusive results, possibly due to the small number of cases in studies.\(^6\)

Al-Azzawi\(^7\) assessed immune-histochemical expression of proliferative and apoptotic proteins (Ki-67 and p53) in ADCC. Total 15 cases were included in the study. Ki-67 was expressed 40% in adenoid cystic carcinoma. The expression of p53 was demonstrated in 73.3% of the total cases. It was concluded that both proteins (Ki-67 and p53) played role in tumorigenesis of ADCC. In our study ADCC has also the strongest positive correlation with Ki-67 expression scores. Bu et al. (2015)\(^8\) showed that there was a strong positive expression of Ki-67 in all growth patterns of ADCC. Our study revealed that only 2 of the 8 low grade cases showed a moderate positive score and the other 30 low, intermediate and high grade ADCC tumors show a strong positive expression for Ki-67. In the study by Fujii et al. (2017)\(^9\), a high Ki-67 index is seen in 24.2% of all ADCC tumors, however in present study a high Ki-67 index is seen in 93.7% of the ADCC tumors. Iyogun et al. (2017)\(^10\), also studied the
expression of Ki-67 in ADCC and found that there was a strong positive expression of marker in 75% cases. This was more than that found by Fujii et al, but less than the current study.

Kintawati et al14 in 2017 concluded that the expression of Ki-67 varies as the grade of ADCC changes. They found that as the grade of Ki-67 becomes higher, the stronger is the expression of Ki-67. This is supported by our current study, where intermediate and high grade ADCC tumors all show a strong positive expression of Ki-67. Moderate expression of Ki-67 is only seen in low grade ADCC.

Kungoane21 in 2015 did a research to evaluate expression of proliferation marker Ki-67 among others in SG tumors to correlate it with tumor type. His results showed Ki-67 expression was significantly higher amongst the five SG tumors. The expression of Ki-67 was significantly higher in ADCC than in MEC, ACC, PA and PLGA. This result is also similar to the result of our study where ADCC has also been found the strongest positive correlation with Ki-67 expression scores. In another study MCM2 expression was higher as compared to Ki-67 in ADCC, however in current study MCM2 was not determined.22 In another study expression of Ki-67 was strong positive in large size ADCC however in this study majority ADCC expressed strong positive.23 Expression of Ki-67 was determined on 44 ADCC and it was observed that its expression was more in solid variant as compared to other variants.24 In another study total 67 ADCC evaluated for Ki-67 expression, out of them 60 % expressed weak positive expression and 40% cases expressed strong positive expression which is in contrary to this study.25 In another study mean Ki-67 index was 30-35% in ADCC of salivary gland, however current study showed higher values.26

CONCLUSION

ADCC expressed strong positive expression of Ki-67 in this study. Ki-67 expression in ADCC showed that it has definitive role in its development. There is need to determine its expression in high grade and low grades ADCC on large sample size. In small biopsies where grading is difficult on routine H&E staining Ki-67 expression might be helpful in determining its aggressive variants.

CONFLICT OF INTEREST: The study has no conflict of interest to declare by any author.

REFERENCES


To Assess the Efficacy of Tranexamic Acid to Prevent Seroma Formation at Donor Site of Latissimus dorsi Flap

Bilal Ahmed Qureshi¹, Muhammad Nasarullah², Husnain Khan¹, Ali Adil¹, Tayyab Saleem¹ and Abdul Malik²

ABSTRACT

Objective: To assess the efficacy of tranexamic acid to prevent seroma formation at donor site of latissimus dorsi flap.

Study Design: Quasi experimental study

Place and Duration of Study: This study was conducted at the Department of Plastic Surgery, Jinnah Burn & Reconstructive Surgery Center/Allama Iqbal Medical College, Lahore from March 2015 to December 2018.

Materials and Methods: Fifty patients who required latissimus dorsi flap for reconstruction were enrolled. After approval from ethical committee, informed consent was taken. Diluted tranexamic acid (20ml of 25mg/ml) was infiltrated at the donor site before closure of the wound. Suction drains were placed. 500mg tranexamic acid was given intravenously, thrice daily for 4 days. Ultrasound was performed on second day and after one week of removal of drains to quantify the seroma.

Results: The suction drains showed <30 ml in 15 patients on first post-operative day and were removed on the same day. Two days after drain removal ultrasound confirmed 35 out of 50 patients showed no seroma on second day while 94% of the patients showed no collection of fluid one week after removal of drains.

Conclusion: Tranexamic acid is highly effective to control the seroma formation over the donor site of latissimus dorsi flap.

Key Words: Tranexamic acid, Latissimus dorsi flap, Seroma

INTRODUCTION

Pedicled and free latissimus dorsi flap is one of the key flaps for reconstruction in the armamentarium of plastic surgeons. It is used as a reconstructive tool for soft tissue coverage of trunk,¹⁻⁵ both upper and lower extremities,⁶⁻⁹ head and neck,¹⁰⁻¹⁵ and breast.¹⁶⁻¹⁹ It has advantages of reliable vascular pedicle, safety and ease of use, wide arc of rotation, massive muscle mass and size used to cover large areas, predictable cutaneous peddle and usage as a functional muscle.²⁰ Donor site seroma is one of the most common complications associated with latissimus dorsi flap.

The rate of seroma formation is as low as 5% and as high as 96%. Seroma is defined as collection of fluid at the donor site assessed clinically or detectable with ultrasound. Seromas result from disruption of vessels and lymphatics and mainly comprises of tissue fluid.²¹ Many treatment and preventive strategies have been reported to overcome the seroma formation at the donor site of latissimus dorsi flap. These include negative pressure wound therapy,²² PGA fabric,²³ quilting sutures²⁴ and fibrin glue.²⁴ In one of the latest studies conducted by Yan and colleagues, the incidence of seroma formation was 53.3%, however, they concluded in their study that 87.5% of patients developing seroma formation over the donor site of latissimus dorsi flap did not require any treatment and seroma would resolve over time. The mean duration of seroma resorption was 6.8±1.4 weeks. They recommended that no preventive measures and treatment regimens should be adopted to overcome seroma. The drawback in their study is that the patients developing seroma usually suffer from anxiety and discomfort for 4-9 weeks, moreover, there are chances of wound dehiscence.

The role of tranexamic acid as a pro-inflamatory agent has been proven. In a randomized double blind trial published in British journal of surgery in 1994,²⁵ it was found that administration of tranexamic acid 1gm three times a day resulted in significant reduction in...
mean post operative drainage volume compared with the patient given placebo treatment after breast cancer surgery. The frequency of seroma formation reduces in 37% after tranexamic acid administration as compared to 27% with placebo treatment having P value of 0.2. Considering the effectiveness of tranexamic acid as an agent to reduce seroma and unsolved problem of seroma formation at the donor site of latissimus dorsi flap, we decided to conduct a study to assess the effectiveness of tranexamic acid to control postoperative seroma formation at the donor site of latissimus dorsi flap.

MATERIALS AND METHODS

This quasi experimental study was conducted at Jinnah Burn and Reconstructive Surgery Centre, Lahore from 1st March 2015 to 31st December 2018. A total of 50 patients were included. All the patients in between 12-60 years of age undergoing surgery with latissimus dorsi flap were included in the study. The patients having hypertension, diabetes mellitus and bleeding diathesis were excluded. The informed consent was taken. All the patients underwent surgery with latissimus dorsi flap as a reconstructive tool. Flap dissection was done with scissors instead of electrocautery. Before closure of the wound, 5 ml of 100mg/ml tranexamic acid (TA) was mixed with 15 ml of normal saline. The prepared solution thus contained 20 ml of 25mg/ml of tranexamic acid. The solution was prepared to increase infiltration points and decrease complications with diluted TA. Suction drains were placed in all patients. Tranexamicacid (500mg) was given intravenously, thrice daily, for 4 days. Ultrasound was done on 2nd day after removal of drains having less than 20 ml in 24hours. Second ultrasound was done one week after 1st ultrasound to rule out any recurrent seroma. All the data was entered in the Performa. The data was analyzed by SPSS-20.

RESULTS

Most of the patients were in between age group of 35-55 years with genders is shown in Table 1. Out of 50 patients, in 35 patients there was no fluid collection in drain on the first post-operative day.

Table No.1: Demographic information of the patients

<table>
<thead>
<tr>
<th>Variable</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-35</td>
<td>5</td>
<td>10.0</td>
</tr>
<tr>
<td>36-55</td>
<td>13</td>
<td>26.0</td>
</tr>
<tr>
<td>56-75</td>
<td>32</td>
<td>64.0</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>30</td>
<td>60.0</td>
</tr>
<tr>
<td>Female</td>
<td>20</td>
<td>40.0</td>
</tr>
</tbody>
</table>

The drain was removed on the first post-operative day and ultrasound was performed 2 days after the drain removal to confirm the presence of seroma. In 15 patients out of 50, there was less than 30 ml of fluid. After one week of drain removal, 94 percent of the patients showed no collection of seroma on ultrasound (Tables 2).

Table No.2: Drain of fluid

<table>
<thead>
<tr>
<th>Drain</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>After 2 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nil</td>
<td>35</td>
<td>70.0</td>
</tr>
<tr>
<td>&lt;30 ml</td>
<td>15</td>
<td>30.0</td>
</tr>
<tr>
<td>After 2 weeks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nil</td>
<td>47</td>
<td>94.0</td>
</tr>
<tr>
<td>&lt;30 ml</td>
<td>3</td>
<td>6.0</td>
</tr>
</tbody>
</table>

DISCUSSION

In reconstructive surgery, one of the most reliable flaps to cover large defects is latissimus dorsi flap. Due to its large volume and surface area it can be used to reconstruct large defects of head and neck, extremities, breast and trunk. It can also be used as a functional muscle, pedicled or as a free flap. After lot of dissection at the back while raising the muscle, a relatively large raw area is created that may result in seroma formation at the donor site after surgery. The seroma rates may be as high as 96%. In order to define the probable causes of seroma formation, Schwabegger et al. conducted a study in 1997. They found two important reasons for seroma. These are “friction of the wound layers” and fat necrosis. In their opinion, fat necrosis can be reduced by avoidance of electrocautery during the flap elevation. Usage of scalpel instead of electrocautery reduced the incidence of seroma from 98% to 38 %. In order to reduce the sharing forces between the wound layers, a variety of methods have been advocated in the literature. Out of all these prescribed techniques, one of the successful treatment option is quilting sutures. It is known as Crippendale technique and was first described by Titley et al in 1997. The technique can reduce seroma from 0% to 45.6%. The drawback of quilting sutures is that it causes pain, limited shoulder movements and it is time consuming.

The second important technique to reduce dead space at the donor site after LAD flap is negative pressure wound therapy (NPWT). Angspatt and colleagues found that the rate of seroma formation after the drain removal decreases to 15 % after usage of NPWT as compared to 70% in the control group. However, it is costly, time consuming and there are chances of skin blebs formation. The major drawback of NPWT is to perform a secondary procedure for wound closure. Itani and colleagues worked on another root cause to reduce the seroma. According to them the major causative agent is lymphatic disruption and increased...
vascular permeability due to extended dissection. The leaked lymphatics and vascular fluid accumulates in the dead space and produces seroma. So, they used poly glycolic acid (PGA) fabric to prevent seroma. PGA is a biodegradable polymer that provokes inflammatory reaction resulting in fibrosis and subsequent tissue adherions. They found significant reduction of seroma after drain removal and the time taken to resolve seroma was also reduced (P<0.01).

Since seroma formation is caused by excessive leakage from vessels, so any intervention that effectively stops bleeding could reduce this seroma and hematoma formation, theoretically. Tranexamic acid (TA) is one such drug. It blocks lysine-binding sites on plasminogen, so preventing plasminogen to be converted into its activated form plasmin.\(^{27}\) As a result, fibrinolysis is prevented. Prevention of fibrinolysis promotes coagulation and hence reduces seroma and hematoma. TA could be used orally, intravenously, topically and can be infiltrated into the wound. Although, there is controversy regarding dosage of TA but suggested dosage are 1-2 gm. During major surgeries, TA intravenous administration have reduced blood transfusion need by 32-37% and measureable post-operative bleeding by 34%.\(^{28}\) High doses of TA can cause renal impairment and increase risk of seizures. TA can also be used topically. Topical application has reduced bleeding in cardiac and orthopedic surgery as proven by many studies.\(^{28}\) Ausen and colleagues\(^{28}\) also found that drain fluid production was reduced to 39% as compared to the control group after usage of TA. Virani and colleagues published their work in 2016 on role of TA infiltration at the wound site to reduce blood loss in patients with peritrochanteric fractures. They in filtered 2 gm of TA both in subfacial and intramuscular plane before the wound closure and compared it with the control group. They found the preoperative hemoglobin fell from 10.9gm% to 9.5gm% in TA group. In control group, the hemoglobin fell from 10.8gm% to 9.2gm%. There was no statistical significant difference with P=0.36 in both groups. Similarly they also measured postoperative blood loss, which was 190.3ml in TA group and 204.3 ml in control group. The P value was equal to 0.25, showing no statistical significance. The blood transfusion after the surgery in the control group was 17.1% and in TA group was 14.9%. From their results they concluded that TA infiltration doesn’t play a role to stop post-operative bleeding. However they recommended further studies.

Since, the use of TA at donor site of latissimus dorsi have never been prescribed in literature, as far our knowledge, so we used combination of local infiltrations and systemic TA to reduce postoperative seroma formation. We found that in all the patients, there was no significant seroma formation within 24 hours after surgery. The drain was taken out on first post-operative day. Ultrasound was performed two days after the drain removal. 15 out of 50 patients showed less than 30 ml of serous fluid at the donor site, while 35 patients showed no fluid at the donor site. The second ultrasound was performed after one week of drain removal to rule out any redundant seroma at the donor site. After one week, we found that in 94% of the patients there was no recurrent seroma and no collection of fluid. However, in 6% of the patients there was less than 30 ml of fluid which was managed conservatively and no intervention was required. Our study supports the usage of TA both locally and systemically to prevent seroma formation at donor site of latissimus dorsi flap.

**CONCLUSION**

Tranexamic acid is highly effective to control seroma at the donor site of latissimusdorsi flap. It is cost effective and easy to administer. It increases patient comfort and decreases anxiety of the patient. Moreover, all the complications of seroma formation could be decreased by local and systemic use of tranexamic acid.

**Author’s Contribution:**

Concept & Design of Study: Bilal Ahmed Qureshi

Drafting: Muhammad Nasarullah.

Data Analysis: Husnain Khan

Revisiting Critically: Ali Adil, Tayyab Saleem, Abdul Malik

Final Approval of version: Bilal Ahmed Qureshi

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

**REFERENCES**


Sofosbuvir and Ribavirin in Chronic Hepatitis C Genotype 3 Non Responder Patients

Rahmanuddin, Shah Zeb, Muhammad Abbas and Fazal Rabbi

ABSTRACT

Objective: To evaluate the efficacy of sofosbuvir plus ribavirin in chronic hepatitis C genotype 3 interferon non responder patients.

Study Design: Prospective / observational study

Place and Duration of Study: This study was conducted at the Medical B Unit; Mardan Medical Complex, Mardan from Jan 2016 to December 2017.

Materials and Methods: Forty five adult eligible both male and female Hepatitis C genotype 3 patients non-responder to interferon were included in the study. Sofosbuvir 400mg and ribavirin on weight based daily for 24 weeks were given to patients. Patients were tested for absence of detectable HCV RNA by PCR at the end of treatment and 24 weeks after the completion of treatment to look for sustained virological response at 24 weeks.

Results: A total of forty five chronic Hepatitis C genotype 3 interferon non responder patients received treatment with sofosbuvir 400mg and ribavirin on weight basis for 24 weeks. All patients completed treatment. Out of forty five patients 19 (42.2%) were female and 26 (57.8%) were male. The average age of the patients included in the study was 45.6 years. Patients were classified on the basis of APRI score into two categories. In 33 (73.3%) patients, the APRI score was <2 and in 12 (26.7%) patients the APRI score was >2. Liver biopsy not done because it is an invasive procedure. The end of treatment response was 80%(36) while 20%(9) of the patients were non responder. The sustained virological response rate was 58.33%(21) while 41.67%(15) patients were relapsed.

Conclusion: Combination of sofosbuvir and ribavirin for 24 weeks in chronic hepatitis C non responder patients was associated with low rate of sustained virological response at 24 weeks and high rate of relapse. This combination is not a good choice in those patients who have no response to peg interferon or conventional interferon.

Key Words: Chronic Hepatitis C, Sofosbuvir, Ribavirin

INTRODUCTION

Chronic hepatitis C infection is still great challenge in recent era because of its increasing high rate of prevalence and complication.1 about 3-4 million people are affecting each year. Prevalence is different in different region of the world; it is very high in African countries and Asia while very low in Australia and USA. Now HCV is considered to be leading cause of hepatic lethal complications and mortality.2 Hepatitis C prevalence is increasing in Pakistan estimated to be 6.8% among general adult population while active infection found to be 6% of population.3

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Genotype 3 is considered to be the most notorious one, because of its high rate of transformation to hepatoma and development of liver cirrhosis.4 The prevalence of HCV genotype 3 is very high in Australia and south Asia.5 Pakistan ranked to be second amongst the countries responsible for global viremia with most common genotype 3.6 In Pakistan HCV genotype 3 is very common as compared to other genotypes estimated to be about 69.1%.7 Patient with genotype 3 sometime suddenly present with lethal complication because of its rapid progression to fibrosis and rate of steatosis which relates with viral replication level.8 Treatment option for HCV genotype 3 has been changed and improved with different types of combination. Sustain viral response with sofosbuvir and ribavirin for 12 week duration is different between non naïve genotype 3 without cirrhosis and naïve genotype 3.9 The combination of sofosbuvir and ribavirin was considered to be the standard one previously but because of the adverse effects and limitation of ribavirin in certain conditions like child bearing age, haemoglobinopathies and cardiac patients limit the use of this combination.10 Sofosbuvir a nucleotide analog having activity against all genotypes,
while in combination with ribavirin is more effective against genotype 2 and 3 [11,12]. This combination is available in our hospital free of cost. We observe the response rate of chronic HCV genotype 3 patients who are non responders to interferon treatment.

MATERIALS AND METHODS
This study was conducted at Mardan medical complex Mardan from Jan 2016 to December 2017, involving patients attending medical and Gastroenterology OPD in Mardan Medical Complex teaching hospital Mardan. Forty five adult eligible both male and female Hepatitis C genotype 3 nonresponder patients were included in the study. Sofosbuvir 400mg and ribavirin on weight base daily for 24 weeks were given to patients. Patients were tested for absence of detectable HCV RNA by PCR at the end of treatment and 24 weeks after the completion of treatment to look for sustained virological response at 24 weeks.

RESULTS
A total of forty five chronic Hepatitis C genotype 3 interferon non responder patients received treatment with sofosbuvir 400mg and ribavirin on weight basis i.e.1000mg for <75kg body weight and 1200mg for >75kg body weight for 24 weeks.

DISCUSSION
Pakistan is facing an epidemic of Hepatitis C virus. About 8 million people in Pakistan have HCV infection [13]. Incidence of HCV is very high in Pakistan and it is increasing day by day due to lack of awareness [14]. We observe the response rate of sofosbuvir plus ribavirin in chronic hepatitis C genotype 3 nonresponder patients. The goal of treatment is to cure HCV infection in order to prevent complication and prevent further transmission of HCV. The endpoint of treatment was an (SVR24) sustained virological response at 24 weeks after the completion of treatment. SVR 24 is defined by undetectable HCV RNA in the serum at 24 weeks after the end of therapy [15]. An SVR corresponds to cure of HCV infection and it reduces the rate of decompensation and will also reduce but not abolish the rate of HCC [16]. Assessment of liver disease severity is necessary prior to treatment, it will identify patients with cirrhosis. We used noninvasive methods instead of liver biopsy to assess liver disease severity. We use aspartate aminotransferase to platelet ratio index (APRI). It is simple, cheap and noninvasive and the information it give is reliable. On the basis of APRI score patients were divided into two groups, one with APRI score less than <2 and the other group with APRI score >2. Recent introduction of direct acting antivirals increased the SVR rate to more than 90%. Sofosbuvir is recommended for the treatment of HCV is registered in Pakistan at a reasonable price and available in our hospital free of cost. We used Sofosbuvir 400mg daily and ribavirin on weight basis i.e. 1000mg a day for <75 kg body weight and 1200mg a day for >75kg body weight for 24 week. Sofosbuvir is a nucleotide analogue HCV NS5B polymerase inhibitor, while ribavirin is a synthetic guano sineanalogue; both of them have potent antiviral activity and are administered orally. The SVR varies in different populations and
pathological conditions\(^1\); it is also lower in cirrhotic patient as compared to non-cirrhotic\(^2\), in our study the end of treatment response was 80\%(36), while 20 \%(09) of the patient were nonresponder. The sustained virological response rate was 58.33\% (21) at 24 weeks and 41.67\%\(^3\) of patients were relapsed. It is almost comparable with other studies like in FISSION trial the SVR 12 rate in genotype 3 patients were only 56\%.\(^9\). Similarly in POSITRON trial the SVR after 24 weeks were 61\%\(^2\) and in FUSSION trial similar results were achieved showing poor SVR rates of 62\% in genotype 3 patients. Compared with above studies, the sustain virological response found to be lower with Sofosbuvir and ribavirin combinations.

**CONCLUSION**

Combination of sofosbuvir and ribavirin for 24 weeks in chronic hepatitis C non responder patients was associated with low rate of sustained virological response at 24 weeks and high rate of relapse. This combination is not a good choice in those patients who has no response to peg interferon or conventional interferon. We therefore not recommend this regimen in chronic hepatitis C genotype 3 nonresponder patients.

**Author’s Contribution:**

Concept & Design of Study: Rahmanuddin
Drafting: Shah Zeb
Data Analysis: Muhammad Abbas, Fazal Rabbi
Revisiting Critically: Rahmanuddin, Shah Zeb
Final Approval of version: Rahmanuddin

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

**REFERENCES**

Complications following Colonoscopy Procedure in Khyber Teaching Hospital Peshawar
Jamaluddin1, Nizamuddin2, Waheed Iqbal2, Akbar Shah1, Manzoor Khan1 and Shafaq Naz3

ABSTRACT

Objective: To document and evaluate the clinical complication in all patients following diagnostic colonoscopy.

Study Design: Single centered, descriptive / cross sectional study

Place and Duration of Study: This study was conducted at the Medicine department, Khyber teaching Hospital (KTH), Peshawar from April 2018 to September 2018.

Materials and Methods: A total 400 patient was included in this study with mean age of 46±1 years. Formally informed consent was taken and all the demographics information of the patients was recorded before the colonoscopy procedure. Colonoscopy was performed and all clinically observed adverse events like pain, perforation, bleeding, respiratory arrest, tachycardia and death were recorded. All the recorded data was analyzed by using SPSS version 20.0 while the graphs were constructed using graph pad prism version 6.0.

Results: Among 400 patients, 240 (60%) were male and 160 (40%) were female. Clinical complications were observed in 40 (10%) patients, while no clinical complications were noted in the rest 360 (90%) patients. Out of these 40 patients who have some sort of complications, 20 patients were male and 20 patients were female. There was no major complication like perforation, cardiac arrhythmias, major respiratory arrest or aspiration and immediate death in any patients. Minor complications like Pain, tachycardia (palpitation) and minor bleeding were observed in 20, 10 and 10 of the patients, respectively. The age and possibly gender difference does not contributed any significant contribution in the development of these complications.

Conclusion: All these results clearly indicate, “That lower Glendoscopy (Colonoscopy) is a very safe procedure in indicated patients, proper preparation of the patient and properly performed either directly or in the supervision of a senior endoscopist”.

Key Words: Colonoscopy, lower GI tract and major complications

INTRODUCTION

Lower GI endoscopy, also called colonoscopy is a common procedure performed in both indoor and outdoor settings. It is performed in a number of specialties like gastrohepatology, internal medicine and general surgical departments. It is usually requested for a number of different clinical diagnostic and some interventional/therapeutic procedures. So far “the most common diagnostic indications for colonoscopy are long standing constipation, diarrhea, weight loss, melena, bleeding per rectum, loss of appetite and follow-up cases for treated cases with carcinoma of the large gut”. The most common therapeutic indications are removal of polyps.

Colonoscopy is a safe procedure, if performed in a well-dedicated setup by skilled and experienced hands. Preparations of the patients before the procedure do matter a lot. Mostly, “complications are usually seen in patients where indications are weak and patient is not properly evaluated or prepared before the procedure”. The skills of the endoscopist are also considered as the most important factor in the development of different complications.

Commonly, some of the complications like generalized phobia, pain, tachycardia (palpitation) and small amount of bleeding can be seen without any threat to life of the patient. But more serious complications including cardio-respiratory arrest and cardiac arrhythmias, perforation of the gut, heavy bleeding and finally death are least common in all these procedure and are rarely seen. It has also been observed that these complications are common in those patients who have some other major concomitant disease like hypertension, COPD, ischaemic heart disease and bleeding disorders. It can also be seen in non-
cooperative and emotionally labile patients. Keeping in mind the safety profile of this procedure, it is considered as one of the safest invasive procedure. Many studies at international level have shown different result regarding the minor and major complications. But luckily, major complication like death is not yet reported. In spite of such an important invasive procedure, there is very little data at national level about this procedure and their complications. To fill this gape, this small effort is made in the form of this study. It was basically done to document all the possible complications relating to this procedure and properly present it in a professional manner.

MATERIALS AND METHODS

Single centered, descriptive and cross sectional study, which was conducted in the medicine department, MTI Khyber Teaching Hospital, Peshawar. The duration of study was 06 months, starting from April 2018 to September 2018. A total of 400 patients, undergoing colonoscopy were enrolled for this study by non-probability purposive sampling. The age group of 30 and above years, including 60% male and 40% female patients were included. In order to exclude all confounders, patients having known major bleeding disorders, cardiac arrhythmias and other respiratory diseases (COPD, Asthma) were excluded from the study.

Data Collection Procedure: First informed consent was taken. A total 400 patients who were subjected to colonoscopy procedure, both from outdoor department and indoor department of Khyber Teaching Hospital Peshawar were formally included in this study. With the approval of hospital ethical board, “applying exclusion and inclusion criteria, consecutive manner was used to collect the samples”. In every patient, all the possible complications, which were observed, were recorded separately in detail.

Data Analysis: In this study, all the documented information were formally presented in frequency and its value are shown as percentages. For analysis, SPSS version 20 was used. Applying Chi-Square test, the possible association between categorical values was assessed. Using the simple Odds ratio (OR), with 95% confidence interval was determined to find the possible risk for complication. The graphs were constructed using graph-pad prism version 6.0.

RESULTS

In all 400 patients, “there was 240 (60%) male and 160 (40%) female, having mean age of 46±1 years”. At the end of colonoscopy procedure, colonoscopy related all sort of complications, including both minor and major were observed in 40 (10%) patients. In all these 40 patients, no life threatening complication like gut perforation, major cardio-respiratory arrest and finally death was noted in any patients. Pain, tachycardia (palpitation)and small amount of bleeding were observed in 20, 10 and 10 patients respectively as shown in table number 01 and is graphically presented in figure 1.

Table No. 1: Observed Colonoscopy related complications

<table>
<thead>
<tr>
<th>Complications</th>
<th>Numbers (%)</th>
<th>Odds ratio (95CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>20 (5)</td>
<td>0.2</td>
</tr>
<tr>
<td>Bleeding</td>
<td>10 (2.5)</td>
<td>0.1</td>
</tr>
<tr>
<td>Tachycardia</td>
<td>10 (2.5)</td>
<td>0.1</td>
</tr>
<tr>
<td>No Complications</td>
<td>360 (90)</td>
<td>1.0</td>
</tr>
<tr>
<td>Total</td>
<td>400</td>
<td></td>
</tr>
</tbody>
</table>

Figure No.1: Minor complications observed during colonoscopy

Table No.2: Association of Colonoscopy related complications based of gender.

<table>
<thead>
<tr>
<th>Complications</th>
<th>X²</th>
<th>P- value</th>
<th>Odds ratio (95CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males Yes</td>
<td>20</td>
<td>1.41</td>
<td>0.6 (0.33-1.2)</td>
</tr>
<tr>
<td>Males No</td>
<td>220</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females Yes</td>
<td>20</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>Females No</td>
<td>140</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Yes</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total No</td>
<td>360</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure No.2: Complications observed between males/females

Similarly, the test for association was not successful because the data were skewed more towards negative results (complications were not present in 90% of patients). Chi-square was done to determine any possible statistical association between males and
females but results shows no significant difference between males and females (p-value=0.2) with Odds ratio and 95% CI= 0.6-0.33-1.2 respectively. The result is shown in table 2 and graphically represented in figure 2.

DISCUSSION

Colonoscopy is one of the most commonly advised procedures that are nowadays performed in many medical and surgical specialties. Traditionally, gastrohepatology department were performing it, but nowadays, a huge number of trained worthy physicians and skilled surgeon can also perform it, both for clinical diagnosis and some therapeutic intervention. The prevalence of major complications arises with colonoscopy is very low and it can be considered as one of the safest procedure for the diagnosis and possible intervention in many problems with minimal adverse events.

There are many complications, which can occur during Colonoscopy, but in our study we have observed some minor complications and there was no major clinical complications. The finding of our study was similar to the finding of another study. Our findings were similar to a published study, which was reported by Bashiru Ismaila et al from Nigeria in the form of prospective two years audit conducted in 2012. In a total of 68 cases who were subjected to lower GI Colonoscopy and Sigmoidoscopy, no major complications were observed even in a single case. Similarly, a study published in 2010 followed all the patients for a period of 30 days after colonoscopy revealed no major complication. A systemic review and meta-analysis published in 2016, also reported no major complications observed during colonoscopy, in fact the complications related to colonoscopy is declining. Our study is also indicated that only minor complications were found in our study which may be reduced further if the patient is counselled properly and the procedure is performed by experienced consultant.

CONCLUSION

These finding clearly show “that colonoscopy is completely a safe procedure and the frequency of both major and minor complications is extremely rare, if it is performed by an experienced fellow in a well prepared and properly investigated patient”. However, multicenter studies is needed in this regards, so that we can get clearer and complete picture.

Author’s Contribution:
Concept & Design of Study: Jamaluddin
Drafting: Akbar Shah
Data Analysis: Waheed Iqbal
Revisiting Critically: Manzoor khan, Nizamuddin

Final Approval of version: Shafaq Naz, Jamaluddin

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

REFERENCES

Assessment of the Body Mass Index of Medical Students of Bannu Medical College, Bannu-KPK Pakistan

Abdul Razaq¹, Shabir Hussain², Naseeb ur Rehman¹, Bakht Jehan³, Aden Razaq⁴ and Wasim Ahmad⁵

ABSTRACT

Objectives: To determine body mass index of the medical students of Bannu medical College & measure the rate of various categories of body mass index.

Study Design: Transverse study based on questionnaire.

Place and Duration of Study: The study was conducted at the Bannu Medical College Bannu from Jan 2018 to June 2018.

Materials and Methods: The weight of the body and height was calculated and the measurement of BMI carried out with the help of formula of weight divided by the square of height. The definition of fatness & overweight placed according to the international criteria of body mass index cutoffs defined by World Health Organization.

Results: The total frequency of the underweight students was about thirty percent out of which more than nine percent were in the group of strictly underweight with a BMI of less than 16.5. In obese group, the frequency was eight percent. The rate of the students lying in fat class 1, 2 & 3 was 2.7%, 0.6% and zero percent accordingly. The result showed that more females were underweight in contrast with the male students. In obese groups, there was an eminence of the males. A pure association was present between the concept of fatness in parents & fat students of the college.

Conclusion: This case study concluded that underweight persons particularly females should be thought a severe abnormality of health and this issues requires to be tackled.

Key Words: Adiponectin, Fatness, Hypertension, Adolescent, Menses, frequency, rate.

INTRODUCTION

Fat is an important ingredient of human body. Fat is performing many functions in the body of humans. It is an important source of energy as well as an insulator of heat & absorber of the shocks and it is able to produce many hormones as adiponectin, resisting etc. High or low amount of fat initiates complications. Fatness is closely relating to the amount of the fat ¹,². BMI is in use for the identification of the fatness, different methods used are computed tomography, circumference of waist, MRI & tables of life insurance ³,⁷.

Body mass index defines relative weight for a specific height and it is not for particular gender. In different indices utilized to evaluate the fatness, body mass index has displayed great correlation with the regular hypertension in all sexes ³. Fatness is the cause of many horrible diseases as heart diseases, diabetes mellitus, hypertension, complications in menses & sometimes it leads to the cancers of breast ⁸-¹⁰. Low weight in is very common in adolescent people of our country but opposite opinion is common for the adult population of Pakistan⁵,⁶. To confirm the outcome of this research work, there is a requirement to conclude BMI with a large amount of samples in this age group of populations¹¹. This research work will help in the creation of basic data for the group of adolescent of our country.

MATERIALS AND METHODS

This was a transverse research work based upon questionnaire. The study was carried out in Bannu medical college, Bannu from Jan 2018 to June 2018. All the students of medical college were the participants of this study. The filling of questionnaire carried out by each student and their mass and height was noted. Motivation of the students carried out to participate in
the research work. Ethical committee gave the approval for the conduction of the research work. Body weight and height were measured to the closest 0.1 kilogram and half centimeter with the utilization of standard calibration scale and measuring tape.

To reduce the error in calculations, the preciseness of the scales calculated. Statistical analysis of the collected information carried out with the help of SPSS software version 16. Student’s T-test was in use for the analysis of the variables. Chi square method was in use for the measurement of disparities. ANOVA was in use for the evaluation of the disparity in the occurrence rates of the fatness in students and their parents. The calculation of body mass index was conducted by dividing the weight of the person in kilograms with the square of the height of person.

Some WHO body mass index points of cutoffs are:
- less than sixteen kg/m² (highly underweight)
- 16 to 16.99 kg/m² (normal underweight)
- 17 to 18.49 kg/m² (mild underweight)
- 18.50 to 24.99 kg/m² (ordinary range)
- twenty-five kg/m² (heavy)
- 25 to 29.99 kg/m² (pre fatness),
- thirty kg/m² (fat)
- 30 to 34.99 kg/m² (fat class 1),
- 35 to 39.99 kg/m² (fat class 2),
- greater than forty kg/m² (fat class 3)

RESULTS

Seven hundred ninety-two students completely filled their questionnaire were the part of this research work. Twenty-eight percent were the male participants & seventy-two percent were female participants. The average student’s height was 164.3 ±9.9 centimeters. The average height of male student was 174.7 ±7.8 centimeters. The disparity was significant statistically. The average student’s weight was 56.2 ±11.9 kilogram. The weight of female students was less than the male students. The average body mass index of students was 20.8 ±3.8. The BMI of the males was greater than the female students. About sixty percent students were in the normal category of body mass index. About thirty percent students were underweight in which about ten percent were severely underweight. Eight percent students were overweight. The rates of the students making fat class 1, 2 and 3 were 2.7%, 0.6% and zero percent accordingly. Fifty-seven females were in the group of severely underweight while nineteen males were present in this class. Obesity was most common in males than females according to the results. The disparity among the values analyzed with the help of Chi square test as mentioned in Table-1.

Sixty-nine students mentioned fatness in their fathers while one hundred and seventy-four students stated their mother as fat & sixty-nine percent students mentioned fatness in both parents as described in Table-2. Hypertension was present in one hundred and ninety-eight patients. Hypertension in the case of both parents was available in thirty-one students. The results of analysis of the values of BMI of students with their concept of fatness in their parents showed that students of obese parents have high values of BMIs as mentioned in Table-3.

<table>
<thead>
<tr>
<th>Gender</th>
<th>BMI Categories</th>
<th>Sev. Underweight</th>
<th>Underweight</th>
<th>Normal</th>
<th>Over Weight</th>
<th>Obese Class I</th>
<th>Obese Class II</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Count</td>
<td>19.0</td>
<td>31.0</td>
<td>132.0</td>
<td>28.0</td>
<td>12.0</td>
<td>0.0</td>
<td>222.0</td>
</tr>
<tr>
<td></td>
<td>% within Gender</td>
<td>8.600%</td>
<td>14.000%</td>
<td>59.500%</td>
<td>12.600%</td>
<td>5.400%</td>
<td>0.000%</td>
<td>100.000%</td>
</tr>
<tr>
<td>Female</td>
<td>Count</td>
<td>57.0</td>
<td>130.0</td>
<td>334.0</td>
<td>35.0</td>
<td>9.0</td>
<td>5.0</td>
<td>570.0</td>
</tr>
<tr>
<td></td>
<td>% within Gender</td>
<td>10.000%</td>
<td>22.800%</td>
<td>58.600%</td>
<td>6.100%</td>
<td>1.600%</td>
<td>0.900%</td>
<td>100.000%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>76.0</td>
<td>161.0</td>
<td>466.0</td>
<td>63.0</td>
<td>21.0</td>
<td>5.0</td>
<td>792.0</td>
</tr>
<tr>
<td></td>
<td>% within Gender</td>
<td>9.600%</td>
<td>20.300%</td>
<td>58.800%</td>
<td>8.000%</td>
<td>2.700%</td>
<td>0.600%</td>
<td>100.000%</td>
</tr>
<tr>
<td></td>
<td>P value</td>
<td>&lt;0.010</td>
<td>&lt;0.010</td>
<td>&lt;0.010</td>
<td>&lt;0.010</td>
<td>&lt;0.010</td>
<td>&lt;0.010</td>
<td>&lt;0.010</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Corpulence</th>
<th>HTN</th>
<th>Diabetes Mellitus</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>%</td>
<td>No</td>
</tr>
<tr>
<td>Father</td>
<td>69.0</td>
<td>8.70</td>
</tr>
<tr>
<td>Mother</td>
<td>174.0</td>
<td>22.00</td>
</tr>
</tbody>
</table>
DISCUSSION

This research work displayed an important quantity of students in the category of underweight with thirty percent students fulfilling this category while fatness was just in three percent students and it was not a serious issue. A previous research work stated the same amount of underweight of twenty-nine percent but they got the cutoff values of BMI as less than nineteen kg/m² & they did not conclude the analysis of the subgroup category. They also concluded fatness at more than twelve percent with BMI cutoff of greater than twenty-six kg/m². This research work concluded that most of the females were falling in the category of underweight; this was just because of the inclination toward slimness not because of malnutrition.

The fatness was mostly occurring in male participants of this study & same results were concluded in adolescents of Greek. The preciseness in the reporting of categories of body mass index is suitable in this research work. In this research work, we got the views of the medical students about the availability of fatness in their parents & we observed a pure association of fatness in their parents with also its availability in the students included in research. The occurrence of underweight in young age is also reported by many other research works. This is a serious problem of health which leads to the mental and physical abnormalities as well.

The experts of WHO states that the BMI standard is not correct for the populations of Asia because these people have different relationship with risks of health, body fat percentages & body mass index as compared to the populations of Europe. There is no approval of new BMI standard for the populations of Asia. It is suggested that recent cutoff of body mass index should be maintained on international level. The prevalence of the high amount of females in underweight category is very threatening. Case works have displayed that there is an association among variables of somatic & psychological in these individuals and a decreased amount of serum leptin is present in them. There is a clear cut disparity in the concepts for underweight conditions in the populations facing this issue.

CONCLUSION

This research work put light on the reality that fatness is not a frequent issue among the students of medical field but the main abnormality in them is low weight especially in females. In recent days about eighty percent medical students are females; this is an important outcome which needs to be tackled with good awareness & qualification.

Author’s Contribution:
Concept & Design of Study: Abdul Razaq
Drafting: Shabir Hussain, Naseeb ur Rehman
Data Analysis: Bakht Jehan, Aden Razaq, Wasim Ahmad
Revisiting Critically: Abdul Razaq, Shabir Hussain
Final Approval of version: Abdul Razaq

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

REFERENCES
1. Aziz J, Siddiqui NA, Siddiqui IA, Omair A. Relation of body mass index with lipid profile and blood pressure in young healthy students at


Pattern of Pediatric Tuberculosis: A Study at Tertiary Care Hospital
Muhammad Aqeel Khan, Mukhtar Ahmad, Arshia Munir and Muhammad Bilal Khattak

ABSTRACT

Objective: To determine the patterns of pediatric tuberculosis at tertiary level hospital.

Study Design: Descriptive / cross sectional study.

Place and Duration of Study: This study was conducted at the Department of Pediatric MTI Hayatabad Medical Complex/Khyber Girls Medical College, Peshawar from January 2018 to September 2018.

Materials and Methods: The study duration was 8 months and a total of 57 patients were included in the study, which fulfilled the inclusion criteria. PPA scoring was used for the diagnosis. 95% confidence level and 7% margin of error using WHO software for sample size. The SPSS latest version was used to analyze the data. For categorical data frequencies and % ages were calculated and the data was presented in tabulated form.

Results: In this study 57 patients with diagnosis of pulmonary or extrapulmonary tuberculosis were included in the study. Male patients were 31 while female were 26 with male to female ration of 1.2:1. New Pulmonary tuberculosis cases were 41, 13 were new extrapulmonary cases while 2 were pulmonary relapse cases. Smear was made in 44 cases and only 13 were smear positive cases.

Conclusion: Pediatric tuberculosis is one of the growing and leading concerns of our region. Pulmonary tuberculosis is still the most common type of pediatric tuberculosis.

Key Words: Pulmonary tuberculosis, Extrapulmonary tuberculosis

INTRODUCTION

Tuberculosis is one of the alarming conditions amongst the infectious diseases. Tuberculosis (TB) is a leading cause of death worldwide. Pakistan ranks sixth globally among the 22 high-TB burden countries and contributes an estimated 43 percent of the disease towards the Eastern Mediterranean region. Annually around 430,000 people including 15,000 children contract tuberculosis in Pakistan and every year no less than 70,000 deaths can be attributed to the disease in the country. Pakistan is also estimated to have the fourth highest prevalence of multi drug resistant tuberculosis (MDR-TB) globally. Over 95 percent of tuberculosis deaths occur in low and middle-income countries\(^1\). Tuberculosis is definitely considered to be a disease of low socioeconomic r, malnourished region disease. The poor population is mostly living in overcrowded regions so easily in contact and best tool for spreading of the infection\(^2\).

Another important reason for this long lasting infection is delay in the diagnosis and low awareness in the population of these regions\(^3\). The delay in diagnosis along with unsupervised, inappropriate and inadequate drug regimens, poor follow up and lack of social support programmes for high-risk population, are some of the reasons for not reaching the target rates and emergence of a drug resistant form of tuberculosis. Almost one third of the world population is infected with this disease\(^4,5\). Pediatric tuberculosis has become one of the most difficult challenges what the developing world is facing today. Tuberculosis not only manifests as pulmonary one but also as extrapulmonary. The most common extrapulmonary tuberculosis includes lymphadenitis (cervical the most common), tuberculous enteritis, meningitis, Pott’s diseases and tuberculous ascites etc. The case load in TB varies from country to country. It is as low as 5% in low burden countries to as high as 20-40% in high burden countries. One of the most common reasons for this dilemma is difficulty in confirmation of diagnosis of tuberculosis\(^6\). Many diagnostic modalities are use for the diagnosis of tuberculosis, but still the disease diagnosis has not been confirmed with easily. Multiple investigations including routine and specific tests are carried out to diagnose pulmonary and extrapulmonary tuberculosis. These include complete blood count (CBC), X-Ray chest, Tuberculin skin test (TST), aspiration fluid examination and gram staining, Imaging like Computed tomography scan (CT Brain) and histopathology and Gene X-pert\(^6,7\). It is very difficult to obtain good quality respiratory specimen. Most of the pediatric tuberculosis cases
remain undiagnosed and even unreported in many cases. One of the most important diagnostic modality in tuberculosis is smear microscopy. Unluckily the sensitivity of sputum smears microscopy in less than 15%. Culture of mycobacterium tuberculosis is higher in biological samples as compared to smear but overall sensitivity very rarely exceeds 40%. The diagnostic value of Gene X-pert MTB/RIF is comparable to culture in adult patients. Though the modality is expensive but it is quick as compared to culture. But again unluckily Gene X-pert is having low diagnostic value in pediatric age group. Therefore, pediatric tuberculosis diagnosis is a big challenge with current available laboratory investigations.

Pediatric tuberculosis is big dilemma of current time and of the developing countries. It is becoming one of the leading causes of mortality and morbidity in this age group. Therefore it is not only affecting the generation of a region adversely but also affecting the economy of these regions negatively. The current study was conducted in this context to know about the pattern of the disease in our setup.

MATERIALS AND METHODS

This descriptive study was conducted at the department of pediatrics Khyber Girls Medical College/ Hayatabad Medical Complex Peshawar. The study duration was nine months from January to September 2018. Patients of age group up to fifteen years and either sex were included in the study. Patients of age above fifteen years and with underlying immune deficiencies and other congenital disorder were excluded from the study. Investigations like X-Ray chest, CBC and Tuberculin skin test were done in all cases. PPA scoring chart was used to diagnose as a case of tuberculosis. Other investigations like CT Brain, lymph node biopsy were carried out where needed. Patients were further divided into new pulmonary, new extrapulmonary and relapse cases.

The study was started after permission being taken from ethical committee Khyber Girls Medical College and Hayatabad Medical Complex Peshawar. Patients who fulfilled the inclusion were selected and biodata and relevant information were documented on a proforma. A detailed history was taken followed by comprehensive examination in all cases. In all patients assessment data was entered on PPA scoring chart. The patients with score ≥ 7 were diagnosed as case of tuberculosis. Patients with pulmonary presentation were labeled as pulmonary tuberculosis and those with extrapulmonary presentation were labeled as extrapulmonary ones.

All data was filed and assessed in SPSS. Frequencies and percentages were calculated for categorical variables like gender and the results were presented in tabulated form.

RESULTS

This descriptive cross sectional study was conducted at the department of Child Health Hayatabad Medical Complex, Peshawar. The total number of patients included in the study was 57. We found that the gender distribution i.e. male to female ratio was 1.2:1 as shown in table 1.

Table No.1: Gender wise distribution of pediatric tuberculosis patients n=57

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>male</td>
<td>31</td>
<td>54.4</td>
<td>54.4</td>
<td>54.4</td>
</tr>
<tr>
<td>female</td>
<td>26</td>
<td>45.6</td>
<td>45.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table No. 2: Age wise distribution of Pediatric Tuberculosis n=57

<table>
<thead>
<tr>
<th>Age Group in Years</th>
<th>No. of Patients</th>
<th>Percent</th>
<th>Valid %age</th>
<th>Cumulative %age</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 1 years</td>
<td>7</td>
<td>31.58</td>
<td>31.58</td>
<td>31.58</td>
</tr>
<tr>
<td>2-5 years</td>
<td>12</td>
<td>35.09</td>
<td>35.09</td>
<td>66.67</td>
</tr>
<tr>
<td>6-10 years</td>
<td>20</td>
<td>21.05</td>
<td>21.05</td>
<td>87.72</td>
</tr>
<tr>
<td>11-15 years</td>
<td>18</td>
<td>12.28</td>
<td>12.28</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Table No.3: Pattern of Pediatric Tuberculosis n=57

<table>
<thead>
<tr>
<th>Type of Tuberculosis</th>
<th>No. of Patients</th>
<th>Percent</th>
<th>Valid %age</th>
<th>Cumulative %age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulmonary</td>
<td>44</td>
<td>77.19</td>
<td>77.19</td>
<td>77.19</td>
</tr>
<tr>
<td>Pulmonary relapse</td>
<td>2</td>
<td>19.30</td>
<td>19.30</td>
<td>96.49</td>
</tr>
<tr>
<td>Extrapulmonary</td>
<td>11</td>
<td>3.51</td>
<td>3.51</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Table No.4: Pattern of Extrapulmonary Tuberculosis

<table>
<thead>
<tr>
<th>Type of Extrapulmonary Tuberculosis</th>
<th>No. of Patients</th>
<th>Percent</th>
<th>Valid %age</th>
<th>Cumulative %age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meningitis</td>
<td>5</td>
<td>45.4</td>
<td>45.4</td>
<td>45.4</td>
</tr>
<tr>
<td>Enteritis</td>
<td>4</td>
<td>36.4</td>
<td>36.2</td>
<td>81.8</td>
</tr>
<tr>
<td>Lymphadenitis</td>
<td>2</td>
<td>18.2</td>
<td>18.2</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

In our study we found and classified various types of tuberculosis on the basis of new and relapse and pulmonary or extra-pulmonary type and documented in tabulated form as given in table 2. Pattern of pediatric tuberculosis was assessed in SPSS. Frequencies and percentages were calculated for categorical variables like gender and the results were presented in tabulated form.
pulmonary and extrapulmonary tuberculosis has been
given in table number 3 and 4 respectively.
In our study we found and classified various types of
tuberculosis on the basis of new and relapse and
pulmonary or extra-pulmonary type and documented in
tabulated form as given in table 5.
We could not identify mycobacterium tuberculosis in
all cases but applied PPA scoring chart for classifying
as pulmonary and extra-pulmonary cases. The details
are given in table 5.

Table No. 5: Results of the patients with pediatric
tuberculosis on evidence and sputum basis n=57

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence present</td>
<td>13</td>
<td>22.8</td>
<td>22.8</td>
<td>22.8</td>
</tr>
<tr>
<td>Sputum</td>
<td>44</td>
<td>77.2</td>
<td>77.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Smear was sent for examination and to confirm the
presence of mycobacterium tuberculosis. The results
are given in table 6.

Table No.6: Patients result on the basis smear
positivity and negativity and no smear n=57

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smear negative</td>
<td>33</td>
<td>57.9</td>
<td>57.9</td>
<td>57.9</td>
</tr>
<tr>
<td>Smear positive</td>
<td>11</td>
<td>19.3</td>
<td>19.3</td>
<td>77.2</td>
</tr>
<tr>
<td>No</td>
<td>13</td>
<td>22.8</td>
<td>22.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

DISCUSSION

Pediatric tuberculosis is one of the important pediatric
infectious diseases which is responsible for pediatric
mortality and morbidity. In our study we studied 57
patients with age ranging from 1 year to 15 years. In
our study we found that the mean age of the patients
included in the study was 8.443 years. These results
were almost the same as given by two other
international studies conducted by Nenavath K et al and
Cano APG et al 10,11. The results were different from
a study conducted at Bangladesh by Karim T et al where
the mean age of presentation of pediatric patient with
tuberculosis was less than five years 12.
The most common type was pulmonary tuberculosis in
our study population. The same was the case in other
international studies. Brent AJ et al has also
documented the same results where he found pulmonary tuberculosis as the most common cause of
pediatric age tuberculosis. In our study pulmonary tuberculosis was the most frequently occurring and in
all age group but the younger patients that less than 5
years were most commonly suffering from pulmonary
tuberculosis. The same was found by Brent et al in his
study that is most commonly affected population by
pulmonary tuberculosis was age less than 5 years 13.
In our study population tuberculous meningitis was the
most common condition among the extrapulmonary
type followed by tuberculous enteritis and tuberculous
lymphadenitis. The results in this context are given
different by different studies. Regarding the most
frequently occurring extrapulmonary tuberculosis
almost the same results were given by Santos RS et al
and Gosai DK et al 14,15. These findings were not
simulating with another study conducted by Hatwal D
et al which has documented as tuberculous
lymphadenitis is most frequently occurring
extrapulmonary tuberculosis 16. The difference between
our findings and that of Hatwal D et al may be due to
our admitted and hospitalized patients.
The total number of smear positive TB patients in our
study was 13 which constituted almost 23 percent of the
study population. The number of smear positive cases
have been documented various by different
international studies. The smear positive cases have
ranged from as low as 23 % to 35 %. A study has
documented 28 percent of smear positive cases which
is not much different from our study. The pediatric
tuberculosis is quite different condition from adult TB
and not easily detected by smear.
BCG vaccination was found to be done correctly with
positive BCG scar in approximately 52.6 % which is
less than other studies documented by other
international study by Gupta N et al 18. Gupta N et al
found a total of 86 and 73 % vaccination positivity in
pulmonary and extrapulmonary cases respectively in
study population being immunized against tuberculosis.
The immunization status have varies a lot and has
ranged from 57 to 93 percent in different studies
10,11, 19 (Nenavath K et Cano APG et al, Jain et al). In our
study contact with tuberculous patient was almost
38.5% which was different from the findings of
international studies given by Goyal A et al 20. The
study findings of Goyal A et al showed contact with
patient with active tuberculosis in fifty percent of cases.

CONCLUSION

Pediatric tuberculosis is one of the growing and leading
concerns of our region. Pulmonary tuberculosis is still
the most common type of pediatric tuberculosis.

Author’s Contribution:
Concept & Design of Study: Muhammad Aqeel Khan
Drafting: Mukhtar Ahmad
Data Analysis: Arshia Munir, Muhammad Bilal Khattak
Revisiting Critically: Muhammad Aqeel Khan, Mukhtar Ahmad
Final Approval of version: Muhammad Aqeel Khan

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

REFERENCES


Rigid Gas Permeable Contact Lenses in Keratoconus Patients
Shafqat Ali Shah1, Hidayatullah Mahsud2, Mohammad Bilal1 and Nabila Hanifa3

ABSTRACT

Objective: To assess the role of Rigid Gas Permeable (RGP) contact lenses in keratoconus.
Study Design: Hospital based descriptive study
Place and Duration of Study: This study was conducted at the Outpatient Department, Hayatabad Medical Complex, Peshawar from November, 2012 to February, 2013.
Materials and Methods: Patients were examined for Vernal Keratoconjunctivitis having Keratoconus at the outpatient department, Hayatabad Medical Complex, Peshawar. 16 patients were found to have keratoconus.
Inclusion Criteria: Patients in the age group 12-30 years with VKC having keratoconus.
Exclusion Criteria: Patients outside this age range and those with keratoconus without VKC were excluded.
Results: Thirteen patients were using glasses while three did not use glasses. The visual acuity of patients’ eyes was there. Improvement with glasses is shown in Table 4. Table 5 presents Visual acuity improvement with soft contact lenses and improvement with RGP lenses is shown in Table 6.
Conclusion: RGP contact lenses improve vision better than glasses and soft contact lenses.
Key Words: RGP contact lens, soft contact lenses, glasses, keratoconus, Vernal Kerato Conjunctivitis (VKC).

INTRODUCTION

Keratoconus is a disorder of the cornea in which there is central or paracentral corneal thinning associated with protrusion resulting in irregular astigmatism. There is asymmetrical ectasia of the cornea but the normal eye of keratoconus is affected within 16 years in 50% cases.1 Its prevalence ranges from 20 in 100,000 to 1 in 500,000. It is more frequently (4.4 to 7.5 times) found in Asians as compared to whites. In Iran, its prevalence is between 0.75% to 3.5%.5 The prevalence varies in relation to environmental, genetic and ethnic factors.6 Different classification systems exist for Keratoconus. Amsler Krumiech system divides it on the basis of myopia and astigmatism, corneal thickness or scarring and central k reading.7 Shabayek Alio system takes into account the higher order aberrations.8

Keratoconus severity Score (KSS) system classifies this disease on on average corneal power and root mean square (RMS).9 Initially one eye is affected in the late teens or twenties. It is associated with systemic diseases and ocular diseases. Vernal keratoconjunctivitis (VKC) is common disease and is has association with Keratoconus. One reason for this disease in VKC is supposed to be chronic eye rubbing. Keratoconus patients present with unilateral decrease vision due to irregular astigmatism.1 It can be diagnosed clinically in late stages but early cases can be diagnosed with corneal topography.10 The progression of the disease can be halted by corneal cross linkage (CXL) which can result in stabilization or improvement in visual acuity.11 In mild Keratoconus, Glasses and soft contact lenses can help these patients but in severe cases, Rigid Gas Permeable (RGP) contact lenses are successful in many patients. Intrastromal ring segments are also useful in mild to moderate Keratoconus. Lamellar or penetrating Keratoplasty is carried out when satisfactory vision is not achievable with RGP contact lenses or cannot be tolerated by the patients.10 This study was carried out to see how much RGP contact lenses are effective in our Keratoconus patients as compared to glasses and soft contact lenses.

MATERIALS AND METHODS

This cross sectional hospital based descriptive study was carried out at the outpatient department of Hayatabad Medical Complex, Peshawar from November, 2012 to February, 2013. All the patients
were selected through non-convenient sampling technique. Patients between the age of 12-30 years were included in this study. An informed consent was taken from all the patients. Those patients who were outside this age limit and unwilling to give consent were excluded from this study. Corneal topography was first done for confirmation of keratoconus. Then refraction was carried out to see the best corrected visual acuity. After this soft and hard contact lenses were fitted to see the visual acuity improvement and all this was recorded in a pre-designated proforma.

RESULTS

Table 1. Thirteen patients were using glasses while three did not use glasses shown in Table 2.
Table 3 shows the presenting Visual acuity of patients’ eyes. Improvement with glasses is shown in Table 4. Table 5 presents visual acuity improvement with soft contact lenses and improvement with RGP lenses is shown in Table 6.

Table No.1: Number of patients n=16

<table>
<thead>
<tr>
<th>Total</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>10</td>
</tr>
<tr>
<td>Female</td>
<td>6</td>
</tr>
</tbody>
</table>

Table No.2: Patients who used glasses n=16

<table>
<thead>
<tr>
<th>Total No. of patients</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used glasses</td>
<td>13</td>
</tr>
<tr>
<td>Did not use glasses</td>
<td>3</td>
</tr>
</tbody>
</table>

Table No.3: Presenting Visual acuity of patients’ eyes n=32

<table>
<thead>
<tr>
<th>Presenting Visual acuity</th>
<th>No. of eyes</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/6</td>
<td>6</td>
<td>3.12%</td>
</tr>
<tr>
<td>6/9</td>
<td>5</td>
<td>3.12%</td>
</tr>
<tr>
<td>6/12</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>6/18</td>
<td>7</td>
<td>3.12%</td>
</tr>
<tr>
<td>6/24</td>
<td>3</td>
<td>6.25%</td>
</tr>
<tr>
<td>6/36</td>
<td>4</td>
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<tr>
<td>6/60</td>
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<td>34.37%</td>
</tr>
<tr>
<td>FC</td>
<td>3</td>
<td>9.37%</td>
</tr>
</tbody>
</table>

Table No.4: Visual acuity improvement with glasses n=32

<table>
<thead>
<tr>
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<th>No. of eyes</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/6</td>
<td>2</td>
<td>6.25%</td>
</tr>
<tr>
<td>6/9</td>
<td>2</td>
<td>6.25%</td>
</tr>
<tr>
<td>6/12</td>
<td>1</td>
<td>3.12%</td>
</tr>
<tr>
<td>6/18</td>
<td>3</td>
<td>9.37%</td>
</tr>
<tr>
<td>6/24</td>
<td>3</td>
<td>9.37%</td>
</tr>
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<td>6</td>
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</tr>
<tr>
<td>FC</td>
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<td>15.60%</td>
</tr>
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</table>

Table No.5: Visual acuity improvement with soft contact lenses n=32

<table>
<thead>
<tr>
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<th>No. of eyes</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/6</td>
<td>6</td>
<td>3.12%</td>
</tr>
<tr>
<td>6/9</td>
<td>5</td>
<td>3.12%</td>
</tr>
<tr>
<td>6/12</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>6/18</td>
<td>7</td>
<td>3.12%</td>
</tr>
<tr>
<td>6/24</td>
<td>3</td>
<td>6.25%</td>
</tr>
<tr>
<td>6/36</td>
<td>4</td>
<td>9.37%</td>
</tr>
<tr>
<td>6/60</td>
<td>0</td>
<td>34.37%</td>
</tr>
<tr>
<td>FC</td>
<td>3</td>
<td>9.37%</td>
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</tbody>
</table>

Table No.6: Visual acuity improvement with RGP lenses n=32

<table>
<thead>
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<th>Presenting Visual acuity</th>
<th>No. of eyes</th>
<th>%age</th>
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</thead>
<tbody>
<tr>
<td>6/6</td>
<td>13</td>
<td>40.62%</td>
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<tr>
<td>6/9</td>
<td>12</td>
<td>37.150%</td>
</tr>
<tr>
<td>6/12</td>
<td>2</td>
<td>6.25%</td>
</tr>
<tr>
<td>6/18</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6/24</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6/36</td>
<td>1</td>
<td>3.12%</td>
</tr>
<tr>
<td>6/60</td>
<td>1</td>
<td>3.12%</td>
</tr>
<tr>
<td>FC</td>
<td>3</td>
<td>9.37%</td>
</tr>
</tbody>
</table>

DISCUSSION

Yildiz et al had 27 keratoconus patients. The number of my patient was less 16 as compared to Yildiz et al but the reason may be that their hospital is at Istanbul and the health facility and educational status of the Turks is much better than us. People in our area lack knowledge, are poor to gain access to health facility. But they were not due to VKC and almost all the patients were either RGP lenses wearer or SHCL wearer. They had not taken into account best corrected visual acuity with glasses. Mrazovac D had 137 patients of keratoconus. This number is very much high as compared to ours and Yildiz et al. Their study duration is very long (5 years) as compared to ours (3 months). There was male majority in ours as well as other studies (72.26%). Mean age in my study is 21.5 +/- 8.5 years as compared to 29.6 +/- 8 and 27.7 +/- 9.9 years. In our study, the age range was from 12-30 years as we searched for keratoconus in VKC patients. There was a statistically significant difference (p<0.001) between the BCVA obtained with contact lenses (0.82 +/- 0.21 Snellen chart) rather than spectacles (0.37 +/- 0.27 Snellen chart). The best corrected visual acuity was achieved with rigid gas permeable (RGP) lenses in majority of keratoconus eyes (51.85%), with semi-gas permeable (SGP) lenses in 43.39%, in 4.23% with polymethyl methacrylate (PMMA) lenses and with hard-soft gas permeable (GP) contact lenses in 0.53% of keratoconus eyes. There is a statistically significant difference in BCVA achieved...
better with contact lenses than with spectacles. RGP lenses are most frequently used in conservative treatment of keratoconus, but SGP lenses were also shown to be a good option that gives equally satisfying final visual acuity with subjective comfortable feeling of contact lens wear.13 Rico-Del-Viejo L et al proved that contact lenses try to restore the vision, improve the quality of life, and delay surgical procedures in patients with this disease.14

CONCLUSION
RGP contact lenses are useful in keratoconus patients when spectacles cannot maintain or improve vision because of irregular astigmatism. They improve vision, delay the need for penetrating keratoplasty.

Author’s Contribution:
Concept & Design of Study: Shafqat Ali Shah
Drafting: Hidayatullah Mahsud
Data Analysis: Mohammad Bilal, Nabila Hanifa
Revisiting Critically: Shafqat Ali Shah, Hidayatullah Mahsud
Final Approval of version: Shafqat Ali Shah

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

REFERENCES
Original Article

Hemoglobin Drop Postoperatively and Blood Transfusion Necessity in Cesarean Section

Bushra Mehmood, Tanzila Rafiq and Khalid Majeed

ABSTRACT

Objective: To assess the blood transfusion for Cesarean Section and blood drop postoperatively and haematocrit as well as to associate those parameters with the term between uterine incision and repair.

Study Design: Prospective observational study

Place and Duration of Study: This study was conducted at the Department of Obstetrics & Gynaecology, Shahida Islam Medical College Lodhran from September 2016 to August 2018.

Materials and Methods: A total of 121 females who experienced elective & emergency C-section were included. Hemoglobin post-cesarean drop and haematocrit and their connection with span of uterine manipulation were determined. %T (transfusion probability), Ti (transfusion index) and C/T ratio (crossmatch to transfusion) were additionally determined.

Results: 38% O positive blood group was found most frequently. 1.52±1.27 gm/dl average drop in hemoglobin in post cesarean and 5.49±4.1% haematocrit drop. Hemoglobin drop postoperatively and haematocrit had feeble and positive linear connection with period between uterine cut and fix. 1 was the C/T Ratio (crossmatch to transfusion ratio), 100% transfusion probability and 2 was the Ti (transfusion index).

Conclusion: Blood routine crossmatching is not necessary for C-Section. In emergency circumstances / conditions only blood grouping should be done with availability confirmation.

Key Words: Hemoglobin Drop, Cesarean Section, Blood Transfusion, C/T Ratio, Haematocrit.


INTRODUCTION

In obstetric practice, obstetric hemorrhage is a most important leading cause of maternal mortality. In developing countries, obstetric hemorrhage is a significant supporter of maternal morbidity. In obstetric practice, c-section identified as a general sign for blood transfusion since it includes danger of major intraoperative blood loss. Diverse figures shifting from under 500-ml to in excess of 1000-ml have been cited as evaluated blood loss related with cesarean segment. For this surgery, in blood ordering practices a wide variation is also there. Throughout the most recent couple of years there has been developing concern for cost, safety and amleness of blood use.

Proof based health related programmes and policies intending to decrease maternal mortality require solid and substantial information.

The point of this investigation is to empower enhancements in patients experience on blood use because of a fruitful review cycle. Assess the blood ordering practice and transfusion for the purpose of c-sections is the main objective of this investigation, to see hemoglobin drop postoperatively and haematocrit and to connect the post-operative drop in those parameters with the term between uterine cut and fix.

MATERIALS AND METHODS

Non randomized purposive sample of one hundred and twenty one (121) females who experienced elective & emergency c-section at obstetric department of Shahida Islam Medical Collage, Lohran were enrolled in this investigation during the period from September 2016 to August 2018 after obtaining formal approval from the hospital. In this present investigation those females were included who have normal haemostasis profile. Those females were excluded from study that has abnormal bleeding profile and females were also excluded who were on anti-coagulant therapy. Parameters included female age, c-section type (emergency or elective), incision uterus time and repair of uterus to determine time span in between, hemoglobin pre-operatively & haematocrit, time of bleeding as well as clotting time to exclude female with reading abnormally, group of blood, number of arranged blood units and for female pre-operative crossmatched and intra-operative transfuse units as well.

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Printed: February, 2019
as postoperatively. Blood arranged only refer for blood grouping and hold order to blood bank. At forty eight hours post-cesarean haematocrit and post-operative hemoglobin was done. SPSS latest version was used to analyze the collected data. C/T ratio (crossmatch to transfusion ratio), %T (transfusion probability) and Ti (transfusion index) were also calculated as shown in table-1.

RESULTS

24.54 ± 4.27 was the mean age of the patients ranging from sixteen years to forty three years in this present study. 72.2% females out of all experienced emergency c-section whereas electively experienced was 27.3% females. O positive blood group was most frequently found (38%), followed by (27.3%) B positive, (25.6%) A positive, (8.3%) AB positive & (0.8%) A negative as shown in Figure 1.

12.23±1.13 gm/dl was the average hemoglobin postoperatively ranging from 8.6 gm/dl to 15.6 gm/dl. 39.36±3.98 percent average haematocrit preoperatively ranging from 28% to 52%. For female (8.6 gm/dl) lowest hemoglobin, arranged 4 blood units in which preoperatively 2 units were crossmatched. Intraoperatively 1 unit was transfused amongst crossmatched and 1 unit was transfused postoperatively. After receiving two units of blood transfusion the post-operative hemoglobin was again 8.6 gm/dl for this female. Non crossmatched two units were arranged for remaining all. 10.01±6.76 minutes average time between uterus incision and fix. 10.74±1.49 gm/dl was the average hemoglobin postoperatively and 33.97±4.51 percent was haematocrit. 1.52±1.27 gm/dl was the average hemoglobin drop and 5.49±4.1 percent was haematocrit drop. 6.6 gm/dl was the maximum dropped hemoglobin (20% haematocrit) and 0 gm/dl minimum (0% haematocrit). Hemoglobin drop post-operatively had feeble and positive linear association with span between cut and repair (r = 0.056) of uterus. The similar association (r = 0.083) was also shown by the haematocrit drop post-operatively. 1.58±1.36 gm/dl was the average hemoglobin drop at emergency surgery (5.53±4.54 percent haematocrit) whereas 1.36±0.96 gm/dl at elective surgery (5.36±2.63 percent haematocrit). 1 was the crossmatch to transfusion ratio, 100% transfusion probability and 2 was transfusion index (Ti).

<table>
<thead>
<tr>
<th>Table No.1: Blood utilization indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>C/T Ratio</td>
</tr>
<tr>
<td>Crossmatch to transfusion</td>
</tr>
<tr>
<td>%T</td>
</tr>
<tr>
<td>Transfusion Probability</td>
</tr>
<tr>
<td>Ti</td>
</tr>
<tr>
<td>Transfusion Index</td>
</tr>
</tbody>
</table>

Figure No. 1: Blood group frequency

DISCUSSION

Significant risk factors for blood transfusion were c-section indications and blood loss quantity during surgery. In majority of the patient’s blood transfusion can be anticipated due to acute hemorrhage on the basis of antenatal risk factors. But during this surgery exact assessment of blood loss is difficult due to blood dispersion as well as blood being mix with amniotic fluid. Anesthesiologists frequently depend on clinical estimation of blood misfortune alone to direct the blood transfusion in the preoperative period in light of the fact that different techniques for estimation either may not be useful or accessible at all the occasions.

In spite of the fact that the frequency of serious transfusion responses and diseases is presently low, as of late it has turned out to be obvious that there is an immunological cost to be paid for blood transfusion items which prompts expanded morbidity. Furthermore, blood is a limited asset / resource with a restricted time span of usability and is related with extensive preparing costs. Therefore, usage of this finite resource needs basic survey to recognize oversea areas and in this manner decrease hazard to patients and clinic costs. Endeavors ought to be made to lessen the transfusion of blood without expanding maternal mortality and morbidity. Past studies works additionally recommend taking out crossmatching for c-section without significant hazard factors.

Presently the transfusion risk in relationship with c-section is low. However, placenta pervia, pre-eclampsia, haemorrhage, pre-operative maternal anemia and hemolysis, elevated liver enzyme levels & platelet levels (HELLP) syndrome are altogether connected with transfusion risk. It has been demonstrated that a female can withstand post haemorrhagic haematocrit dimension of twenty percent. When hemoglobin comes to 7 gm/dl to 10 mg/dl and active bleeding or related comorbidities than blood transfusion might be suitable. In our examination likewise, just blood transfusion offered was to a female giving ante-partum discharge whose hemoglobin was 8.6 gm/dl pre-operatively. To the
remaining three females, transfusion was not given whose hemoglobin was less than 10 mg/dl preoperatively.

2.5 ratio of crossmatch to transfusion is consider as significant for utilization of blood. Correspondingly 30% transfusion probability is considering significant blood utilization indication. In our investigation esteems were 1 and 100 percent individually. Among 121 females, for a female only two units were crossmatched and those two were used.

In a female post-cesarean level of hemoglobin relies of different factors such as during surgery amount of blood misfortune, during pregnancy iron store in body, lactation & BMI (body mass index). Sudden hemorrhage may happen with any control of the profoundly vascular term uterus. We endeavored to discover connection between uterine manipulation duration and hemoglobin drop post-operatively as well as haematocrit where both demonstrated feeble connection. In a study conducted by Faponle et al additionally discovered comparative outcome that the span of surgery did not affect transfusion of blood. Different investigations demonstrated that breastfeeding was related with a decline risk of post-partum anemia though high pre pregnancy body mass index builds the risk.

CONCLUSION

For cesarean section there is no need of routine crossmatching of blood. In case of emergency situation only blood grouping with affirmation of accessibility should be done. Anyway, this careful review is based on short period and suggestion can not be summed up.

Author’s Contribution:

Concept & Design of Study: Bushra Mehmood
Drafting: Tanzila Rafiq
Data Analysis: Khalid Majeed
Revisiting Critically: Bushra Mehmood, Tanzila Rafiq
Final Approval of version: Bushra Mehmood

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

REFERENCES


Outcome of Scalp Visor Flap for Post-Burn Facial Alopecia Reconstruction in Male Patients

Waseem Humayoun¹, Kamran Khalid², Ammara Rabbani², Farrukh Aslam Khalid², Barira Bashir² and Muhammad Amin²

ABSTRACT

Objective: To study the versatility and aesthetic outcomes of scalp visor flap for post burn scar alopecia reconstruction in male patients.

Study Design: Case series study

Place and Duration of Study: This study was conducted at the Department of Plastic Surgery, Jinnah Hospital, Lahore from May 2014 to June 2017.

Materials and Methods: A total of seven male patients were included. According to the size of defect created scalp visor flap was raised at galea-periosteum space preserving superficial temporal artery bilaterally. Flap is rotated on recipient area as bucket handle for moustache and beard reconstruction and donor site is skin grafted or closed primarily. Division and in setting carried out after 3 weeks and excess flap returned to cover the temporal region.

Results: There were 3 post flame burn, 2 chemical burn and 2 electric burn patients. Two patients required upper lip and 5 required both upper and lower reconstruction with donor site either skin grafted or closed primarily. All 7 flaps survived completely. Out of 7 patients, 4 (57.1%) have excellent, 2 (28.6%) have good and 1(14.3%) has fair results.

Conclusion: The scalp visor flap is a reliable and versatile hair bearing flap for male post burn scar facial alopecia management with excellent aesthetic outcome.

Key Words: Scalp visor flap, Hair bearing scalp flap, Male post burn scarring, Scar facial alopecia

INTRODUCTION

The face is sign of recognition for a human being. Facial burn scars have not only physical effects but have more severe effects on one’s personality and mental health. Facial burns vary from relatively minor insults to severe debilitating injuries that can lead to psychosis and low self-esteem.¹ Approximately 5.8 persons per 100,000 get burn annually.² Over 40% of burn injuries involve the head and neck region and can be caused by flame, electrical, steam, hot liquids, and chemicals. Burns may impart a tight masklike sensation to the face, distorting features and limiting facial expression.³ Appearance is altered by contractures, scarring, and pigmentary changes. The goal of the reconstructive surgeon is to minimize final deformity by restoring the patient to a near-normal appearance.⁴ Asian population facial skin is thicker as compared to Caucasian population and lead to much worse scarring due to high sebaceous gland activity. So Head and neck burns are a particular challenge for reconstruction.⁵ Another major difference is the presence of facial hairs in male, which is the recognition feature for males and sign of manhood.⁶ In our community religious and racial identity has increased its importance. Few religions support beard as a desirable practice and in tribes like Baluchistan and FATA its sign of male hood. So reconstruction of moustaches and beard is of utmost important in male patients.

Type of soft tissue defect or deformity depends on the size of defect created scalp visor flap was raised at galea-periosteum space preserving superficial temporal artery bilaterally. Flap is rotated on recipient area as bucket handle for moustache and beard reconstruction and donor site is skin grafted or closed primarily. Division and in setting carried out after 3 weeks and excess flap returned to cover the temporal region.

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2. Department of Jinnah Burns & Reconstructive Surgery Center, Jinnah Hospital/Allama Iqbal Medical College Lahore.

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Accepted: November, 2018
Printed: February, 2019

advantage of more reliability, better color match, easy to perform and comparatively less expertise requirement. Bi-pedicle Visor flap based on temporal vessels was used for reconstruction of beard and moustaches is a reliable flap with minimal complications. Donor site was either skin grafted or closed primarily after tissue expansion.

MATERIALS AND METHODS

This case series was carried out at Plastic Surgery Department, Jinnah Hospital Lahore over a period of three years from May 2014 to June 2017 and comprised seven male patients. Male patients, post burn scar alopecia of face (moustache and beard area) and spared scalp, upper and mid face area were included. Females, scarred scalp skin and bald patients were excluded. Under general anesthesia, facial non hair bearing scarred skin was excised from upper lip and lower face and facial defect size calculated. Superficial temporal artery location was marked on both sides either with hand held Doppler or by light touch palpation, mirror image flap marking was done on scalp keeping pedicle width and length in mind. An incision was made according to size of defect and flap raised at galea-periostium space preserving superficial temporal artery bilaterally. Flap is rotated on recipient area as bucket handle for moustache and beard reconstruction. Donor site is skin grafted or closed primarily after hemostasis. Flap in setting carried out after 3 weeks and excess flap returned to cover the temporal region (Figs. 1-4). The data was entered and analyzed through SPSS-20.

RESULTS

Of 7 patients all adult male between age ranges 18–45 years mean age 30 years, 3 were post flame burn scar alopecia or acute wounds, 2 chemical burn and 2 electric burn patients. Out of these 7 patients 2 had upper lip reconstruction with donor site closed primarily and remaining 5 had multiple unit reconstruction i.e upper and lower lip, the where donor site was grafted (as most of patient did not opt for scalp expansion and were satisfied with camouflage effect or those with acute burn needing immediate reconstruction were given option of later scalp expansion and donor site closure). Of the 7 patients operated all flaps survived completely. Only minor complication in two cases of hematoma formation and partial graft loss which were managed conservatively. A plastic surgeon was asked to assess the cosmetic outcome (table 2) at 6 months on following five parameters by Likert scale, overall face look (1-5), Beard/Moustaches look (1-5), Direction of hair normal (1-5), Quality of skin (1-5), Donor site concealed or not (1-5). With 1 as very poor, 2 as poor, 3 as fair, 4 as good and 5 as excellent results. Overall score with minimum score of 5 to maximum of 25, was interpreted as, <6 as very poor, 6-10 as poor, 11-15 as fair, 16-20 as good, 21-25 as excellent. Showing 4 (57.1%) out of 7 as excellent result, 2 (28.6%) out of 7 as good and 1(14.3%) out of 7 as fair results (Table 1). Thus confirming that visor flap is a reliable and cosmetically acceptable reconstruction option for scar alopecia of hair bearing facial skin in men those who wish to keep moustache and beard with well camouflaged flap having minimal flap complications and donor site morbidity.

Table No.1: Cosmetic outcome at 6 months of post-operative

<table>
<thead>
<tr>
<th>Cosmesis</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
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<td>57.1</td>
</tr>
<tr>
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<td>2</td>
<td>28.6</td>
</tr>
<tr>
<td>Fair</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td>Poor</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Very poor</td>
<td>-</td>
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</tr>
</tbody>
</table>
DISCUSSION

Facial reconstruction in male hair bearing units may be required in cases of acute burn (electric, chemical and thermal burns), post burn scarring, and trauma or after tumor excision. In our study we focused only on male patients with post burn scar alopecia requiring soft tissue reconstruction affecting the hair-bearing buccomandibular or perioral region.

In males burn scar may cause significant disfigurement of the upper lip and lower face. Such patients frequently request reconstruction of the moustache and beard to hide the scars and give them an appearance which is more suited to their age, sex and ethnicity moustaches has ability to camouflage perioral scars and defects.8 There are many ways to address this problem ranging from simple skin grafting to complex flaps9,10, gsubmentalislanded11 and scalp flaps are potential source as donor site for hairy part of face. The use of scalp pedicled flaps in facial reconstruction has been in practiced for hundreds of years for large defects as both beard and submental flaps are reserved for smaller defects. Gillies12 was one of the first to describe the use of scalp flaps based on the superficial temporal artery for lip and eyebrow defects reconstruction.

In this article, the use of bitemporal artery hair-bearing scalp flap for reconstruction of the moustache and beard area in seven patients has been described. The results shows that the scalp flap is one of the best-matched flaps that mimics the normal face colour, texture, and hair-bearing qualities for restoration of the middle and lower part of hair bearing the male face without significant donor site morbidity.13 So fulfilling all these characteristics it is an excellent choice for the functional and aesthetic restoration of lower face. Disadvantages include the multistage procedure and hair loss in flap as the androgenic alopecia sets in with advancing age if the flap was designed more anteriorly on the scalp. Scalp alopecia created with the flap harvested without scalp expansion is another disadvantage but most patients learn to camouflage it with change in hair style. One other disadvantage is, it can only be used in adults as bearded face in child is never acceptable. So visor flap is a safe option, quick to learn and easy to perform, having adequate blood supply that can achieve the main goal of operation, which is the restoration of a masculine appearance. And with care full flank planning or use of expander donor site morbidity and alopecia associated with the classic visor flap is virtually eliminated.14

CONCLUSION

The study concludes that scalp visor flap is a reliable and versatile hair bearing flap for male post burn scar facial alopecia management with excellent aesthetic outcome.

Author’s Contribution:
Concept & Design of Study: Waseem Humayoun
Drafting: Kamran Khalid, Ammara Rabbani
Data Analysis: Farrukh Aslam Khalid, Barira Bashir and Muhammad Amin
Revisiting Critically: Waseem Humayoun, Kamran Khalid
Final Approval of version: Waseem Humayoun

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

REFERENCES

**Comparison of Intra-Operative Hemorrhage by Blunt and Sharp Expansion of Uterine Incision at the Cesarean Section**

**Shysta Shaukat¹, Mahham Janjua¹, Tayyaba Iqbal¹, Aleena Sarwar¹, Shagufta Amin² and Maheen Mansoor³**

**ABSTRACT**

**Objective:** To compare the mean drop in hemoglobin in patients undergoing cesarean section in blunt versus sharp uterine incision.

**Study Design:** Randomized controlled trial.

**Place and Duration of Study:** This study was conducted at the Department of Obstetrics and Gynecology, Lady Aitchison Hospital, Lahore from June 2017 to December 2017.

**Materials and Methods:** One hundred patients are divided into two groups undergoing lower segment caesarean section through pfannenstiel incision. 50 patients are randomized to blunt incision group and 50 patients to sharp incision group.

**Results:** Indications for cesarean sections and maternal demographic factors were similar in both groups and significant fall in hemoglobin seen between two groups. Hemoglobin fall in sharp uterine incision is more as compared to blunt uterine incision and the difference between the groups is statistically significant. Mean Hemoglobin fall was 0.79±0.19 in group A versus 1.21±0.19 in group B. The difference was statistically significant among 2 groups p value=0.00(<0.05)

**Conclusion:** In lower segment cesarean section less hemoglobin fall noticed in blunt uterine incision as compared to sharp group so blunt expansion of uterine incision is better than sharp incision.

**Key Words:** Cesarean section, blunt uterine incision, sharp uterine incision

**Citation of articles:** Shaukat S, Janjua M, Iqbal T, Sarwar A, Amin S, Mansoor M. Comparison of Intra-Operative Hemorrhage by Blunt and Sharp Expansion of Uterine Incision at the Cesarean Section. Med Forum 2019;30(2):96-98.

**INTRODUCTION**

Cesarean section is the most common obstetric operative procedure with continuously increasing rate. There are certain complications and morbidities associated with procedure which can be reduced by adopting appropriate techniques¹ but there is little data available about proper technique for uterine incision to adopt.¹⁻³ Cesarean deliveries are associated with more complications than vaginal deliveries.

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Hemorrhage is most common life threatening complication in cesarean section which can be reduced by reducing extent of bleeding preoperatively and postoperatively by adopting several techniques for example; manual versus spontaneous placental extraction, intra-abdominal versus extra-abdominal uterine incision repair, blunt versus sharp uterine incision which is less debated.⁴⁻⁵ Uterine incision at cesarean section can be expanded by sharply cutting it laterally or by bluntly tearing myometrium with fingers. Some studies favor blunt surgery due to advantage of reduced mean blood loss at time of procedure, due to better protection of uterine vessel⁶ and due to speed and less risk of causing injury to fetus. But disadvantage is if fingers of surgeon swept too far laterally up to uterine vessel.⁶⁻⁷ Whereas sharp expansion associated with increase intraoperative blood loss and need for blood transfusion but advantage is controlled extension of length and direction of incision with scissor.² One study showed a (preoperative hemoglobin in blunt group was 12.5±1.4 in sharp group was 13.0±1.7, P>0.05 and postoperative hemoglobin in blunt group was 11.6±1.3 in sharp group 10.5±1.1, P<0.05) significant difference in mean hemoglobin before the surgery and 24 h later in two groups, mean difference was 1.1±0.9 in blunt group versus hemoglobin mean 3.0±1.2 in sharp group P < 0.05).³
MATERIALS AND METHODS

This randomized controlled trial was carried out at Department of Obstetrics and Gynecology, Lady Aitchison Hospital, Lahore from June 2017 to December 2017. One hundred patients are divided into two groups undergoing lower segment cesarean section through Pfannenstiel incision. 50 patients are randomized to blunt incision group and 50 patients to sharp incision group. Women age between 19 to 38 years, undergoing primary, elective lower segment cesarean section, parity 4 and less and placenta located in upper segment on ultrasonography were included. Those women have factors that can lead to postpartum hemorrhage for example, multiple pregnancy on USG, anemic patient with hemoglobin less than 10, pregnancy with fibroid diagnosed on USG, history of any thromboembolic disorder in past or family and severe medical and surgical disorders, bleeding disorders and anemia were excluded. All women subcutaneous incision and opening was performed with the scalpel, with the blunt dissection of tissue layers. A transverse uterine incision in the lower uterine segment of approximately 1-2 cm in length was made with the scalpel and then expended bluntly in Group A. Blunt expansion of primary incision was done by pulling the fingers apart laterally. Sharp expansion of the primary incision was done by cutting laterally with scissors in group B. Placenta was removed by control Cord traction method and active management of third stage of labour was done by giving inj. syntocinon 10 IU i.v. Uterus will be stitched with catgut in two layers with additional sutures to secure hemostasis if needed. Peritoneum was closed. Rectus sheet was approximated and skin was closed by subcuticular or interrupted sutures. Drop in hemoglobin was assessed by comparing the immediate preoperative hemoglobin with the hemoglobin obtained 24 hrs after the operative procedure. Hemoglobin reduction more than 1 g/dl was considered as significant blood loss. All data were entered and analyzed using SPSS-20.

RESULTS

Demographics including age (p=0.63), parity (p=0.53) and gestational age (p=0.97) were similar between two groups. Both groups were also similar in terms of indication of cesarean section. Main outcome measures were the mean hemoglobin fall among 2 groups (Table 1). Mean preoperative hemoglobin was 11.34±0.945 in group A and 11.1±1.01 in group B. Statistically the difference was not significant (P>0.05) (Table 2). Mean postoperative hemoglobin was 10.59±0.95 in group A and 9.88±1.05 in group B. Statistically the difference was not significant (P>0.05) (Table 3). Mean hemoglobin fall was (mean 0.79±0.195) in-group A versus (1.216±0.19) in-group B. The difference among two groups was statistically significance (P<0.05) (Table 4).

DISCUSSION

Cesarean section rate is increasing worldwide. Different techniques are used for uterine incision at cesarean section. Our study was performed to conclude better technique of uterine incision by comparing the two methods, blunt versus sharp uterine incision. Many studies are done on uterine incision techniques but these studies include primary, repeated, elective and emergency cesarean section with prolonged labour, grand multiparity, which are the risk factor for increase bleeding and can bias the results. Our study was done on primigravida women with no risk factor to reduce the bias. Blood loss was also measured by laboratory method to reduce the subjective error.

Our results showed that blunt expansion of uterine incision is associated with less maternal blood loss and less fall in hemoglobin level as compared to the sharp uterine incision. In this study blood loss was measured by mean fall in hemoglobin level. Our study favors the blunt expansion of uterine incision as a better technique because mean hemoglobin fall in blunt expansion of uterine incision was 0.79±0.195 as compared to sharp uterine incision was 1.21±0.19 and statistically significant (P<0.05). It is comparable to the results of Sekhavat et al where fall in hemoglobin in blunt group was 1.1±0.9 as compared to 3.0±1.2 in sharp group. Sekhavat et al and Maggan et al favor blunt expansion of uterine incision as there is more blood loss

| Table No.1: Demographic profile of the women |
|-----------------|-----------------|-----------------|
| Variable        | Blunt uterine incision | Sharp uterine incision | P value |
| Age (years)     | 25.4±4.32        | 25.02±4.45       | 0.6332     |
| Parity          | 0.38±0.87        | 0.5±1.04         | 0.5333     |
| Gestational age (weeks) | 38.82±1.05 | 38.82±0.77 | 0.9741 |

| Table No.2: Comparison of preoperative hemoglobin between two groups |
|-----------------|-----------------|-----------------|
| Preoperative hemoglobin | Blunt uterine incision | Sharp uterine incision | P value |
| 11.38±0.945      | 11.10±1.01       | 0.153            |

| Table No.3: Comparison of postoperative hemoglobin between two groups |
|-----------------|-----------------|-----------------|
| Postoperative hemoglobin | Blunt uterine incision | Sharp uterine incision | P value |
| 10.59±0.95      | 9.88±1.05        | 0.001            |

| Table No.4: Comparison of mean hemoglobin fall between two groups |
|-----------------|-----------------|-----------------|
| Hemoglobin mean fall | Blunt uterine incision | Sharp uterine incision | P value |
| 0.79±0.19       | 1.21±0.19        | 0.000            |
associated with sharp incision due to bleeding from incised edges, traumatized blood vessels, extension of uterine incision. No difference was seen in term of blood transfusion in both groups in Sekhavat et al study but Maggan et al results shows more blood transfusion was required in sharp group. Similar study was done by Rodriguez et al in 1994 on 286 patients. He postulated that drop in hemoglobin was more with sharp technique of uterine incision but results were not statistically significant, this study lack the information about blood transfusion. In 2008 Cochrane review regarding various surgical techniques on uterus at cesarean section showed that blunt uterine incision has reduced blood loss during cesarean section in comparison with sharp -43.00, 95% (CI) - 66.12 to -19.88 but statistically no difference was seen in term of blood transfusion. It includes the result of three randomize control trails of Sekhavat et al, Maggan et al and Hidar et al comparing the blunt versus sharp uterine incision. The results showed that blunt technique is associated with reduced operation time and reduce maternal blood loss with blunt expansion of uterine incision as compare to sharp incision. In these trails blood loss was measured by volume estimation and laboratory method. Blood loss was significantly less when measured by volume estimation but results are not statistically significant by laboratory method which require further studies to reach final conclusive results. Extension of primary uterine incision was also compared in both groups in this meta-analysis which showed blood loss was also less due to decrease chances of extension of primary uterine incision in blunt group. Shamsi et al in 2005 done a study on 100 patients comparing two groups showed that blunt expansion of uterine incision is associated with more blood loss as compared to sharp. Their study was different from our study because she applied blunt technique of uterine incision on more number of the patients with previous cesarean section but the results are not statistically significant between two groups.

CONCLUSION

Blunt type of uterine incision is better than sharp because hemoglobin fall is less as compared to sharp incision of uterus.

Author’s Contribution:
- Concept & Design of Study: Shysta Shaukat
- Drafting: Maham Janjua, Tayyaba Iqbal
- Data Analysis: Aleena Sarwar, Shagufta Amin, Maheen Mansoor
- Revisiting Critically: Shysta Shaukat, Maham Janjua
- Final Approval of version: Shysta Shaukat

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

REFERENCES

Awareness of Hepatitis C in Non-Medical University Students in Karachi
Faheem Ahmed, Tafazzul H Zaidi and Kiran Mehtab

ABSTRACT

Objective: To determine Awareness of Hepatitis C in Non-Medical University Students in Karachi.
Study Design: Cross-sectional study.
Place and Duration of Study: This study was conducted at the NED University of Engineering and technology, Karachi University, Federal Urdu university, Sir Syed University of Engineering and Technology from August 2018 to December 2018.
Materials and Methods: The sample of 396 students was taken through Non-Probability Purposive Sampling. An informed verbal consent was taken from the candidates. Pilot study was conducted to assess the authenticity of the questionnaire. A structured questionnaire was then distributed, got filled, data was entered and analyzed using SPSS version 20, with 95% confidence interval and 0.05 p-value.
Results: There were a total of 396 students who participated in the survey. The majority of the students were from field of engineering numbering 199(50.3%), followed by Arts Numbering 83(21%) , Commerce 54(13.6%), BSc 60(15%).

INTRODUCTION
Hepatitis C is a preventable yet a frequently incurable disease. It is caused by the hepatitis C virus and is usually transmitted via blood from an infected person. The disease can be fatal since it often causes chronic infection which may lead to cirrhosis and hepatocellular carcinoma. The major culprits for the transmission of hepatitis C seem to be the use of contaminated medical equipment in unsafe medical practices, use of contaminated blades by barbers, IV drug abuse, unscreened blood transfusions and neglect of proper personal hygiene. The WHO estimates that around 130 to 150 million people around the world suffer from chronic infection. Approximately 500,000 die each year. The most severely affected regions are Africa, Central and East Asia, the highest prevalence being in Egypt. The incidence of hepatitis C is significantly high in developing countries like Pakistan. An approximated prevalence is 4.8% with 10 million being infected. The underdeveloped health system, economic crisis and the high illiteracy rate are some of the major factors that prevent people from becoming aware of the various ways the virus is spread. Being the sixth most populous country in the world and having a high population growth rate, Pakistan's health resources are already spread thin. Consequently, the high cost of Ribavirin e and peglated interferon treatment limits the availability and the effectiveness of their use. Therefore, to control the spread of the disease the only

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viable option is to adopt prevention as the primary mode of defense against hepatitis C. Prevention at any meaningful level can only be possible if the general public has the proper knowledge and attitude towards the risk factors and consequences of hepatitis C. There are already some campaigns being carried out in Pakistan to increase the awareness about hepatitis C which includes public service messages via media and seminars at various educational institutions on world hepatitis day. However, in order to achieve a greater impact, the need for appropriate knowledge that should be imparted to students as part of their health education should be evaluated. Information acquired by such evaluation will thus provide guidance to better plan health, education curriculums and execute more effective campaigns.

MATERIALS AND METHODS

A cross sectional study was conducted by adopting a quantitative method. A questionnaire had been developed for collection of data from university students, who were in study programs other than those related to biological fields and medicine. Sites of study were four universities of Karachi i.e. NED University of Engineering and technology, Karachi University, Federal Urdu university, Sir Syed University of Engineering and Technology within a study period of 4 months from August to December 2018. Data was collected from 396 students from selected universities by using a close ended questionnaire. The ages of these participants ranged from 17 to 26. Both the genders were involved in the research. The students were sorted in field of study i.e. bachelors in engineering, arts, commerce and science Non-probability Purposive Sampling technique was adopted. An informed verbal consent was taken from the candidates. Pilot study was conducted to assess the authenticity of the questionnaire. A structured questionnaire was then distributed, got filled, data was entered and analyzed using SPSS version 20, with 95% confidence interval and 0.05 p-value.

RESULTS

There were a total of 396 students who participated in the survey. The majority of the students were from field of engineering numbering 199(50.3%), followed by Arts Numbering 83(21%), Commerce 54(13.6%), BSc 60(15%). Among the students, only 79 (19.9%) were aware that hepatitis C was a viral disease while 166(41.9 %) thought that it was bacterial. The number of students who were aware that it is spread via unscreened blood was 275(69.4%) and that it is spread via sharing needles were 320 (80.8%).Regarding the prevention of hepatitis C, 296 (74.7%) knew that it was preventable while 281 (71%) thought that a vaccine existed for prevention of Hepatitis C.
dressing salons. 333 (84%) responded that they would not marry a Hepatitis C infected person. 145 (36.6%) students thought that the infected should be isolated from others. A majority 317 (80%) had not attended a Hepatitis C Awareness Seminar.

### DISCUSSION

Hepatitis C has created a crisis which has only served to increase the financial burden and create social stigmas in our society. In Pakistan the use of unsterilized needles in medical institutes, the transfusion of unscreened blood, widespread drug abuse and the lack of proper sterilization in dental surgeries have led to an increase in its occurrence. The chronicity of the disease increases the morbidity and mortality. It puts the underprivileged patients at a disadvantage and an increased risk of developing cirrhosis since the only care they can avail are the public health services. Moreover, hepatitis C may also cause social issues such as isolation, marital problems and a need for lifestyle modifications. This growing crisis requires intervention at a preventive level which can only be achieved if the public is educated about the disease.

The study found a dominance of the students that had adequate knowledge about the modes of transmission of hepatitis C. The number of students who were aware that it is spread via unscreened blood was 275 (69.4%) and that it is spread via sharing needles were 320 (80.8%). Regarding the prevention of hepatitis C, 296 (74.7%) knew that it was preventable. The Similar Findings Were Confirmed by a Study Conducted In Quetta In Pakistan in 2010. The Study showed The only 79 (19.9%) were aware that hepatitis C was a viral disease while 166 (41.9%) thought that it was bacterial. This misconception displays a gap in the basic knowledge of the disease. 281 (71%) thought that a vaccine existed for prevention of Hepatitis C. This Misconception was supported earlier by another study conducted in Karachi in 2010 where 60% students had responded that such a vaccine existed. 252 (63.6%) Students ensured that new syringes were used by the hospital staff whenever they vested hospital. 250 (63.1%) ensured that sterilized instruments were used during dental checkup. Majority Of Non Medical Students also Took Similar Precautions According To A study Conducted In Egypt in 2013. 299 (75%) made sure that new blades were used in hair dressing salons. This was Similar to a Study conducted in Hyderabad where the percentage of students who ensured that sterilized equipment was used was higher yet those who asked for new blades in salons were much lower than the ones totaled in this study. 333 (84%) responded that they would not marry a Hepatitis C infected person. Similar Mindset was demonstrated by Non Medical University Students Who were approached in a Study conducted in Egypt. The study showed that 145 (36.6%) students thought that the infected should be isolated from others.

The participants were also asked about to campaigns regarding hepatitis C to which a large majority answered that they had never been exposed to such measures. The Study showed that A majority 317 (80%) Non Medical University Students had not attended a Hepatitis C Awareness Seminar. The participants were also found to be eager get opportunities where they would be educated about hepatitis C with media campaigning to be the most popular choice among them.

### CONCLUSION

The results of this survey showed that the level of awareness, the attitudes and practices regarding hepatitis C among non-medical university students is less than satisfactory. The survey highlighted significant gaps in knowledge that might lead to unsafe practices, however the majority of the students do not seem to be in any direct danger of contracting hepatitis C. these gaps in knowledge might be overcome by introducing basic health care in school curriculums and assigning
health care workers by the government to educate the general public.

**Author's Contribution:**
- Concept & Design of Study: Faheem Ahmad
- Drafting: Tafazzul H Zaidi
- Data Analysis: Kiran Mehtab
- Revisiting Critically: Faheem Ahmad, Tafazzul H Zaidi
- Final Approval of version: Faheem Ahmad

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

**REFERENCES**

Objective: To study the relationship between duration of hypertension and vision problems in individuals suffering from hypertension.

Study Design: Cross-sectional study.

Place and Duration of Study: This study was conducted at the Medical Outpatient Department of Medicine, Shahida Islam Medical College and Hospital, Lodhran from April 2018 to September 2018.

Materials and Methods: A cross-sectional survey was conducted on 307 patients of 18 or higher ages hospital with the utilization of convenient sampling technique. Age, duration of hypertension and presence and type of vision problem in patients were evaluated with the help of a structured questionnaire developed specifically for the study. For inferential analysis chi-square test was employed. Potential confounding effect of age was controlled by means of stratification.

Results: The outcome of the study predicted a significant positive association between longer duration of hypertension and presence of vision problems (p=0.004) where patients with longer duration of hypertension had higher prevalence of vision problems than those with shorter duration (66.7% vs. 48.1%) although after controlling for the potential confounding effect of age, this association no longer persisted in any of the two age groups (p>0.05 for both).

Conclusion: The study results revealed a positive association between longer duration of hypertension and presence of vision problems, although not after controlling for the confounding effect of age. Moreover, no significant association between duration of hypertension and types of vision problems was observed in the study participants. Further evaluation of the study findings with more rigorous study designs and a larger sample size is recommended.

Key Words: Vision Problems, hypertensive patients, duration of hypertension, age.


INTRODUCTION

The precise definition of Hypertension is, "systolic blood pressure of ≥140 mm Hg, or a diastolic blood pressure of ≥90 mm Hg, or taking anti-hypertensive medication". It has been recognized as the third most cause for morbidity resulting in 64 million inability settled living years (4.4% in overall DALYs) and as the predominant element of danger for death worldwide. In 2005, global hypertension prevalence was estimated to be 26% which by the year 2025 is expected to rise to 29%. The percentage of the people suffering from high blood pressure worldwide decreased during the years 1980 and 2008. Nevertheless, due to the expansion of population and ageing, the amount of individuals with uncontrolled hypertension amplified from 600 million in 1980 to about 1 billion in 2008. Moreover, hypertension is estimated to result in 7.5 million mortality rate annually, around 12.8% of all deaths. The highest prevalence of hypertension globally has deviated from upper average revenue countries to lower average revenue countries. It is estimated that by 2025 approximately three fourths of individuals with hypertension will be living in evolving countries. World Health Organization estimates the total prevalence rate of hypertension in Pakistan to be 25.2%. Raised blood pressure levels have consistently been revealed to be related to the hazard for stroke and coronary heart disease. Additionally, the complications of hypertension include peripheral vascular disease, kidney disease, retinal hemorrhage and visual disturbances. Visual impairment is reported to have a remarkable effect on quality of life and it has been estimated that the quality of life related to health is substantially deduced in persons who are suffering from visual impairment in comparison with normal individuals. Visual impairment has also been found to contribute to deficits in performance on everyday tasks. It therefore
results in a lifelong disparity as patients with visual damage usually have worse physical condition, and encounter obstacles to education and work. The effects of blindness are too visible in a family as helpful responsibilities can lessen the chances of other family members to flourish and amplify the possibility of misery of the family. The effect is well-versed nationally as well, where blindness can result in financial deficits and augmented costs to the health sector.9 World Health Organization estimates that 39 million individuals are suffering from blindness and 253 million to have vision disturbances globally.9 Pakistan National Blindness and Visual Impairment Survey report the prevalence of vision loss to be 2.7%, with an estimated 1.14 million blind adults in Pakistan.10 It has been estimated that the preventable causes of visual impairments are up to 80% of the entire universal load.11 Likewise, the estimated percentage of preventable causes of visual impairment in Pakistan is placed at 85.5%.12 Literature frequently relates tighter blood pressure control with favorable visual outcomes in hypertensive patients. Browning AC et al. in 2001 suggested that the chances of permanent severe visual damage can be reduced by promptly diagnosing the malignant hypertension in children.13 Colucciello M in 2005 concluded that modification of risk factors such as hypertension can enhance vision outcomes and protect the standard of living.14 Bhargava M et al. in 2012 reported that high blood pressure typically leads to a sequence of microvascular retinal alterations known as hypertensive retinopathy, consisting of retinal arteriolar constriction, arteriovenous nicking, retinal hemorrhages, micro aneurysms and optic disc and macular edema. Moreover, hypertension is among the key element of danger for development and succession of diabetic retinopathy, and its control has been demonstrated for the prevention of blindness from diabetic retinopathy.15 In spite of that, to the greatest of authors’ knowledge, there’s virtually no information for evaluating the association between duration of hypertension and presence of visual problems in hypertensive patients. Moreover, as it has also been reported that disturbance in vision is related with high possibility of mortality16,17, its association with duration of hypertension is worth investigating. In the given context, collecting pertinent local data is essential for establishing a baseline for future comparisons and planning of targeted interventions. Our objective therefore was to study the relationship between duration of hypertension and vision problems in subjects with hypertension.

MATERIALS AND METHODS

Across-sectional survey was conducted on patients selected from the medical outpatient department of medicine of Shahida Islam Medical College and hospital after receiving approval from the ethical committee. After checking their eligibility, 307 patients with convenient sampling technique, of 18 or above ages, were selected in the study against a calculated sample size of 267 participants with 50% frequency of outcome factor, 95% confidence interval and 6% precision. Self-stated record of high blood pressure and being on prescription against hypertension were the inclusion criteria whereas the patients having the history of diabetes, cardiac events, neurological disorders, cluster headache, gastrointestinal disease and life-threatening obesity were excluded from the study. Prior to interview, verbal approval was taken from every member of the study and all relevant information pertaining to the study was conveyed to the participants. Data regarding age, duration of hypertension and presence and types of vision problems in patients were evaluated with the help of a structured questionnaire developed specifically for the study. The obtained information were enrolled, cleaned and assayed on SPSS version 20. Descriptive analysis was done by calculating the frequency and percentage for categorical variables and means and standard deviations for continuous variables. For inferential analysis chi-square test was employed whereas the potential confounding effect of age was controlled by means of stratification. The significant level was at 0.05. The period of survey spanned over 4 months.

RESULTS

The total data collected were of 307 patients but after excluding missing data for various study variables the final data analyzed were of 293 patients. The study results revealed that out of a total of 293 participants, 56.3% aged <50 years, 51.9% were males, 70.3% had hypertension for up to 5 years, 53.6% had vision problems whereas 44.9% had dark spots in field of vision (table 1). Moreover, the mean duration of hypertension in patients with vision problems was 5.64±6.18 years whereas that in patients without vision problems was 3.91±4.28 years (figure 1). The study results further revealed a significant positive association between longer duration of hypertension and presence of vision problems (p=0.004) where patients with longer duration of hypertension had higher prevalence of vision problems than those with shorter duration (66.7% vs. 48.1%) (table 2).

Figure No.1: Comparison of Mean Duration of Hypertension
Table No.1: Participants Profile

<table>
<thead>
<tr>
<th>Variables (n=293)</th>
<th>Frequency(%)</th>
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<tr>
<td>&lt;50 Years</td>
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<td>≥50 Years</td>
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<td>Loss of Central/Peripheral Vision</td>
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<td>Dark Spots in Field of Vision</td>
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Table No.2: Cross Tabulation between Duration of Hypertension and Vision Problems

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Table No.3A: Duration of Hypertension and Vision Problems in Patients <50 Years Old

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<td>No (n=83)</td>
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<td></td>
<td>40(67.8)</td>
<td>19(32.2)</td>
</tr>
</tbody>
</table>

Table No.3B: Duration of Hypertension and Vision Problems in Patients ≥50 Years Old

<table>
<thead>
<tr>
<th>Variable (n=128)</th>
<th>Vision Problems</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to 5 Years</td>
<td>Yes (n=75)</td>
<td>No (n=53)</td>
</tr>
<tr>
<td></td>
<td>Frequency (%)</td>
<td>Frequency (%)</td>
</tr>
<tr>
<td></td>
<td>35(50.7)</td>
<td>34(49.3)</td>
</tr>
<tr>
<td></td>
<td>0.051</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6 Years and Above</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40(67.8)</td>
<td>19(32.2)</td>
</tr>
</tbody>
</table>

Post stratification analysis to manage the potential confounding impact of age showed that the significant association earlier seen between duration of hypertension and presence of vision problems no longer persisted in any of the two age groups (p>0.05 for both) (tables 3A and 3B).

Moreover, cross tabulation between duration of hypertension and types of vision problems did not reveal any significant association (p=0.726) (table 4).

DISCUSSION

The study results revealed a significant positive association between longer duration of hypertension and presence of vision problems in hypertensive patients where those with longer duration of hypertension had higher prevalence of vision problems than those with shorter duration though after age based stratification this association did not persist anymore. Furthermore, no significant association between duration of hypertension and types of vision problems was observed in the study participants.

As cited above, the relationship between hypertension and vision problems is already known. Even though a thorough literature search did not reveal any pertinent local or international data, in light of this information, it can be reasonably suspected that greater time-span of hypertension leads to more chances of impairment of vision.

A systematic analysis of dose management and compliance of medication published in 2001 revealed that easier and infrequent dosing course resulted in improved compliance. Being an inclusion criterion, every hypertensive individual in our study was on anti-hypertensive medication. Because the compliance of
the study participants with the prescribed treatment was not the desired end point of the study, it was not assessed. But as anti-hypertensive medications are usually given as multiple therapies with multiple doses, it is not unlikely that the blood pressure level of hypertensive patients is not always well controlled because of potential for poor compliance. Another systematic review published in 2004 also reported blood pressure control while on anti-hypertensive medication to vary from 5.4% to 58%.19

In this context, and as expected, the preliminary assessment of the study data showed a significant positive association of longer duration of hypertension with higher prevalence of sleep apnea (p=0.004). Naturally, advancement of age results in deterioration of multiple bodily functions, and vision is no exception. Literature also reports that visual impairment is largely confined to adults aged 50 years or more20, and that 81% of those subjects who are 50 years of age or above are blind or have mild or severe visual disturbances.21 The study participants were therefore stratified into two age based groups, using the above mentioned cut off of 50 years, to control for the potential confounding effect of their age. As apprehended, the initially observed association between duration of hypertension and presence of visual impairment did not appear in the post stratification analysis, signifying the age of the study participants to be a confounder indeed. Nevertheless, as cited above, visual impairment adversely influences the life of an affected individual and its consequences are far reaching.7-9 It is therefore duly suggested that any hypertensive patients with a prolonged disease history and/or advanced age should be screened for vision problems for their early detection and prompt treatment.

The study results did not show any association between duration of hypertension and types of vision problems, although loss of central/peripheral vision was observed to be more prevalent among patients with longer duration of hypertension as opposed to dark spots in field of vision and pain in eyes which were seen to be more common among patients with shorter duration of hypertension. As a thorough search did not reveal any relevant published data, this study finding could not be compared with previous pertinent literature.

Limitations: The assessment of duration of hypertension may have suffered from limitation of recall, an inherent weakness of a cross-sectional study design. Moreover, the vision problems were assessed by history only and not on eye examination. Use of convenient sampling technique due to resource constraint was another limitation of the study.

CONCLUSION

Conclusion and Recommendation: The study results revealed a positive association between longer duration of hypertension and presence of vision problems, although not after controlling for the confounding effect of age. Moreover, no significant association between duration of hypertension and types of vision problems was observed in the study participants. In order to prioritize the use of limited resources and identifying areas for selected interventions, early recognition of hypertensive profile at high risk for development of subsequent complications is imperative. Further evaluation of the study findings with more rigorous study designs and a larger sample size is therefore recommended to verify the observed results.

Author’s Contribution:
Concept & Design of Study: Muhammad Luqman Ali Bahoo
Drafting: Muhammad Sarwar Khalid
Data Analysis: Mazhar ul Haq
Revisiting Critically: Muhammad Luqman Ali Bahoo, Muhammad Sarwar Khalid
Final Approval of version: Muhammad Luqman Ali Bahoo

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

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7. Langelaan M, de Boer MR, van Nispen RM, Wouters B, Moll AC, van Rens GH. Impact of...


Comparison of Accuracy between Ultrasound B Scan and Partial Coherence Interferometry (IOL Master) in IOL (Intraocular Lens) Power Calculation

Muhammad Jahan Zaib Khan, Mohammad Asad Faraz, Abdul Ghafoor

ABSTRACT

Objective: To compare the accuracy between partial coherence interferometry and ultrasound B scan in intraocular power calculation.

Study Design: Non-randomized control trail study.

Place and Duration of Study: This study was conducted at the Department of Ophthalmology, Bahwal Victoria and Civil Hospital, Bahawalpur, from June 2018 to January 2019.

Materials and Methods: IOL power and probable refractive outcome was calculated for each patient by both methods i.e. A-scan ultrasound biometry and IOL master (partial coherence interferometry). IOL power as calculated by IOL master was implanted in-the-bag by the author himself in specified time duration. Preoperative assessment was conducted for each patient, which included, best corrected visual acuity and subjective refraction, slit lamp examination for pupil examination, corneal clarity and cataract type, detailed fundus examination and intraocular pressure measurement. Post operative best corrected visual acuity and uncorrected and slit lamp examinations were performed at 1st day and 1st postoperative month. Mean and standard deviation was calculated for qualitative variables while frequency and percentage was calculated for quantitative variables. Mann-Whitney test was applied and P value less than or equal to 0.05 was considered as statistically significant.

Results: Total of 50 eyes were examined. Ultrasound A scan as well as partial coherence interferometry was performed for all the eyes and IOL power was implanted in accordance with IOL master. Mean absolute error was 0.686±0.493 with A scan while 0.731±0.528 according to IOL master (p=0.656). Mean numerical error was -0.531±0.498 with A scan while -0.612±0.590 with IOL master (p=0.460). Mean axial length was 24.48±3.37 and 24.92±3.54 with ultrasound A scan and IOL master, respectively (p=0.527).

Conclusion: It can be concluded by the results of this study that difference between the two modalities is not statistically significant in terms of refractive outcome.

Key Words: Ultrasound B scan, Partial Coherence Interferometry, Intraocular lens, Power, Axial length, Cataract surgery

INTRODUCTION

In ophthalmology cataract surgery is one of the most commonly performed surgery and owing to the recent advancements in this surgery has lead it to become a more of refractive surgery than curative surgery1.

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1. Department of Ophthalmology, Quaid Azam Medical College, Bahawalpur.

Alternative to cataract surgery are no present and the aim of this surgery is to attain as much normal vision as possible. Correct estimation of intraocular lens power is a necessary first step in order to achieve the emmetropia in cataract surgery2. In biometry different variables are used which are calculated using the variety of intraocular lens calculation formulae, these include axial length of eye, depth of anterior chamber and average refractive power of cornea3. Accuracy of refraction postoperatively in cataract surgery depends on minimal number of errors associated with above mentioned parameters of measurements4. A skilled technician, significant duration and optimum contact to the surface of cornea are required to achieve the minimal error. Moreover errors linked to the axial length most significantly affect the post cataract surgery refraction5. This accounts for more than fifty percent of deviation from the expected outcome postoperatively.
Axial length is traditionally measured with the help of ultrasound or A-scan it is the most commonly used method. Associated side effects of this technique include the possible indentation of the cornea by coming in contact with the ultrasound probe which might result in shortening of the eye and thus causing incorrect estimation of the axial length and in the end leading to postoperative refraction shift towards myopia. These difficulties are limited now with the introduction of a newer technique which is a non contact optical biometry i.e. laser interferometry. With the help of laser interferometry postoperative intraocular lens selection has been better and more accurate. Partial coherence interferometry has become a more accurate and better instrument for the measurement of axial length. In this study, we have evaluated eyes posted for cataract surgery in a prospective fashion estimating the IOL power in the same patient with both traditional axial biometry and the IOL master.

MATERIALS AND METHODS

Study was conducted in Department of Ophthalmology, Bahawal Victoria and Civil Hospital, Bahawalpur, from June 2018 to January 2019. It is a non randomized study. Ethical approval was obtained from hospitals ethics committee. Sample size was calculated from the reference study conducted by Aditi Sharma et al. non probability consecutive sampling technique was used. A total number of 50 patients took part in this study. Inclusion was based upon following criteria; all patients in whom calculation of reliable IOL master reading was possible which were based on good SNR. Exclusion was based on the following criterion; low or border line SNR cases, corneal curvature abnormalities, corneal pathologies, corneal opacity, eyes with dense cataract, corneal degeneration and media opacities, keratocorneal Vitamin A, lens induced glaucoma, any retinal pathology, angle closure glaucoma, any history of trauma to eye, patients with complications at the time of surgery and patients who had history of prior eye surgery, age less than 15. IOL power and probable refractive outcome was calculated for each patient by both methods i.e. A-scan ultrasound biometry and IOL master (partial coherence interferometry). IOL power as calculated by IOL master was implanted in-the-bag by the author himself in specified time duration. Preoperative assessment was conducted for each patient, which included, best corrected visual acuity and subjective refraction, slit lamp examination for pupil examination, corneal clarity and cataract type, detailed fundus examination and intraocular pressure measurement. Post operative best corrected visual acuity and uncorrected and slit lamp examinations were performed at 1st day and 1st postoperative month. IOL master or coherence interferometry was used according to the standard recommendations in all patients. After that keratometry was done using the manual keratometer and then A-scan contact probe biometry was done using an ultrasound unit. Both procedures were performed by the author himself. With each IOL, SRK T formula was used to determine the IOL power as well as predicted postoperative refraction. In order to obtain geometrical distances, the optical distances calculated by IOL master were divided by the group refractive indices of ocular media. For group refractive indices of aqueous, lens, vitreous and cornea, values of, 1.3454, 1.4065, 1.3440, and 1.3851 were used. A constant group refractive index for all cataract grades was assumed for conversion of optical values into geometrical values of lens thickness. For aqueous humour and vitreous humour sound velocity of 1532 meter per second was used while sound velocity of 1642 meter per second was used for the lens. At least ten measurements were taken for each parameter in each eye and mean was calculated. A total axial length was obtained by adding means of measured intraocular distances.

All patients underwent successful phacoemulsification. Follow up was planned at 1st postoperative day and 4 weeks postoperatively. All the data was calculated by the researcher himself. Data thus obtained was subjected to statistical analysis. Statistical analysis was done with the help of computer software SPSS version 23. Mean and standard deviation was calculated for quantitative variables while frequency and percentage was calculated for qualitative variables. Mann Whitney test was applied and P value less than or equal to 0.05 was considered as statistically significant.

RESULTS

Total of 50 eyes were examined. Ultrasound A scan as well as partial coherence interferometry was performed for all the eyes and IOL power was implanted in accordance with IOL master. Mean absolute error was 0.686±0.493 with A scan while 0.731±0.528 according to IOL master (p=0.656). Mean numerical error was -0.531±0.498 with A scan while -0.612±0.590 with IOL master (p=0.460). Mean axial length was 24.48±3.37 and 24.92±3.54 with ultrasound A scan and IOL master, respectively (p=0.527). MNE was compared according to the cataract type. MNE was -0.534±0.688 and -0.582±0.667 for NS1; -0.457±0.293 and -0.439±0.281 for NS2; -0.488±0.300 and -0.760±0.743 for NS3; and -0.761±0.790 and -0.764±0.672 for NS4, with ultrasound A scan and IOL master, (p-value 0.872, 0.854, 0.215, 0.992) respectively. MNE was also compared according to axial length. For eyes with 20-24 MAL, MAE was -0.479±0.448 and -0.504±0.460 with A scan and IOL master, respectively (p=0.829). For eyes with 25-29 MAL, MAE was -0.506±0.313 and -0.760±0.773 with A scan and IOL master, respectively (p=0.320).For eyes with 30 and above MAL, MAE was -0.863±0.898and -0.764±0.672 with A scan and IOL master, respectively (p=0.816). Table-1
Table No.I: Comparison of ultrasound A scan vs IOL master

<table>
<thead>
<tr>
<th>Variable</th>
<th>A scan</th>
<th>IOL master</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean absolute error (n=50)</td>
<td>0.686±0.493</td>
<td>0.731±0.528</td>
<td>0.656</td>
</tr>
<tr>
<td>Mean numerical error(n=50)</td>
<td>-0.531±0.498</td>
<td>-0.612±0.590</td>
<td>0.460</td>
</tr>
<tr>
<td>Mean axial length(n=50)</td>
<td>24.48±3.37</td>
<td>24.92±3.54</td>
<td>0.527</td>
</tr>
</tbody>
</table>

Cataract type of MNE

<table>
<thead>
<tr>
<th>Variable</th>
<th>A scan</th>
<th>IOL master</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NS1 (n=11)</td>
<td>-0.534±0.688</td>
<td>-0.582±0.667</td>
<td>0.872</td>
</tr>
<tr>
<td>NS2(n=17)</td>
<td>-0.457±0.293</td>
<td>-0.439±0.281</td>
<td>0.854</td>
</tr>
<tr>
<td>NS3(n=14)</td>
<td>-0.488±0.300</td>
<td>-0.760±0.743</td>
<td>0.215</td>
</tr>
<tr>
<td>NS4 (n=08)</td>
<td>-0.761±0.790</td>
<td>-0.764±0.672</td>
<td>0.992</td>
</tr>
</tbody>
</table>

Axial length of MNE

<table>
<thead>
<tr>
<th>Variable</th>
<th>A scan</th>
<th>IOL master</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-24 (n1=33, n2=29)</td>
<td>-0.479±0.448</td>
<td>-0.504±0.460</td>
<td>0.829</td>
</tr>
<tr>
<td>25-29(n1=11, n2=13)</td>
<td>-0.506±0.313</td>
<td>-0.760±0.773</td>
<td>0.320</td>
</tr>
<tr>
<td>30 and above (n1=06, n2=08)</td>
<td>-0.863±0.898</td>
<td>-0.764±0.672</td>
<td>0.816</td>
</tr>
</tbody>
</table>

DISCUSSION

Accurate biometry after lens implantation is the most important factor in order to achieve a successful refractive outcome even more important than the formulas used for calculation of lens power14. Accuracy is dependent upon the technique of the technician. Without the use of proper skill the measurements obtained are mostly faulty and unreliable. On the other hand use of partial coherence interferometry requires minimum training and is able to give optimum results better as compared to the best ultrasound technique. In this study these two procedures were compared. Many past studies in different settings have compared these techniques and results of these studies strongly favor the partial coherence interferometry as it gives improved refractive outcome with all available IOL formulas15-18.

In a previous study conducted by Julio Narvaez partial coherence interferometry was compared to immersion ultrasound and the results showed similar refractive outcomes with both modalities. In that study they also concluded that ultrasound is irreplaceable especially when it comes to eyes with dense media opacities.

In a study inter-observer and intra-observer variability was estimated with the use of IOL master measurements by Annette et al12 and they concluded that IOL master or partial coherence interferometry gives very reliable results and it is not observer dependent. On the other hand if comparison of experience variability in biometry is compared, another study showed that technicians with higher experience have lower difference and lower variability in difference between partial coherence interferometry and applanation ultrasound13. This is supported by our study as well because author also has very good experience in biometry. A previous study has also shown that applanation ultrasound results in measuring shorter axial lengths because of obvious indentation of corneal surface14.

In a previous study they have mentioned that ultrasound A-scan although is the most commonly used method for the measurement of the axial length but it has its limitation as ultrasound probe comes into contact with the corneal surface and causes indentation of the surface thus resulting in shorter measurements as compared to the non contact partial coherence interferometry 14,15. The measurements in their study were 23.35mm (SD 1.81mm) and 23.55mm (SD 1.76 mm) with contact ultrasound and laser interferometry respectively which are comparable to the results of our study.

Simon Raymond et al 16 compared mean absolute error for both techniques and concluded that there was no clinical difference between the two techniques in terms of refractive outcome. The results of our study didn’t show any significant difference between the two techniques but laser interferometry was better than ultrasound A-scan in terms of improved accuracy.

R. Goyal et al 15 did a comparison between A-scan and laser interferometry in terms of axial length and their results show that axial length calculated by A-scan had lower values as compared to those calculated by IOL master. On the other hand in this study we adjusted by taking the final spherical equivalent as the deciding factor thus suggesting the accuracy of calculation of axial length. In contrast to them in our study the difference in terms of refractive outcome was not statistically significant whereas only minor difference was noted in postoperative refractive errors.

CONCLUSION

It can be concluded by the results of this study that even though difference between the two modalities is not statistically significant in terms of refractive outcome but IOL master is slightly more accurate as compared to ultrasound B scan. Moreover ultrasound B scan is highly dependent on the experience of the technician.

Author’s Contribution:
Concept & Design of Study:    Muhammad Jahan Zaib Khan
Drafting:                        Mohammad Asad Faraz
Data Analysis: Abdul Ghafoor
Revisiting Critically: Muhammad Jahan Zaib Khan, Mohammad Asad Faraz
Final Approval of version: Muhammad Jahan Zaib Khan

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

REFERENCES

Comparison Between Bipolar Diathermy and Silk Ligation Technique During Tonsillectomy
Muhamad Saleem Sheikh, Mohammad Sharif Shahid, Sanaullah Bhatti and Mohammad Hassan Nisar

ABSTRACT

Objective: Comparison of post operative hemorrhage and operative time by using diathermy and silk ligation during tonsillectomy for intra operative hemorrhage control, in Pakistan.

Study Design: Randomized controlled trail study.

Place and Duration of Study: This study was conducted at the Otorhinolaryngology Department of Nishtar hospital, Multan from June 2016 to December 2018.

Materials and Methods: Patient selection was in accordance with inclusion and exclusion criteria. Two groups A and B were made and patients were randomly allotted the group. Intra operative hemostasis was done by bipolar diathermy and suture ligation in group B and A respectively. SPSS software was utilized for comparison and analysis of data.

Results: Younger patients below the age of 15 constituted the majority of patients in both group A (54.70 percent) and group B(55.56 percent). In our study, males were predominant (n=167) and the rest (n=67) were females. Use of bipolar diathermy cut the time of operation to almost half in the group B compared to the use of silk ligation as hemorrhage control in group A and that difference is statistically significant with the p value of less than 0.0001. In contrast to the intra operative time benefit, use of bipolar diathermy associates with much higher incidence of secondary hemorrhage(n=12 in group B) than suture ligation (n=03)and this incidence was statistically significant (p= 0.016).

Conclusion: Though it is time consuming but use of silk ligation is safer and associated with less chances of post operative secondary hemorrhage compared to diathermy, when used in hemostasis during tonsillectomy.

Key Words: Post operative secondary hemorrhage, tonsillectomy, bipolar, silk ligation, diathermy, time of operation.

INTRODUCTION

Tonsillectomy stands to be one of the ancient, controversial and a common childhood surgical procedure¹. Recent revolution of technology has led to an ongoing debate about the best method, technique and instruments used in tonsillectomy. Out of many parameters like duration of procedure, easy availability of instruments, post op pain, hospital stay, control of haemorrhage is a major parameter used to distinguish the best technique available²,³. Despite enjoying a probable distinguished position in body immune system in childhood, recurrent infection, apnea, enlarge size causing hindrance in swallowing, speech, breathing and Eustachian tube dysfunction leave us with the only choice of tonsillectomy³,⁴. After narration of recent technique of dissection by Worthington - Waugh and diathermy(electro-dissection) by Remington-Hobbs for tonsillectomy, we have indulged in to an ongoing discussion about the best technique²,⁵,⁶. Though harmonic scalpel, cryosurgical technique, electrocautery, coblation, plasma mediated ablation, debrider and laser use in the tonsillectomy have aided to the ongoing debate of best technique but cold dissection snare with ligation for haemorrhage control and bipolar diathermy enjoys the reputation of being most debated techniques⁷,⁹. Though tonsillectomy is a simple and common procedure but still it is categorized as major surgical procedure owing to the risk of postoperative haemorrhage and anaesthesia complications⁸. The intraoperative and postoperative considerable loss of blood is reported in up to 18% and 10% of cases respectively¹¹. Mortality in tonsillectomy, rarely reported, is related mostly to the haemorrhage¹². Diluted adrenaline, silver nitrate and tannic acid have been used tropically for the containment of...
postoperative bleeding\textsuperscript{13}. EACA (epsilon amino caproic acid) is associated with considerable decrease in intraoperative blood loss\textsuperscript{14}. Moreover, the fear of life threatening blood loss during surgery has led us to use bipolar diathermy, laser, ionic cobalation and cryosurgery.

**MATERIALS AND METHODS**

After approval of ethical committee, study was conducted in otorhinolaryngology department of Nishtar hospital, Multan extending from June 2016 to December 2018. A total number of 234 patients of 5 to 35 years of age were selected who were admitted in ENT department with chronic tonsillitis. Patients with chronic tonsillitis who had at least 4 acute exacerbations in a year and those with hypertrophic tonsils causing obstructive symptoms were included in our study. Patients with acute tonsillitis, acute respiratory infection, bleeding disorders, uncontrolled medical illness, eagle syndrome, malignancy and those who were not willing to be included in study were excluded. Proper ENT examination and baseline investigations (like complete blood count, viral markers by screening, PT and APTT, x-ray nasopharynx, ECG) were done for each patient. After informed consent, group A and B were made and patients were randomly allotted these two groups. General anesthesia was used in all the patients undergoing tonsillectomy. Suture ligation was used in group A and bipolar diathermy in group B for hemostasis during tonsillectomy. Both groups were observed post-operatively and follow up was done after 2 weeks. All the information (mean operative time, complain of secondary hemorrhage) was recorded on a pre-designed Performa. SPSS software was utilized for comparison and analysis of data. Frequency and percentage was calculated for categorical variables. Stratification was used to control age and gender like effect modifiers and Chi-square test was applied to see effect of these on secondary hemorrhage and t test was applied to see their effect on mean operative time. P value of < 0.05 was considered significant.

**RESULTS**

Age range in this study was from 5 to 35 years with mean age of 13.84 ± 5.83 years. The mean age of patients in group A was 13.58 ± 5.32 years and in group B was 12.97 ± 5.75 years. As shown in table 1, younger patients of less than 15 years of age constituted a majority of patients 129 (55.13%) with a decline in number of patients in older age groups. Male were predominant (n=167, 71.37%) compared to females 67 (28.63%) with the ratio of 2.49:1(Figure 1).

Use of bipolar diathermy cut the time of operation to almost half in the group B compared to the use of silk ligation as hemorrhage control in group A and that difference is statistically significant with the p value of less than 0.0001 (figure 2). In contrast to the intra operative time benefit, use of bipolar diathermy associates with much higher incidence of secondary hemorrhage (n=12 in group B) than suture ligation (n=03) and this incidence was statistically significant (p= 0.016) as shown in Figure VII. Stratification of age and gender respectively has shown stratification of age and gender with respect to secondary hemorrhage in both groups.

**Table No.1: Age distribution for both groups (n=234):**

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Group A</th>
<th>Group B</th>
<th>Total (n=234)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of patients</td>
<td>%age</td>
<td>No. of patients</td>
<td>%age</td>
</tr>
<tr>
<td>5-15</td>
<td>64</td>
<td>54.70</td>
<td>65</td>
</tr>
<tr>
<td>16-25</td>
<td>33</td>
<td>28.21</td>
<td>34</td>
</tr>
<tr>
<td>26-35</td>
<td>20</td>
<td>17.09</td>
<td>18</td>
</tr>
<tr>
<td>Mean ± SD</td>
<td>13.58 ± 5.32</td>
<td>12.97 ± 5.75</td>
<td>13.84 ± 5.83</td>
</tr>
</tbody>
</table>

**Figure No.1: Graph of patients according to Gender (n=234)**

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Operative Time in minutes</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>29.45</td>
<td>9.71</td>
</tr>
<tr>
<td>Group B</td>
<td>16.37</td>
<td>4.38</td>
</tr>
</tbody>
</table>

**Table No.2: Mean Operative Time in both groups**

p-value <0.0001 which is statistically significant.
DISCUSSION

To minimize the morbidity and complications associated with tonsillectomy, lot of techniques have been developed each with a unique set of benefits and disadvantages. Despite of these benefits, no single technique has enjoyed the title of being universally acceptable. The variability of operating time, intra as well as post operative hemorrhage, hospital stay, postoperative pain and resumption of routine activities are the set points and basis for the evaluation of different techniques and topic of debate for research purposes.

Our present study was done for the purpose of comparing ligation and bipolar diathermy in contrast of time consumption in operation and risk of secondary hemorrhage. Moreover, it also shed a light on age distribution of tonsillectomy and gender distribution. Younger patients of less than 15 years of age constituted a majority of patients 129 (55.13%) with a decline in number of patients in older age groups, in this study. As far as gender distribution was concerned, 71.37% were male and 28.63% were females with ratio of 2.49:1. In comparison to our study, Sheikh et al has reported majority of the tonsillectomies in the same age distribution but her findings regarding gender distribution showed higher incidence in females (57.5%) compared to males. Similar to our study, Khan AR et al reported high incidence of tonsillectomy in males (72.22%) and he attributed this higher incidence with possibility of male dominating society.

In the present study, Use of bipolar diathermy cut the time of operation to almost half in the group B compared to the use of silk ligation as hemorrhage control in group A and that difference is statistically significant with the p value of less than 0.0001. Pang et al, Kirazli et al, Silvera et al, Raut et al and Blomgren et al reported that electro dissection tonsillectomy was associated with considerable reduction in operative time owing to its potential of simultaneous dissection of tonsils with coagulation of bleeding points. In contrast to our study, studies conducted by Kujawski and Lasaleta et al showed no significant difference between operating time of both groups.

In our current study, In contrast to the intra operative time benefit, use of bipolar diathermy associates with much higher incidence of secondary hemorrhage (n=12 in group B) than suture ligation (n=03) and this incidence was statistically significant (p = 0.016). In contrast to our study, Pang YT and Stephen O’Leary et al concluded that difference between the post operative hemorrhage of both groups had no statistical significance. However, Gendy S, Lowe D et al, Raut et al, Weimert et al and Tay H reported a considerably increased risk of secondary hemorrhage in electro dissection (diathermy) group of tonsillectomy compared to the cold dissection group. Frequent touch, high power and increase application time leading to excessive thermal damage might give a clarification of association of diathermy with increase secondary hemorrhage.

CONCLUSION

In tonsillectomy, electro dissection (bipolar diathermy) use for hemostasis is a fast technique associated with significant decrease in operative time compared to the silk ligation technique. But as far as the chances of secondary hemorrhage are concerned, a significant rise was seen in bipolar diathermy group compared to silk ligation group. So, trainee should also master the technique of silk ligation in tonsillectomy.

Author’s Contribution:
Concept & Design of Study: Muhamad Saleem Sheikh
Drafting: Mohammad Sharif Shahid
Data Analysis: Sanaullah Bhatti, Mohammad Hassan Nisar
Revisiting Critically: Muhamad Saleem Sheikh, Mohammad Sharif Shahid
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Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES


Clinical Experience with the Use of a Handheld Doppler in the Detection of Cutaneous Perforators and its Application and Reliability in Pre-Operative Planning of Perforator Based Flaps

Imran Adeel¹, Ghazanfar Ali³, Muhammad Imran² and Manqoosh ur Rehman²

ABSTRACT

Objective: To determine the accuracy & reliability of handheld Doppler in preoperative planning of a perforator based flap.

Study Design: Descriptive case series study.

Place and Duration of Study: This study was conducted at the Department of Orthopaedics and Plastic Surgery, Multan Medical & Dental College/ Ibne Siena Hospital & Research Institute, Multan from July 2018 to Jan 2019.

Materials and Methods: A total of 25 patients with skin & soft tissue defects were included in the study. A handheld Life Dop Doppler with an 8 MHz probe was used to detect the cutaneous perforators pre-operatively while planning a perforator based flap and its results were correlated with intra-operative actual perforator location.

Results: A total of 71 perforators were marked for perforator based flaps in 25 patients, 55 in lower limbs, and 16 in upper limbs. Out of 55 lower limb perforators, 47 were correct, 3 were false positive & 5 were false negative. Out of 16 upper limb perforators, 13 were correct, 1 was false positive & 2 were false negative.

Conclusion: Despite of the limitations associated with handheld Doppler, in selective patients, it is still a simple & reliable option in the planning of perforator based flaps for skin & soft tissue reconstructions.

Key Words: Handheld Doppler, Perforator based flaps, Cutaneous perforators, Reconstructive surgery

INTRODUCTION

Perforator flaps have gained much respect and popularity over the last few years. They have now become an important tool and indispensable part in the armamentarium of a reconstructive surgeon dealing with complex soft tissue defects related to extremity trauma and orthopaedics.¹,4 The major advantages of perforator based flaps are preservation of main vessel and underlying muscle, decrease in the donor site morbidity and good color and texture match.⁵

These flaps can be used either as pedicle flaps or as free flaps in the reconstruction of local, regional or distant skin and soft tissue defects. ⁶,⁷ Because of the variable vascular anatomy between individuals, a safe planning of a perforator flap requires an accurate preoperative assessment of perforators. ¹ It also helps in facilitating flap harvest and reducing the operative time.²,⁸,⁹ Various tools are available in preoperative assessment of vascular perforators with variable advantages and disadvantages. These include hand held Doppler (HHD),¹,²,⁸,¹⁰-¹² Color duplex sonography (CDS),¹,²,¹²,¹³ Digital subtraction angiography (DSA),¹,² Computed tomography angiography (CTA)¹⁴-¹⁸ and Magnetic resonance angiography (MRA)¹,²,⁸,¹⁰. Except for the hand held Doppler (HHD), rest of the methods are costly and time consuming, requiring expertise to perform and interpret and cannot be used Intra-operatively.² Another issue associated with these advanced tools is their easy availability as they are not readily available in all centers in our part of the world. Hand held Doppler (HHD) is no doubt one of the most commonly used methods in the detection of vascular perforators preoperatively.⁷ It is an inexpensive, readily available tool that doesn’t require much expertise to perform and interpret and it can be used Intra-operatively.¹,²,⁸ The main drawback associated with the
use of hand held Doppler is that it only detects perforators to a depth of 20mm only.7,9,10 Because of this issue, in areas where perforators are deep, its reliability is decreased. Moreover it does not provide much information regarding the flow in a perforator and its caliber.

The objective of this study is to determine the accuracy and reliability of handheld Doppler in preoperative detection of a cutaneous vascular perforator and its correlation with intra-operative actual perforator location while planning and harvesting a perforator based flap in the reconstruction of skin and soft tissue defects.

MATERIALS AND METHODS

This descriptive case series study was carried out in the Departments of Orthopaedics and Plastic Surgery, Multan Medical & Dental College/Ibne Siena Hospital & Research Institute, Multan from July 2018 to Jan 2019 for duration of six months. Nonprobability purposive sampling is used. Both males and females patients of the age 15-60 years were included in the study.

Inclusion Criteria: Any patient of the age range of 15-60 years with skin & soft tissue defect without any co morbidity and congenital anomaly

Exclusion Criteria: Any patient having any co morbidity or with congenital anomaly

A total of 25 patients with skin & soft tissue defects in upper or lower limbs, fulfilling the inclusion and exclusion criteria were included in the study. A prior informed verbal & written consent for the procedure was taken from all the patients. All the procedures were done by the main author and the procedure was explained to the patients prior to commencement of procedure. A handheld LifeDop Doppler with an 8 MHz probe was used to detect the cutaneous perforators pre-operatively while planning a perforator based flap and its results were correlated with intra-operative actual perforator location. (Figure-1) The results were analyzed and stratified according to the age, gender and outcome measurements.

RESULTS

25 patients were included in the study. Results were stratified according to age, gender and outcome measurements. According to age stratification, 8 were between 15-30 years of age (32%), 10 were between 31-45 years (40%) and 7 were between 46-60 years (28%) with a mean age of patients was 36.32 years. (Table-1) Out of 25 patients, 19 were males (76%) and 7 were females (24%). (Table-2) A total of 71 perforators were marked, out of which 16 were in the upper limb (22.5%) and 55 were in the lower limb(77.5%). Outcome was measured in terms of number of correct results, number of false positive and false negative results and positive predictive value. Out of total 71 perforators,60 were detected correctly, 4 were false positive and 7 were false negative, with a sensitivity of 89.55% and positive predictive value of 93.75%. Out of 55 lower limb perforators, 47 were detected correctly, 3 were false positive and 5 were false negative with a sensitivity of 90.38% and positive predictive value of 94%. Out of 16 lower limb perforators, 13 were correct, 1 was false positive and 2 were false negative with sensitivity of 86.67% and positive predictive value of 92.85%. (Table-3)

Figure-1: A: Perforator detection for anterolateral thigh flap B: Perforator detection for posterior interosseous artery flap C: Perforator detection for reverse sural flap
Table No.1: Summary of age distribution of patients

<table>
<thead>
<tr>
<th>Age Groups (Years)</th>
<th>Correct n (%)</th>
<th>False Positive n (%</th>
<th>False Negative n (%)</th>
<th>Sensitivity (%)</th>
<th>PPV (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-30 years</td>
<td>8 (32%)</td>
<td>3 (12%)</td>
<td>5 (20%)</td>
<td>90.38%</td>
<td>94%</td>
</tr>
<tr>
<td>31-45 years</td>
<td>10 (40%)</td>
<td>1 (4%)</td>
<td>2 (8%)</td>
<td>86.67%</td>
<td>92.85%</td>
</tr>
<tr>
<td>46-60 years</td>
<td>7 (28%)</td>
<td>1 (4%)</td>
<td>3 (12%)</td>
<td>89.55%</td>
<td>93.75%</td>
</tr>
</tbody>
</table>

Table No.2: Summary of gender distribution of patients

| Gender | Male | 19 (76%) | Female | 6 (24%) |

Table No.3: Summary of results of perforators in upper and lower limbs

<table>
<thead>
<tr>
<th>Site</th>
<th>Correct n (%)</th>
<th>False Positive n (%)</th>
<th>False Negative n (%)</th>
<th>Sensitivity (%)</th>
<th>PPV (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Limb Perforators (n=55)</td>
<td>47 (85.4)</td>
<td>3 (5.4)</td>
<td>5 (9)</td>
<td>90.38%</td>
<td>94%</td>
</tr>
<tr>
<td>Lower Limb Perforators (n=16)</td>
<td>13 (81.2)</td>
<td>1 (6.2)</td>
<td>2 (12.5)</td>
<td>86.67%</td>
<td>92.85%</td>
</tr>
<tr>
<td>Total Perforators (n=71)</td>
<td>60 (84.5)</td>
<td>4 (5.6)</td>
<td>7 (9.8)</td>
<td>89.55%</td>
<td>93.75%</td>
</tr>
</tbody>
</table>

*Positive Predictive Value

DISCUSSION

The preoperative identification of a cutaneous vascular perforator is the first and one of the most important step in the planning of perforator based flaps.1,2 Multiple tools are available for the detection of for preoperative detection of cutaneous perforators.5 These include handheld Doppler, Color duplex sonography, Digital subtraction angiography, Computed tomography angiography and Magnetic resonance angiography.2,5,8 Among the above mentioned available tools, Handheld Doppler is one of the most commonly used options in detecting a cutaneous perforator while planning a perforator based flap. Many studies are available to assess the reliability and accuracy of handheld Doppler in preoperative planning of a perforator flap and its comparison with other available tools for perforator assessment with variable results.

Khan and Miller in one study, has shown it to be a reliable option in the planning of perforator flaps in extremities with high predictive value but unacceptably high false positive results for smaller caliber vessels.1 Taylor GI et al have indicated that it is a simple and reliable option and provides a useful link between anatomical dissecting room and the operation theatre.9 Blondeel and Beyens G, et al has labeled it as a handy and inexpensive tool but show false positive results of perforator detection in axial vessels running very superficially.6 They found color duplex scanning as superior to handheld Doppler in providing detail information about perforators. Comparative studies of color duplex scanning, digital subtraction angiography, computed tomography angiography and magnetic resonance angiography with handheld Doppler, show superiority of these advance tools over handheld Doppler.2,5,8,20 All these tools are superior to Handheld Doppler in terms of perforator detection, flow characteristics, vessel diameter etc. The drawback associated with these tools is their lack of easy availability, expensiveness, time consuming and expertise to perform and interpret them. Another problem with these tools is their inability to use them intra-operatively by the reconstructive surgeon.

Despite of its all limitations drawback, handheld Doppler is still one of the most common choice of reconstructive surgeon in the identification and detection of a cutaneous perforator while planning a perforator based flap pre-operatively. It is easily available, portable, and cost effective and has a high positive predictive value.1,3,9,10,20 Another advantage of handheld Doppler is its Intra-operative use which makes it a handy choice for the reconstructive trauma surgeons.2,7 But because of the drawback associated with its use, it cannot be used as the single diagnostic tool for perforator detection.

CONCLUSION

Handheld Doppler is a simple and reliable option in identifying cutaneous perforators due to its simplicity, easy availability, portability and high positive predictive value. It can be used as a useful tool in preoperative planning of perforator based flaps for skin and soft tissue defects reconstruction. Because of its limitations in providing detail information about the perforator characteristics and false positive and false negative results, we suggest its cautious use in selective patients.

Author’s Contribution:
Concept & Design of Study: Imran Adeel
Drafting: Ghazanfar Ali
Data Analysis: Muhammad Imran, Manqoosh ur Rehman
Revisiting Critically: Imran Adeel, Ghazanfar Ali
Final Approval of version: Imran Adeel

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

REFERENCES

Is Visual Inspection with Acetic Acid Valid for Diagnosing Early Cervical Neoplasia

Shahida Jamal1, Maryam Batool2, Nargis Shabana3, Madiha Khadim2, Maryam Zubair4 and Shaheen Aslam5

ABSTRACT

Objective: To compare the sensitivity and specificity of visual inspection of the cervix with 5% acetic acid to Pap smear by using the colposcopically directed biopsy as Gold Standard in the diagnosis of cervical cancer and assessing the concordance of VIA with colposcopy.

Study Design: Cross sectional validation study

Place and Duration of Study: This study was conducted at the Gynaecology and Obstetrics Department of Holy Family Hospital Unit-1 from 1st Nov. 2014 to 30th April 2015.

Materials and Methods: Females fulfilling the inclusion criteria were selected in the study from outpatient department. Bias was controlled by strictly following the inclusion and exclusion criteria.

Results: The sensitivity of VIA was 91.67% and of Pap smear was 81.81%. Corresponding specificities were 97.44% and 96.20%. The PPV of VIA was 84.62% versus 75.00% for Pap smear. The NPV of VIA was 98.70% versus 97.44% for cytology. Overall VIA demonstrated an accuracy of 96.67% as compared to 97.77% for cytology.

Conclusion: In woman undergoing screening for Pre-invasive disease of Cervix, visual inspection using 5% acetic acid was found to be more sensitive and has a similar accuracy as compared to Pap smear.

Key Words: VIA, Cervical intraepithelial neoplasia, pap smear

INTRODUCTION

Worldwide Carcinoma of cervix is second commonest cancer among women1. It accounts for about 473,000 new cases diagnosed and 253,500 deaths every year2. Approximately 80% of cervical cancer occurs in under developed countries where it accounts for 22.8% of female cancer3 and among them 75% present at an advanced stage3. Premalignant state of carcinoma cervix is cervical intraepithelial neoplasia. Severe form of the cervical dysplasia leads to carcinoma cervix in 10 years in 18% of cases and 36% at 20 years4. Pap smear sensitivity ranges from 30-87% and specificity ranges from 86-100%5. VIA has emerged as an alternative for use in low resource settings. It is performed by trained health professionals and carries the benefit of being convenient, time saving, economical and requires no laboratory6,7.

VIA has low specificity and high false positive findings leading to undue stress and further investigations; however it has very low [0.9 %] false negative8. The sensitivity of VIA is 95%9 and specificity of VIA is 77.6%10. Prevalence of cervical cancer is 8% of all cancer in women11. Though the incidence of cervical cancer has decreased in industrialized countries in the past twenty years, it still remains a major problem in the developing countries. Approximately 80% of cervical cancers in under developed countries where it accounts for 22.8% of female cancer11 and among them 75% present in advance stage3. Among gynecological malignancies, cervical cancer is the leading cause of death.12 Squamous cell carcinoma is a preventable disease arising from high grade squamous epithelial lesions or cervical intraepithelial neoplasia grade 2 and 3.13 Human Papilloma virus infection leads to premalignant change in the cervical epithelium (Cervical intraepithelial neoplasia) which has the potential to turn malignant without treatment14. Smoking and long use of oral contraceptive pill have also been recognized as risk factor. Immuno-compromised women are at great risk15. Other Risk factors for cervical cancer include early age at first intercourse, multiple male sex partners, a history of sexually transmitted diseases, and low socio-economic status.16 A study carried out in Nepal supports VIA as an alternative method of screening for cervical cancer17.
VIA is a relatively simple procedure. Acetic acid is used to enhance and “mark” the aceto white change of a precancerous lesion or actual cancer. Differences in precancerous cell proteins make the abnormal cells temporarily appear white when exposed to vinegar. A study carried out in Lahore revealed that sensitivity of VIA was 93% and of pap smear was 83%, corresponding specificity were 90 and 97%, which conclude that VIA is more sensitive as compare to pap smear. In developing countries VIA is an effective method to achieve fairly accurate and moderately reproducible results. A study carried out in Nepal support VIA as an alternative method of screening for cervical cancer. In comparison, a study carried out in Honduras underscore the need to promote alternative technologies for screening in low resource settings. Similarly a study in Belgium showed the specificity of VIA less than Pap smear and promoted pap smear as a method of screening for cervical cancer.

In this study, a Cross sectional validational study was done in OPD clinic of Gynae Unit-I Holy Family Hospital Rawalpindi. Sample size is 90 by using WHO sample size calculator. All married female of 20-60 yrs of age attending the gynecology clinic were included in the study and unmarried female, women who already had hysterectomy or taking treatment of cervical cancer in the past and pregnant females and women having active vaginal bleeding were excluded. Proper informed written consent was taken. The test results was divided in two categories, visual inspection with 5% acetic acid positive and visual inspection with 5% acetic acid negative.

RESULTS

Mean age was 48 as shown in table 3. Mean SD for parity was more than para 4 as shown in table 2. Out of 13 patients who were positive for cervical intraepithelial neoplasia on VIA, 11 turned out to be positive on Biopsy also and 2 were negative. 77 patients were negative on VIA and out of these 77 one (01) found positive on Biopsy.

On Pap smear 12 found positive on Pap smear out of them 9 turned out to be positive on Biopsy and 3 were negative. 78 found negative on Pap smear and 2 turn out to be positive on Biopsy.

By analyzing the above data following result were calculated.

### Table No.1a: Sensitivity table

<table>
<thead>
<tr>
<th></th>
<th>Colposcopically indicated Biopsy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Visual Inspection with 5% Acetic Acid</strong></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>a (TP)</td>
</tr>
<tr>
<td>True positive</td>
<td>False</td>
</tr>
<tr>
<td></td>
<td>c (FN)</td>
</tr>
<tr>
<td>False negative</td>
<td>True</td>
</tr>
</tbody>
</table>

### Table No.1b: Specificity table

<table>
<thead>
<tr>
<th></th>
<th>Colposcopically indicated Biopsy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pap Smear</strong></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>a (TP)</td>
</tr>
<tr>
<td>True positive</td>
<td>False</td>
</tr>
<tr>
<td></td>
<td>c (FN)</td>
</tr>
<tr>
<td>False negative</td>
<td>True</td>
</tr>
</tbody>
</table>

Sensitivity: \((\frac{a}{a+c}) \times 100\) or \((\frac{TP}{FN + TP}) \times 100\)
Specificity: \((\frac{d}{b+d}) \times 100\)
Positive Predictive Value: \((\frac{a}{a+b}) \times 100\)
Negative Predictive Value: \((\frac{d}{c+d}) \times 100\)

### Demographic characteristics

#### Table No.2: Description statistics of parity of the patient

<table>
<thead>
<tr>
<th>Parity</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>nullipara</td>
<td>4 (4)</td>
</tr>
<tr>
<td>p1-p2</td>
<td>17 (19)</td>
</tr>
<tr>
<td>p3-p4</td>
<td>37 (41)</td>
</tr>
<tr>
<td>greater than P4</td>
<td>32 (36)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>90(100)</td>
</tr>
</tbody>
</table>

#### Table No.3: Description statistics of age of the patients

<table>
<thead>
<tr>
<th>Age Groups (yrs)</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30</td>
<td>5 (6)</td>
</tr>
<tr>
<td>31-40</td>
<td>21 (23)</td>
</tr>
<tr>
<td>41-50</td>
<td>50 (56)</td>
</tr>
<tr>
<td>51-60</td>
<td>14 (16)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>90(100)</td>
</tr>
</tbody>
</table>

### Comparison of Screening Tests

#### Table No.4: VIA Test with Biopsy

<table>
<thead>
<tr>
<th>Count</th>
<th>Positive</th>
<th>Negative</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIA positive</td>
<td>11</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Negative</td>
<td>1</td>
<td>76</td>
<td>77</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>12</td>
<td>78</td>
<td>90</td>
</tr>
</tbody>
</table>
DISCUSSION

It had been shown by EL ALL HAS et al\textsuperscript{23} that in developed countries, with effective and extensive screening preneoplastic disease is usually asymptomatic precursor lesion of cervical cancer, making it 100% preventable. However cervical cancer prevails in developing countries, 80% cases are diagnosed at advanced stage. Worldwide cervical cancer causes 250,000 deaths per year as shown by Shafi MI \textsuperscript{18}. This situation is complicated by the fact that in underdeveloped countries like Pakistan 75% presents with an advanced stage, which is the converse of situation in the developed world where 75% present early and cure can be expected. As cervical cancer is a preventable disease, screening should have a direct effect on incidence and mortality from this condition in Pakistan.

A combination of colposcopy and cervical smear is likely to improve the screening sensitivity in Pakistan\textsuperscript{22} therefore, there is an urgent need for the implementation of cervical cancer screening program. The American cancer society recommends that all women should begin cervical cancer screening after 3 years of beginning coitus.\textsuperscript{26} Khan M S \textsuperscript{25} et al showed that average age of prevalence of positive cytology is around 43 years in Pakistan, while some studies in the west showed a younger average age. This fact was also observed in my study and the mean age for prevalence of precancerous cervical lesion was 43 years. This represent that cervical intraepithelial neoplasia is more prevalent in 4\textsuperscript{th} decade of life. The younger age in the west for early cervical neoplasia is probably because of early age at first intercourse, multiple sexual partners, HIV and HPV infection. Numerous studies of epidemiology of cervical cancer have shown strong association with marital and sexual partners. It is well established that the age in which the patient started sexual activity, the number of sexual partners, the number of births and the age in which the 1\textsuperscript{st} birth occur are factors that influence the natural evolution of this disease and should be considered as an important background.\textsuperscript{27}

High parity has long been associated with an increase risk of cervical cancer.\textsuperscript{28, 29} I found a direct association between the number of full term pregnancies and CIN. Mean parity was more than para 4.

A study by K. Vadehra, R. Jha and a study by Rana. T, Zia A showed validity of VIA in diagnosis of early cervical neoplasia by measuring outcomes like accuracy, sensitivity specificity and predictive values of VIA in comparison with Pap smear. My study is comparable to the study by Rana T, Zia A, Sher s\textsuperscript{12}, and study by Vadehra K., Jha R\textsuperscript{13}, with regard to method of test performance and results. In my study a high sensitivity of about 91.67% was observed comparable to the findings of Rana T\textsuperscript{12} which showed sensitivity of 93%.

In this study, we have measured the performance of VIA and cytology as a means of identifying the cervical cancer precursors in a low resource setting. As compared to Pap smear VIA has the advantage of being simple and easy-to-learn approach. Moreover VIA has low startup and ongoing costs. It integrates well with the primary health care services. VIA gives the facility of see and treat due to immediate results at one stop clinic.

VIA has the disadvantages of higher referral and potential of over-treatment due to its moderate specificity. There is clear need for training methods and quality assurance to standardize the reporting procedure. Drawback of my study was less number of patients because the duration of study period was short so I cannot implement my results on whole population of Pakistan.

CONCLUSION

VIA is quite accurate in diagnosis of early cervical neoplasia and it has a high sensitivity for detection of lesions. The interobserver variability is the limiting factors in the use of this method. However, it is an effective method in the management of premalignant cervical disease. I would recommend that this simple test should be learned by all postgraduate trainees and gynecologists. VIA clinics should be integral part of gynaecological outpatient department in every hospital.

Author’s Contribution:
Concept & Design of Study: Shahida Perveen
Drafting: Madiha Khadim
Conflict of Interest: The study has no conflict of interest to declare by any author.

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24. Langmar Z, Nemeth M, Kornya L. Cervical cancer screening in hungry, epidemiological, historical and
Efficacy and Safety of Rivaroxaban as Thromboprophylaxis after Arthroplasty of the Hip or Knee

Muhammad Imran Haider¹, Muhammad Iqbal Buzdar¹, Kashif Siddiq¹, Muhammad Ali¹, Muhammad Khizer Hayat Makki² and Muhammad Arif¹

ABSTRACT

Objective: to investigate efficacy and safety of rivaroxiban as thromboprophylaxis in major orthopedic surgeries.

Study Design: Non randomized experimental trial study

Place and Duration of Study: This study was conducted at the department of orthopedic surgery, Bahawalpur Victoria Hospital, Bahawalpur, from April 2017 to April 2018.

Materials and Methods: Adult patients of age limit from 20 to 45 years who were selected for hip and knee arthroplasty and who were given Rivaroxiban 10 mg were included in the study. Three main outcome variables were investigated: VTE confirmed through imaging, major bleed and death. SPSS version was used to analyze data. P value ≤ 0.05 was considered as significant.

Results: A total number of 32 patients included in this study. Our results show that no patient was died during rivaroxiban treatment in our study duration but VTE was observed in 6% of cases and major bleed was observed in 15% of cases. Except these major variables mean age, hemoglobin, platelets, PT, APTT, urea, creatinine and bilirubin of the patients was 45.50±0.71 years, 103.51±2.12 g/l, 227.0±0.21×10⁹/l, 13.50±2. 14s,23.50±4.51s,4.50±1.78mmol/l, 68.0±2.83 µmol/l and 11.50±2.57 µmol/l respectively

Conclusion: Results of our study revealed that rivaroxiban is a safe drug as mortality is zero during its treatment and its is also effective as it’s reduce the incidence of VTE and major bleeding when used as thromboprophylaxis during surgery of hip arthroplasty and knee arthroplasty.

Key Words: Rivaroxaban, Thromboprophylaxis, Arthroplasty, Efficacy, Safety.

INTRODUCTION

Deep venous thrombosis DVT is a serious complication after orthopedic surgeries like hip and knee replacement.³ It may lead to pulmonary embolism which is a more sever condition. After proper thromboprophylaxis with thrombolytic agents like low molecular weight heparin and inhibition with factor Xa, it was reported in previous Meta analysis that 0.5% of cases can be go on after hip arthroplasty and 0.1% after knee arthroplasty.³ After was the reported it was in previous studies that 0.5% of cases can be go on after hip arthroplasty and 0.1% after knee arthroplasty.³ After was the reported it was in previous studies that 0.5% of cases can be go on after hip arthroplasty and 0.1% after knee arthroplasty.

These portions were found before hospital discharge of patients. Among inhibitors of factor Xa, Rivaroxiban is general agent used for prevention of DVT after major orthopedic surgeries. This agent was introduced by national Institute for health and care excellence in year of 2009. Rivaroxiban can be given orally for 35 days after hip replacement surgery and for 14 days after knee replacement surgery.⁶ Use of Rivaroxiban was recommended after four clinical trials in which it was compared with enoxaparin and all these four studies were multicenter.⁷ Results revealed that DVT and PE was occurd in 1.1% and 3.7% after hip arthroplasty and 9.6% and 18.9% after knee arthroplasty. In all these trials Rivaroxiban found to be superior as compared to enoxaparin.⁸ Dose wise comparison of both drugs also find out that Rivaroxiban OD dose is superior to BD dose of enoxaparin.⁹ Results of these four trials were sufficient for recommendation of Rivaroxiban as thromboprophylaxis when major orthopedic surgeries were performed.¹⁰ Studies conducted on this topic were before having their own limitations. Aim of our study is to investigate the safety and efficacy of Rivaroxiban as thromboprophylaxis after hip and knee arthroplasty. Our study is single centered.

MATERIALS AND METHODS

This cross sectional study was conducted in the department of orthopedic surgery, Bahawalpur Victoria...
Hospital, Bahawalpur, from April 2017 to April 2019. Study was started after informed consent from patients and approval from hospital ethical committee. A total number of 32 patients included in this study. Sample size was calculated from WHO calculator for sample size calculations and non probability consecutive sampling technique was used. Adult patients of age limit from 20 to 45 years who were selected for arthroplasty and who were given Rivaroxiban 10 mg were included in the study.

Three primary outcomes were assessed in these patients, VTE confirmed through imaging, no bleeding, major bleeding episodes and death. Major bleeding was defined as fall in hemoglobin less than or equal 20 g/l or 2 pints blood transfusion. This criteria was recommended by control of anticoagulation subcommittee of international society on thrombosis and hemostasis. Return of patients to the theater for reopen and surgical site bleed also labeled under major bleeding. Any other type of bleeding labeled as non major or minor bleeding. Follow up started from the day of discharge from hospital and outcome measured with the end of DVT till last follow up.

Data was analyzed by using SPSS version 24, mean and SD was calculated for numerical variables like age, urea creatinine, bilirubin, PT, APTT and frequency and percentages were calculated for categorical data like gender, VTE, major bleeding, death. Student that test was applied for association of numerical variable and Chi square test used for categorical variables association. P value less than or equal to 0.5 was considered to be significant.

RESULTS
A total number of n=32 patients were included in this study, both gender. Gender distribution revealed as (34.4%) n=11 males and (65.6%) n=21 females. The mean age, hemoglobin, platelets, PT, APTT, urea, creatinine and bilirubin of the patients was 45.70±1.04 years, 105.15±2.12 g/l, 232.72±3.29×10⁹/l, 9.96±1.67 s, 24.66±2.19 s, 4.88±1.82 mmol/l, 66.33±3.03 µmol/l and 11.11±1.22 µmol/l respectively. Hip arthroplasty was observed as (40.7%) n=11. Hypertension, diabetes mellitus, aspirin and anticoagulation was noted as (74.1%) n=20, (11.1%) n=3, (14.8%) n=4, and (0%) n=0 respectively.

No death was recorded for bleed and not bleeds respectively. The differences were statistically insignificant except anticoagulation (p=0.018). (Table 2).

There were (50%) n=1 male and (50%) n=1 female. The mean age, hemoglobin, platelets, PT, APTT, urea, creatinine and bilirubin of the patients was 45.50±0.71 years, 103.51±2.12 g/l, 227.0±0.21×10⁹/l, 13.50±2.14s, 23.50±4.51s, 4.50±1.78mmol/l, 68.0±2.83 µmol/l and 11.50±2.57 µmol/l respectively. Hip arthroplasty was observed as (50%) n=1. Hypertension, diabetes mellitus, aspirin and anticoagulation was noted as (50%) n=1, (50%) n=1, (50%) n=1, and (0%) n=0 respectively.

Table No.1: Patient characteristics, procedural information and Blood results in the inpatient setting

<table>
<thead>
<tr>
<th>Variable</th>
<th>Presence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>45.75±1.04</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>(34.4%) n=11</td>
</tr>
<tr>
<td>Female</td>
<td>(65.6%) n=21</td>
</tr>
<tr>
<td>Procedure</td>
<td></td>
</tr>
<tr>
<td>Hip arthroplasty</td>
<td>(37.5%) n=12</td>
</tr>
<tr>
<td>Knee arthroplasty</td>
<td>(40.6%) n=13</td>
</tr>
<tr>
<td>Medical History</td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td>(68.8%) n=22</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>(12.5%) n=4</td>
</tr>
<tr>
<td>Ischemic heart disease</td>
<td>(12.5%) n=4</td>
</tr>
<tr>
<td>Chronic kidney disease</td>
<td>(9.4%) n=3</td>
</tr>
<tr>
<td>Medication History</td>
<td></td>
</tr>
<tr>
<td>ACEI/ARB</td>
<td>(18.8%) n=6</td>
</tr>
<tr>
<td>Gastric protection</td>
<td>(25%) n=8</td>
</tr>
<tr>
<td>Aspirin</td>
<td>(15.6%) n=5</td>
</tr>
<tr>
<td>Anticoagulation</td>
<td>(3.1%) n=1</td>
</tr>
<tr>
<td>Blood results upon hospital discharge</td>
<td></td>
</tr>
<tr>
<td>Hemoglobin (g/l)</td>
<td>105.1±2.10</td>
</tr>
<tr>
<td>Platelets (×10⁹/l)</td>
<td>232.25±3.49</td>
</tr>
<tr>
<td>PT (s)</td>
<td>10.22±1.79</td>
</tr>
<tr>
<td>APTT (s)</td>
<td>24.53±2.14</td>
</tr>
<tr>
<td>Urea (mmol/l)</td>
<td>4.84±1.71</td>
</tr>
<tr>
<td>Creatinine(µmol/l)</td>
<td>68.89±4.35</td>
</tr>
<tr>
<td>Bilirubin(µmol/l)</td>
<td>11.22±1.18</td>
</tr>
</tbody>
</table>
There were (33.3%) n=10 male and (66.7%) n=20 female. The mean age, hemoglobin, platelets, PT, APTT, urea, creatinine and bilirubin of the patients was 45.76±1.08 years, 105.20±2.09 g/l, 232.60±3.31×10⁹/l, 10.12±1.62 s, 24.60±2.19 s, 4.86±1.75 mmol/l, 66.20±3.01 µmol/l and 11.20±1.21 µmol/l respectively. Hip arthroplasty was observed as (40%) n=12. Hypertension, diabetes mellitus, aspirin and anticoagulation was noted as (70%) n=21, (13.3%) n=4, (13.3%) n=4, and (3.3%) n=1 respectively. No death was recorded for ATE and no ATE respectively. The differences were statistically insignificant except PT (p=0.005). (Table 3).

**Table No.2: Factors associated with bleeding events on treatment or within 48 hours of stopping Rivaroxaban**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bleed (15%) n=5</th>
<th>No Bleed (85%) n=27</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>(60%) n=3</td>
<td>(29.6%) n=8</td>
<td>0.189</td>
</tr>
<tr>
<td>Female</td>
<td>(40%) n=2</td>
<td>(70.4%) n=19</td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td>46.0±1.24</td>
<td>45.70±1.12</td>
<td>0.570</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hip arthroplasty</td>
<td>(40%) n=2</td>
<td>(40.7%) n=11</td>
<td>0.975</td>
</tr>
<tr>
<td>Medical History</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td>(40%) n=2</td>
<td>(74.1%) n=20</td>
<td>0.131</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>(40%) n=2</td>
<td>(11.1%) n=3</td>
<td>0.102</td>
</tr>
<tr>
<td>Medication History</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspirin</td>
<td>(20%) n=1</td>
<td>(14.8%) n=4</td>
<td>0.769</td>
</tr>
<tr>
<td>Anticoagulation</td>
<td>(20%) n=1</td>
<td>(0%) n=0</td>
<td>0.018</td>
</tr>
<tr>
<td>Blood results upon hospital discharge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hemoglobin (g/l)</td>
<td>104.80±2.18</td>
<td>105.15±2.1</td>
<td>0.740</td>
</tr>
<tr>
<td>Platelets (×10⁹/l)</td>
<td>229.80±3.89</td>
<td>232.72±3.29</td>
<td>0.088</td>
</tr>
<tr>
<td>PT (s)</td>
<td>11.60±1.94</td>
<td>9.96±1.67</td>
<td>0.056</td>
</tr>
<tr>
<td>APTT (s)</td>
<td>23.80±2.19</td>
<td>24.66±2.19</td>
<td>0.414</td>
</tr>
<tr>
<td>Urea (mmol/l)</td>
<td>4.60±0.89</td>
<td>4.88±1.82</td>
<td>0.734</td>
</tr>
<tr>
<td>Creatinine (µmol/l)</td>
<td>66.20±3.03</td>
<td>66.33±3.03</td>
<td>0.238</td>
</tr>
<tr>
<td>Bilirubin (µmol/l)</td>
<td>11.80±0.85</td>
<td>11.11±1.22</td>
<td>0.238</td>
</tr>
<tr>
<td>Death</td>
<td>(0%) n=0</td>
<td>(0%) n=0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**DISCUSSION**

In Pakistan our study is first one to plan and investigate the efficacy and safety of rivaroxiban as thromboprophylactic agent in major orthopedic surgeries like hip and knee arthroplasty. No patient was died during Rivaroxiban treatment in our study duration but VTE was observed in 6% of cases and bleed was observed in 15% of cases.

In a study conducted by Eriksson BI et al11 death was reported in 0.3% VTE in 0.2% of patients and major bleeding was occurred in 0.3% of cases, results of this study almost identical to our study. In this study rivaroxiban was compared with enoxaparin and rivaroxiban labeled as more safe and efficacious drug to prevent VTE events after major orthopedic surgeries. This study can be compared with our study.

Another study was conducted on this topic in year 2008 by Kakkar AK et al12 and reported 2% death cases and 6.6 % of major bleeding events with p=0.0001% and confidence interval 95%. In this study death events are much higher and bleeding events are almost same as our study. This trial was conducted on 864 patients who
were given rivaroxiban and in other group 869 patients were given enoxaparin. Safety and efficacy of rivaroxiban was accepted. This study can also be compared with our study.

In another conducted by Michael R et al\textsuperscript{13} death was not reported in any patient and VTE was observed in 1.0% of patients with P=0.01 and absolute risk reduction, 1.6%; 95% CI, 0.4 to 2.8; major bleeding events were observed 0.6%. Results of this trial were also similar to our study, so this study is also comparable with our study.

Turpie AG et al\textsuperscript{14} conducted a study in 2009 and concluded that rivaroxiban is better than enoxaparin in aspects of mortality, VTE and major bleeding. According to his results primary outcome (deep vein thrombosis) was 6.9% which almost equal to our results, secondly major bleeding was reported 0.7%, in another similar study Sindali K et al\textsuperscript{15} also reported that rivaroxiban is effective and safe to reduce VTE and mortality rate after hip replacement and knee replacement surgeries. These two studies also go into the favor of our study.

In a study conducted by Jameson SS et al\textsuperscript{16} reported 0.72 % VTE within 90 days of rivaroxiban treatment, he compared rivaroxiban with low molecular weight heparin. Rivaroxiban have 0.36% pulmonary embolism and heparin have 0.55% PEs with 95% CI and odds ratio 1.52. In another study Patel MR et al\textsuperscript{17} also reported similar findings as VTE occurred in 14.9% of patients and major bleeding occurred in 0.2% of patients.

Furthermore Samama CM et al\textsuperscript{18} and Chandrasekaran S et al\textsuperscript{19} also conducted studies on this topic for evaluation of efficacy and safety of rivaroxiban and reported that rivaroxiban is a better drug for thromboprophylaxis in major orthopedic surgeries like hip and knee replacement as compare to any drug used for this purpose. Conclusion of his observation is also similar as our study.Lassen MR et al\textsuperscript{20} also use rivaroxiban for this purpose but he compare its role between the groups (knee replacement and hip replacement) his observation revealed that there was not a significant difference among the groups about surgical events and VTE and PEs when rivaroxiban is used.

**CONCLUSION**

Results of our study revealed that rivaroxiban is a safe drug as mortality is zero during its treatment and it is also effective as it’s reduce the incidence of VTE and major bleeding when used as thromboprophylaxis during surgery of hip arthroplasty and knee arthroplasty.

**Author’s Contribution:**

Concept & Design of Study: Muhammad Imran Haider

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Frequency of Rebleeding
Between Short Course Terlipressin
(24 Hours) and Usual Course (72 Hours) Terlipressin in
Adult Cirrhotic Patients Presenting with Acute Variceal
Rebleeding

Mehreen Zaman¹, Asif Raza Zaidi², Ali Hyder³, Mahesh Kumar⁴, Joher Amin²
and Kashif Malik²

ABSTRACT

Objective: To compare frequency of rebleeding between short course terlipressin (24 hours) and usual course (72 hours) terlipressin given as an adjunct to conventional EVBL in adult cirrhotic patients presenting with acute variceal rebleeding.

Study Design: A randomized control trial

Place and Duration of study: This study was conducted at the Department of Gastroenterology, Shaikh Zaid Hospital Lahore for One Year from July 2016 to June 2017.

Materials and Methods: 100 cases were included through Non probability consecutive sampling. Patients were randomized to group A or B using lottery method. Written informed-consent was taken from all included patients. Rebleeding was assessed during 5 days of hospitalization (as per operational definition). All data was entered and analyzed using SPSS version 13.0. Chi-square test was used to compare the significant difference in rebleeding in both groups. A p-value of ≤0.05 was considered significant.

Results: The mean age of the patients was 55.16±5.56 years having 58 (58%) male and 42 (42%) female. Before start of treatment, hematemesis was observed in 45 (90%) randomized to short course which was remained in 5 (10%) patients after treatment. Patients randomized to usual course, hematemesis was observed in 36 (72%) cases which was remained in 4 (8%) patients after treatment. Before start of treatment, melena was observed in 42 (84%) randomized to short course which was remained in 5 (10%) patients after treatment. Patients randomized to usual course, melena was observed in 42 (84%) cases which was remained in 4 (8%) patients after treatment which is highly insignificant. After treatment, rebleeding was observed in 5 (10%) randomized to short course while with usual course, rebleeding was observed in 4 (8%) cases. The difference between both groups was highly insignificant (p>0.05).

Conclusion: It was concluded through results of this study that short course terlipressin is equally effective as usual course. Now we can recommend short course for management of variceal bleed to prevent rebleed instead of usual course.

Key Words: Variceal Bleeding, Rebleed, Endoscopic Band Ligation, Terlipressin, Cirrhosis, Hematemesis, Melena, Hypovolemic Shoc

Citation of articles: Zaman M, Zaidi AR, Hyder A, Kumar M, Amin J, Malik K. Frequency of Rebleeding Between Short Course Terlipressin (24 Hours) and Usual Course (72 Hours) Terlipressin in Adult Cirrhotic Patients Presenting with Acute Variceal Rebleeding, Med Forum 2019;30(2):130-133.

INTRODUCTION

Esophageal variceal bleeding (EVB) is a frequent and severe complication of patients with cirrhosis and is characterized by a high mortality and rebleeding rate¹. It occurs in 10–20% of cirrhotic patients per year, occurring in 30% of patients with compensated cirrhosis and 60% with decompensated cirrhosis². The guidelines recommended the use of certain vasoactive drugs, such as terlipressin, octreotide, vaptreotide or somatostatin, given as an adjunct to the main therapy and continued for 3-5 days (72-120 hours)³. Adjuvant pharmacological treatment is the standard of care along with EVL for the control of esophageal variceal bleeding Terlipressin and octreotide are two common agents used as an adjuvant agent in the management of variceal bleeding⁴. The risk of re-bleed
is highest in the first 5 days which is perhaps the reason for recommendation of the vasoactive agents for the same duration of time. Randomized control trial was conducted comparing frequency of rebleeding in patients of acute variceal bleeding receiving usual course of terlipressin for 72 hours with patients receiving short course of terlipressin for 24 hours. Multiple single arm studies are available regarding rebleeding frequency in the usual and short course group. A study shows that the rate of rebleeding was 20% in patients of acute variceal bleed receiving terlipressin for 24 hours. The aim of to compare frequency of rebleeding between short course terlipressin (24 hours) and usual course (72 hours) terlipressin given as an adjunct to conventional EVBL in adult cirrhotic patients presenting with acute variceal rebleeding.

**MATERIALS AND METHODS**

A Randomized control trial was carried out in the inpatient wards of Shaikh Zaid Hospital Lahore. 100 patients presenting with acute variceal hemorrhage having both sex between age 30-60 years with hematemesis (frank blood or coffee ground emesis) and Malena (black tarry stools) were included. Patients were randomized to group A or B using lottery method of allocation using random number technique. Approval of the ethical committee was sought and all ethical considerations were strictly observed. Thorough history was taken and complete physical examination was performed. Routine lab investigations was done to take initial hemostasis and resuscitation. Both groups received the Terlipressin as a bolus of 2 mg followed by 1mg every 6 hours for the first 24 hours and endoscopic variceal band ligation was performed in all patients within 12 hours of admission. Group A: Short course terlipressin (SCT 24 hour group): After the initial 24 h of terlipressin, the patients received “terlipressin dummy” containing 5% dextrose water administered every 6-h intervals for the following 48 h, in a 5 ml pre-filled syringe. Group B: Usual course terlipressin (UCT 72 hour group): The patients continued to receive “active terlipressin” at a dose of 1 mg every 6 h for the following 48 h in a 5 ml pre-filled syringe. All patients were monitor and follow up accordingly to continuous non-invasive cardiac and hemodynamic monitoring including cardiac rhythm, pulse rate, blood pressure, and oxygen saturation. All patients received IV omeprazole 40 mg and prophylactic IV ceftriaxone 2g daily for three days. Antibiotics was stopped if there is no other indication to continue. Statistics: All data was entered and analyzed using SPSS version 13.0. Quantitative data like age was presented by Mean and standard deviation. Qualitative data gender and rebleeding were presented by frequency and percentages. Chi-square test was used to compare the significant difference in rebleeding in both groups. A p-value of ≤0.05 was considered significant.

**RESULTS**

Total 100 patients were enrolled in this study with the mean age of 55.16±5.56 having 58 (58%) male and 42 (42%) female. The male-to-female ratio was 1.4:1. Out of 100, 81 (81%) patients who presented with hematemesis while 84 (84%) patients with melena. Before start of treatment, hematemesis was observed in 45 (90%) randomized to short course while 36 (72%) cases in usual course and the difference was significant. Melena was observed in 42 (84%) randomized to short course while 42 (84%) cases was observed to usual course, difference was highly insignificant (Table 1).

### Table 1: Distribution of Hematemesis & Melena before treatment in accordance with study group.

<table>
<thead>
<tr>
<th>Variables (N=100)</th>
<th>Study group</th>
<th>Total</th>
<th>p-values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Short course</td>
<td>Usual course</td>
<td></td>
</tr>
<tr>
<td>Hematemesis</td>
<td>Yes</td>
<td>45 (90%)</td>
<td>36 (72%)</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>5 (10%)</td>
<td>14 (28%)</td>
</tr>
<tr>
<td>Melena</td>
<td>Yes</td>
<td>42 (84%)</td>
<td>42 (84%)</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>8 (16%)</td>
<td>8 (16%)</td>
</tr>
</tbody>
</table>

### Table 2: Distribution of Melena, Hypovolemic shock, Hematemesis & Rebleeding after treatment in accordance with study group.

<table>
<thead>
<tr>
<th>Variable (n=100)</th>
<th>Study group (N=100)</th>
<th>Total</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Short course</td>
<td>Usual course</td>
<td></td>
</tr>
<tr>
<td>Melena</td>
<td>Yes</td>
<td>5 (10%)</td>
<td>4 (8%)</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>45 (90%)</td>
<td>46 (92%)</td>
</tr>
<tr>
<td>Hypovolemic shock</td>
<td>Yes</td>
<td>4 (8%)</td>
<td>3 (6%)</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>46 (92%)</td>
<td>47 (94%)</td>
</tr>
<tr>
<td>Hematemesis</td>
<td>Yes</td>
<td>5 (10%)</td>
<td>4 (8%)</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>45 (90%)</td>
<td>46 (92%)</td>
</tr>
<tr>
<td>Rebleeding</td>
<td>Yes</td>
<td>5 (10%)</td>
<td>4 (8%)</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>45 (90%)</td>
<td>46 (92%)</td>
</tr>
</tbody>
</table>

After treatment, melena was observed in 5 (10%) randomized to short course while 4 (8%) cases in usual course while hypovolemic shock was observed in 4 (8%) randomized to short course and 3 (6%) cases in usual course. Moreover, hematemesis was observed in 5 (10%) randomized to short course while 4 (8%) cases
in usual course. Rebleeding was observed in 5 (10%) randomized to short course while 4 (8%) cases in usual course, but all the difference were highly non-significant (Table 2)

**DISCUSSION**

The management of VB remains a clinical challenge with a high mortality. Standardization in supportive and new therapeutic treatments seems to have improved survival within the last 25 years. Terlipressin and somatostatin and analogues are the two types of medicine, which has been evaluated. In meta-analysis, only Terlipressin have demonstrated effects on control of bleeding and on mortality. It has been concluded in recent placebo controlled trials that terlipressin is as safe as other commonly used treatments for acute VB. It significantly reduces the mortality of VB compared to placebo, and this beneficial effect persists even when the analysis is limited to high quality studies. When used as an adjuvant to endoscopic sclerotherapy, terlipressin improves hemostasis, and has an effect on reducing mortality that approaches statistical significance. Therefore, these data support the use of terlipressin as initial treatment of acute VB, with or without adjuvant endoscopic treatment.

Before start of treatment, hematemesis was observed in 45 (90%) randomized to short course which was remained in 5 (10%) patients after treatment. Patients randomized to usual course, hematemesis was observed in 36 (72%) cases which was remained in 4 (8%) patients after treatment. Melena was observed in 42 (84%) randomized to short course which was remained in 5 (10%) patients after treatment. Patients randomized to usual course, melena was observed in 42 (84%) cases which was remained in 4 (8%) patients after treatment. Hypovolemic shock was observed in 4 (8%) randomized to short course while in 3 (6%) cases randomized to usual course. The difference between both groups was highly insignificant (p > 0.05). This showed no difference between both groups.

After treatment, rebleeding was observed in 5 (10%) randomized to short course while in 4 (8%) cases randomized to usual course. The difference between both groups was highly insignificant (p = 0.727). This showed that both treatment regimens are equally effective in preventing rebleeding. One randomized trial compared short and usual course of terlipressin. A total of 130 eligible patients were randomized to receive terlipressin for 24 hours short course or 72 hours usual course. There was one failure to control VB (1.5%) in usual course and none in short course terlipressin (p = 0.50). The 30-day re-bleeding rate was 1.5% and 3.1% in usual course, and short course terlipressin, respectively (p = 0.50). The 30-day failure to control bleeding was observed in 14 patients; seven in each group (p = 0.494). It was concluded that in patients with VB, a 24-h course of terlipressin is as effective as a 72-h course when used as an adjunctive therapy to successfull EVBL. This was the only reported study of this nature which compared short course with usual course. No more randomized trials are available which compared short and usual course. This also concluded that both methods are equally effective as we found in our study.

**CONCLUSION**

It was concluded through results of this study that short course terlipressin is equally effective as usual course. Now we can recommend short course for management of variceal bleed to prevent rebleed instead of usual course.

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The manuscript should be typed in double spacing. Begin each section or component on a new page. Review the sequence: Title Page, Abstract, Key Words, Text, Acknowledgement, References, Tables (each on separate page). Illustrations, Uncounted prints, should not be larger than 8 x 10 inches.

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It should be Accurate, Effective and Represent the main message of Article.

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INTRODUCTION

The start of the introduction should be Relevant. Reasons and Importance of the study should be clear. In the subject of the paper Significant findings may be elaborated. Previous 10 years National & International literature may be reviewed and recorded in the introduction. State the purpose of the Article and summarize the rationale for the study or observation. Give only strictly pertinent References and do not include data or conclusions from the work being reported.

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The Population taken for the study should be uniform and Sample selection criteria should be reliable. Inclusion & Exclusion criteria should be clearly specified. Control within the study or literature may be given. Important variable measurement criteria should be mentioned. Investigation, Procedure & Technique should be clearly described.

RESULTS

Present yours results in a logical sequence in the Text, Tables, Illustrations. Do not repeat in the text all the data in the tables or illustrations. Emphasize or Summarize only important observations. Do not duplicate data in Graphs & Tables.

DISCUSSION

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In this link write the goals of the study but avoid unqualified statements and conclusions not completely supported by data.

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ACKNOWLEDGMENTS
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