Original Article

Incidence of Hip Fractures

Incidence of Hip Fractures (Subtrochanteric and Intertrochanteric) in Sialkot in Last Five Years

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ABSTRACT

Objective: To study the Incidence of hip fractures (subtrochanteric and intertrochanteric) in Sialkot last five years.
Study Design: Retrospective Study
Place and Duration of Study: This study was conducted at the Department of Surgery, Idris Teaching Hospital, Sialkot Medical College, Sialkot from January 2015 to 31st July 2019.
Materials and Methods: A total of 121 patients were included in this study. There were 52(43%) patients were male and 69(57%) patients were female. The performa was designed to note down the demographic data and complications of hip fracture and lab test.
Written Informed consent was taken from every patient included in this study. The permission of ethical committee was also taken before collection of data and publishing in the medical journal.. Participants were selected through non probability consecutive sampling technique.
Results: At the age of 26-35 years, there were patients of hip fracture 9(17.30%) Male and 2(3%) female. At the age of 36-45 years the patients of hip fracture were 3(5.76%) Male and 5(7.24%) female. At the age of 46-55 years the patients of hip fracture were 3 (5.76%) Male and 4(6%) female. At the age of 56-65 years the patients of hip fracture were 6(11.52%) Male and 6(9%) female. At the age above 65 years the patients of hip fracture were 31(59.61%) Male and 52(75.36%) Female. There was cause of hip fracture due to fall or slippage was 31(59.61%) Male and 60(87%) female, due to RTA especially car accidents 19 (36.53%) Male and 06(9%) female. Due to obesity , there were 2(3.84%) Male and 3(4.5%) female were found. Conservative skin traction or bed rest there were 2(3.84%) Male and 4(6%) female were found. There were DHS 31(59.61%) male and 48 (69.56%) female , DCS 12(23.04%) Male and 14(20.28%) Female, due to I/M or I/L nail there were 7(13.46%) Male and 03(4.5%) female. There was complication of Blood clot leading to pulmonary Embolism 00(00%) Male and 1(1.5%) female. There was complication of Pneumonia 00(00%) Male and 2(3%) Female. There was complication of Infection 03(5.76%)Male and 04(06%) Female. There was complication of Cut out implant 01(1.92%) Male and 03(4.5%) Female. There was complication of Bed sores 00(00%) Male and 01(1.5%) Female. There was complication of Mortality in 1st year 03(5.76%) Male and 06(9%) Female. There was outcome and end result in hip fracture union of hip fracture was 43(87.75%) male and 54(85.71%) female, there was delayed union of hip fracture 02(4.1%) male and 03(4.76%) female, there was non union of hip fracture in 04(8.2%) Male and 06(9.5%) Female.
Conclusion: It was concluded that there was hip fracture due to fall or slippage, car accidents and obesity.
Key Words: Incidence, Hip Fractures (Subtrochnatreic and Intertrochanteric), Sialkot, Last Five Years

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INTRODUCTION

"Osteoporosis causes the bone to be fragile so that a minute trauma leads to fracture. The most disabling fracture due to osteoporosis is that of Hip bone which causes pain restricted movements, dependent life, early death. According to an audit report publishing 2009, osteoprotic hip joint fracture is on rise in Asia although it has been an increased incidence rate in Europe." 1. "As the health related facilities are increasing throughout the globe. The ratio of old persons is also raising so that chances of getting hip fracture is also increased and it is estimated that by 2050 it will be 26 million[2]".

"Multiple studies have indicated that incidence rate of hip fracture in different countries of the world is different even in neighbouring countries it does not match each other. Incidence of hip fracture is highest in Sweden and North America, with almost seven-times lower rates in Southern European countries.3 Incidence

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rate of Hip fracture in Asia and Latin American countries is low as compared to America and Sweden". "Most of the population of the globe resides in Asian countries so it is expected that the proportion of hip joint fracture will be increased in near future. It is deemed that by 2050 Asian countries will have more victims of osteoporotic hip joint fractures as compared to all other countries of globe".2 "In pathogenesis of hip fracture DNA sequences play key role along with environmental factors.. This leads to varations of occurrence of osteoporotic hip joint fracture in different countries of world." "The present study will explore the incidence rate of osteoprotic hip joint fractures in various countries of the globe. It will also explain the different factors leading to fracture in different countries." "The data explained in this article has been taken from PubMed database. The keywords that were employed included hip fracture, incidence rate, geographic variation, osteoporosis, and epidemiology". "The articles were chosen on the basis of 1) focus (studies that specifically focused on geographic variation in hip fracture); 2) language (studies that were in English); and 3) methods (studies that used statistical tests to look at hip fracture incidence rates)." "Hip fracture rates are available from many countries across Asia, including from Singapore, Taiwan, Japan, Malaysia, China, and the Middle East. India which is second most thick in population has only given probable rates only". "Studies on hip fracture incidence rates are available from Japan, particularly from the Tottori prefecture, a region representative of the Japanese population in terms of demographic and economic status.4 A study carried out by (Hagino et al.) identified 851, 901, and 1059 patients with hip fracture (aged 35 years and older) in 2004, 2005, and 2006, respectively." "The residual lifetime risk of hip fracture at 50 years of age was estimated to be 5.6% for men and 20% for women. The study concluded that within the Japanese population aged 35 years or older, the crude incidence of hip fracture was 244.8 per 100 000 person-years from 2004 to 2006 and the gender-specific incidence was 99.6 per 100 000 person-years for men and 368 per 100 000 person-years for ladies . When these incidence rates were compared thereupon from 30 years ago, the authors concluded that the incidence of hip fracture within the Japanese population is increasing. This elevated incidence is thought to be in persons of old age".

"The highest incidence of hip fractures from Asia has been reported from Singapore. A study by Koh et al. revealed that hip fracture rates from 1991 to 1998 (per 100 000) were 152 in men and 402 in women; this was respectively 1.5 and 5 times higher than corresponding rates in 1960s".5 "Examined by ethnicity, since 1960, the main elevation in hip fracture rates has been seen in Chinese and Malays, while the rates in the Indian ethnic group appear to have lowered. The factors responsible for these racial differences include differences in the demographic profile, body weight, physical activity, prevalence of cigarette smoking and alcohol consumption, calcium intake, and frequency of falls in the community in elderly".

"In Korea, Lim et al. carried out the study to know the incidence and cost of hip fracture from 2001 to 2004 using data from the Health Insurance Review Agency, Korea.6 In individuals over 50 years of age, the number of hip fractures in women increased from 250.9/100 000 persons in 2001 to 262.8/100 000 in 2004, a 4.7% increase. However, hip fractures in men decreased from 162.8/100 000 in 2001 to 137.5/100 000 in 2004, a 15.5% decrease. The direct medical care costs of hip fracture increased from $62 707 697 in 2001 to $65 200 035 in 2004, and the proportional cost of hip fractures in the national medical costs increased by 4.5% over 4 years (from 0.200% in 2001 to 0.209% in 2004). On analysis of the population-based data obtained from the entire country from 2001 to 2004, the incidence rate of hip fractures in women (but not in men) and its cost have increased in Korea. This gender difference in the distribution of hip fractures underlines the need for aggressive intervention in osteoporosis in elderly women".

MATERIALS AND METHODS

This study was conducted at the Department of Surgery, Idris Teaching Hospital, Sialkot Medical College, Sialkot from January 2015 to 31st July 2019.

A total of 121 patients were included in this study. There were 52(43%) patients were male and 69(57%) patients were female. The performa was designed to note down the demographic data and complications of hip fracture and lab test.

Written Informed consent was taken from every patient included in this study. The permission of ethical committee was also taken before collection of data and publishing in the medical journal.. Participants were selected through non probability consecutive sampling technique.

Inclusion criteria: All the cases of hip fracture were included in this study.

RESULTS

At the age of 26-35 years, there were patients of hip fracture 9(17.30%) Male and 2(3%) female. At the age of 36-45 years the patients of hip fracture were 3(5.76%) Male and 5(7.24%) female. At the age of 46-55 years the patients of hip fracture were 3 (5.76%) Male and 4(6%) female. At the age of 56-65 years the patients of hip fracture were 6(11.52%) Male and 6(9%) female. At the age above 65 years the patients of hip fracture were 31(59.61%) Male and 52(75.36%) Female as shown in table no 1.

Table No. 1: Age and gender distribution in Hip fracture

Sr. No.	Age(years)	Male(52)	Female(69)
1	26-35	9(17.30%)	2(3%)
2	36-45	3(5.76%)	5(7.24%)
3	46-55	3(5.76%)	4(6%)
4	56-65	6(11.52%)	6(9%)
5	Above 65	31(59.61%)	52(75.36%)
Total		52(100%)	69(100%)

There was cause of hip fracture due to fall or slippage was 31(59.61%) Male and 60(87%) female, due to RTA especially car accidents 19 (36.53%) Male and 06(9%) female. Due to obesity , there were 2(3.84%) Male and 3(4.5%) female were found as shown in table no 2.

Table No. 2: Distribution of marital status

Sr. No.	Causes	Male	Female
1	H/o fall or slipage	31(59.61%)	60(87%)
2	RTA esp car accidents	19(36.53%)	06(9%)
3	Obesity	02(3.84%)	03(4.5%)
Total		52(100%)	69(100%)

Conservative skin traction or bed rest there were 2(3.84%) Male and 4(6%) female were found.
There were DHS 31(59.61%) male and 48 (69.56%) female, DCS 12(23.04%) Male and 14(20.28%) Female, due to I/M or I/L nail there were 7(13.46%) Male and 03(4.5%) female. Table 3.

Table No. 3:Treatment Distribution of Hip Fracture

Treatment	Male		Female
Conservative Skin Traction or bed rest	2(3.84%)		4(6%)
Female	DHS	31(59.61%)	48(69.56%)
	DCS	12(23.04%)	14(20.28%)
	I/M , I/L nail	7(13.46%)	03(4.5%)

Table No. 4: Complications in Hip Fracture

Complications	Male	Female
Blood clot leading to pulmonary Embolism	00	01(1.5%)
Pneumonia	00	02(3%)
Infection	3(5.76%)	04(6%)
Cut out implant	01(1.92%)	03(4.5%)
Bed sores	00	01(1.5%)
Mortality in 1st year	03(5.76%)	06(9%)
Total	07(13.46%)	17(24.63%)

There was complication of Blood clot leading to pulmonary Embolism 00(00%) Male and 1(1.5%) female. There was complication of Pneumonia 00(00%) Male and 2(3%) Female. There was complication of Infection 03(5.76%)Male and 04(06%) Female. There was complication of Cut out implant 01(1.92%) Male and 03(4.5%) Female. There was complication of Bed sores 00(00%) Male and 01(1.5%) Female. There was complication of Mortality in 1st year 03(5.76%) Male and 06(9%) Female as shown in table in no 4.

There was outcome and end result in hip fracture union of hip fracture was 43(87.75%) male and 54(85.71%) female, there was delayed union of hip fracture 02(4.1%) male and 03(4.76%) female , there was non union of hip fracture in 04(8.2%) Male and 06(9.5%) Female as shown in table no 5.

Table No. 5: Output / end result in hip fracture

Output	Male	Female
Union	43(87.75%)	54(85.71%)
Delayed union	02(4.1%)	03(4.76%)
Non union	04(8.2%)	06(9.5%)
Total	49(100%)	63(100%)

DISCUSSION

"Osteoporetic Hip fracture rates have been explained in literature from among various countries across Asia, including from Singapore, Taiwan, Japan, Malaysia, China, and the Middle East. Unfortunately, only projected figures are available from India, which is second most populous country within the world". "Studies on hip fracture incidence rates are available from Japan, particularly from the Tottori prefecture, a neighborhood representative of the Japanese population in terms of demographic and economic status. A recent survey (Hagino et al.)[4] identified 851, 901, and 1059 patients with hip fracture (aged 35 years and older) in 2004, 2005, and 2006, respectively". "The residual lifetime risk of hip fracture at 50 years of age was estimated to be 5.6% for men and 20% for women". "The study concluded that within the Japanese population aged 35 years or older, the crude incidence of hip fracture was 244.8 per 100 000 person-years from 2004 to 2006 and the gender-specific incidence was 99.6 per 100 000 person-years for men and 368 per 100 000 person-years for ladies" . "When these incidence rates were compared with that from 30 years ago, the authors concluded that the incidence of hip fracture in the Japanese population is increasing. This increasing incidence is due to the increase in the population of the elderly in Japan over the last three decades".
"The highest incidence of hip fractures from Asia has been reported from Singapore. A study by Koh et al.[5] revealed that hip fracture rates from 1991 to 1998 (per 100 000) were 152 in men and 402 in women; this was respectively 1.5 and 5 times above corresponding rates

in 1960s. Examined by ethnicity, since 1960, the main increase in hip fracture rates has been seen in Chinese and Malays, while the rates in the Indian ethnic group appear to have decreased. The factors liable for these racial differences include differences within the demographic profile, weight, physical activity, prevalence of cigarette smoking and alcohol consumption, calcium intake, and frequency of falls in the community in elderly".

"In Korea, Lim et al.[6] analyzed the incidence and cost of hip fracture from 2001 to 2004 using data from the Health Insurance Review Agency, Korea. In individuals over 50 years of age, the number of hip fractures in women increased from 250.9/100 000 persons in 2001 to 262.8/100 000 in 2004, a 4.7% increase. However, hip fractures in men decreased from 162.8/100 000 in 2001 to 137.5/100 000 in 2004, a 15.5% decrease. The direct medical care costs of hip fracture increased from $62 707 697 in 2001 to $65 200 035 in 2004, and the proportional cost of hip fractures in the national medical costs increased by 4.5% over 4 years (from 0.200% in 2001 to 0.209% in 2004). On analysis of the population-based data obtained from the whole country from 2001 to 2004, the incidence rate of hip fractures in women (but not in men) and its cost have increased in Korea. This gender difference in the distribution of hip fractures underlines the need for aggressive intervention in osteoporosis in elderly women."

"In 1995, the incidence rates of hip fracture from Hong Kong were 110/100 000 in women and 50/100 000 in men as per data from public hospitals.[8-11] Secular trends on hip fracture from Hong Kong suggest that over the last three decades the age-specific incidence increased 2.5-fold in women and 1.7-fold in men. The incidence rates were found to almost like those seen within the Wessex health region of UK. In Beijing, China, hip fracture incidence were calculated from admissions to 76 city hospitals between 1988 and 1992.[12-16] It was presumed that all the fracture cases from Beijing go to these public hospitals only. Based upon the 1990 China census, age-standardized rates of hip fracture were 87/100 000 for women and 97/100 000 for men. These data further demonstrate that from 1988 to 1992, the rates in Beijing increased by 34% in women and 33% in men."

"Maximum data from the center East is out there from Iran from the Iranian Multicenter Study on Accidental Injuries.[16] This study reported age-standardized incidence rates of hip fracture of 127.3/100 000 person-years in men and 164.6/100 000 person-years in women, which is much lower than the rates reported from any of the Western countries, including the US. Smaller studies are available from Kuwait and show similar results"[17].

CONCLUSION

It was concluded that there was hip fracture due to fall or slippage, car accidents and obesity.

Author's Contribution:

Concept & Design of Study:	Salman Imran Butt
Drafting:	Muhammad Asif Saeed, Maqsood Ahmed Khan
Data Analysis:	Liaqat Ali, Muhammad Munir Akhtar Khan and M Sabir
Revisiting Critically:	Salman Imran Butt, Muhammad Asif Saeed
Final Approval of version:	Salman Imran Butt

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

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