

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

Salman Imran Butt<sup>1</sup>, Muhammad Asif Saeed<sup>2</sup>, Maqsood Ahmed Khan<sup>3</sup>, Liaqat Ali<sup>4</sup>,  
Muhammad Munir Akhtar Khan<sup>1</sup> and M. Sabir<sup>4</sup>

## 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 Idris Teaching Hospital, Sialkot Medical College, Sialkot from January 2015 to 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 1<sup>st</sup> 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 (Subtrochanteric and Intertrochanteric), Sialkot, Last Five Years.

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## INTRODUCTION

Osteoporosis represents a major public health problem because of its association with low-energy trauma or fragility fractures.

<sup>1</sup>. Department of Surgery, Idris Teaching Hospital Sialkot.

<sup>2</sup>. Department of Orthopaedics / Anesthesia<sup>3</sup> / Anatomy<sup>4</sup>, Sialkot Medical College Sialkot.

Correspondence: Dr Salman Imran Butt, Medical Officer of Surgery, Idris Teaching Hospital Sialkot.

Contact No: 0301-8611304

Email: salman-imran-butt@yahoo.com

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Hip fracture has been recognized as the most serious consequence of osteoporosis because of its complications, which include chronic pain, disability, diminished quality of life, and premature death. Osteoporotic hip fracture is an established health problem in the West and is increasingly recognized as a growing problem in Asia as per the Asian Audit Report, 2009.<sup>1</sup> With rising life expectancy throughout the globe, the number of elderly individuals is increasing in every geographical region, and it is estimated that the incidence of hip fracture will rise from 1.66 million in 1990 to 6.26 million by 2050.<sup>2</sup>

Studies over the last few decades have demonstrated geographic variation in the incidence of hip fracture across continents as well as among different parts of a region. Incidence of hip fracture is highest in Sweden and North America, with almost seven-fold lower rates

in Southern European countries.<sup>3</sup> Hip fracture rates are also lower in Asian and Latin American populations. But as three-quarters of the world's population live in Asia, it is projected that Asian countries will contribute more to the pool of hip fractures in coming years. It is estimated that by 2050 more than 50% of all osteoporotic fractures will occur in Asia.<sup>2</sup> This variation in the distribution of hip fracture over different regions of the world demonstrate that genetic and environmental factors play a role in the etiology of hip fracture. It is therefore worthwhile to examine the geographic variations in hip fracture and speculate on the factors responsible for these differences. This review will serve as an update of the epidemiology of hip fracture worldwide, with special emphasis on the geographic variations and etiological factors. This review was conducted using the 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 examine 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. Unfortunately, only projected figures are available from India, which is second most populous country in the world. 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.<sup>4</sup> A recent survey (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 in 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 women. 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. 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.<sup>5</sup> 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 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. analyzed the incidence and cost of hip fracture from 2001 to 2004 using data from the Health Insurance Review Agency, Korea.<sup>6</sup> 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.<sup>7</sup> 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 similar to those seen in the Wessex health region of UK.<sup>8</sup> In Beijing, China, hip fracture incidence were calculated from admissions to 76 city hospitals between 1988 and 1992.<sup>9</sup> 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 Middle East is available from Iran from the Iranian Multicenter Study on Accidental Injuries.<sup>10</sup> 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.<sup>11</sup>

## MATERIALS AND METHODS

This study was conducted at the Idris Teaching Hospital, Sialkot Medical College, Sialkot from January 2015 to 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**

**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%)

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. 2: Distribution of marital status**

Sr. No	Causes	Male	Female
1	H/o fall or slippage	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%)

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.

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 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%)
	DCS	12(23.04%)
	I/M , I/L nail	7(13.46%)

**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 1 <sup>st</sup> 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 1<sup>st</sup> year 03(5.76%) Male and 06(9%) Female as shown in table in no 4.

**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%)

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.

**DISCUSSION**

Hip fracture rates are available from many 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 in the world. 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.<sup>4</sup> A recent survey (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 in 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 women. 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.

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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.<sup>8,9,10,11,7</sup> 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 similar to those seen in the Wessex health region of UK.<sup>8</sup> In Beijing, China, hip fracture incidence were calculated from admissions to 76 city hospitals between 1988 and 1992.<sup>12,13,15,15,16,9</sup> 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.

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## 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, 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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