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Dr. Mohit Bansal
Senior Resident, Department of
Orthopaedics Government
Medical College Amritsar,
Punjab, India

Dr. Basant Rai
Assistant Professor, Department
of Orthopaedics, Government
Medical College Amritsar,
Punjab, India

Assessment of incidence of hip fractures in known population: an observational study

Dr. Mohit Bansal and Dr. Basant Rai

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Abstract

Background: One of the major health concerns among elder population is hip fractures. There are few studies in osteoporosis in the past literature, but very few have described the hip fracture rates from India. Hence; under the light of above obtained data, we planned the present study to assess the incidence of hip fractures in known population.

Materials & Methods: A total of 400 fracture cases who reported to the department of orthopedics of the medical institute. Prevalence of hip fractures was recorded. Detailed clinical profile of all the patients with hip patients was recorded separately and was analyzed by SPSS software.

Results: The incidence of fractures in the present study was found to be 30 percent. Majority of the patients belonged to the age group of more than 60 years. Mean age of the patients of the present study was 65.3 years. 56.7 percent of the patients with hip fractures in the present study were females while the remaining 43.3 percent of the patients were males.

Conclusion: Hip fractures affect significant proportion of geriatric population.

Keywords: hip, fractures, prevalence

Introduction

One of the major health concerns among elder population is hip fractures. But, however; subsequent morbidity is unclear about environmental factors and socioeconomic conditions. 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^[1, 2] Despite being the second largest emerging economy and second largest populated country in the world there are few studies in osteoporosis but very few have described the hip fracture rates from India^[3] With changing world population dynamics, it has been estimated that more than half of these fractures will be concentrated in Asia by the year 2050 and although the exact reason for this geographic distribution is poorly understood, proposed contributing factors include genetic factors, less bone mineral content, physical activity, aging population, and environmental factors such as diet and vitamin D levels^[4-6] Hence; under the light of above obtained data, we planned the present study to assess the incidence of hip fractures in known population.

Materials & Methods

For the present study, we assessed a total of 400 fracture cases who reported to the department of orthopedics of the medical institute. Ethical approval was obtained from institutional ethical committee and written consent was obtained after explaining in detail the entire research protocol. Detailed demographic and biochemical details of all the patients were obtained from their data records. Exclusion criteria for the present study were as follows:

- Patients with presence of any other systemic illness,
- Patients beyond the age group of 20 to 70 years,
- Patients with presence of any bone metabolic disorder

Prevalence of hip fractures was recorded. Detailed clinical profile of all the patients with hip patients was recorded separately and was analyzed by SPSS software.

Correspondence
Dr. Basant Rai
Assistant Professor, Department
of Orthopaedics, Government
Medical College Amritsar,
Punjab, India

Results

In the present study, a total of 400 patients with fractures reporting to the department of orthopedics were included in the present study. The incidence of fractures in the present study was found to be 30 percent. Majority of the patients belonged to the age group of more than 60 years. Mean age of the patients of the present study was 65.3 years. 56.7 percent of the patients with hip fractures in the present study were females while the remaining 43.3 percent of the patients were males. Road traffic accident was the most common etiologic factor responsible for hip fractures, followed by domestic falls and industrial accidents.

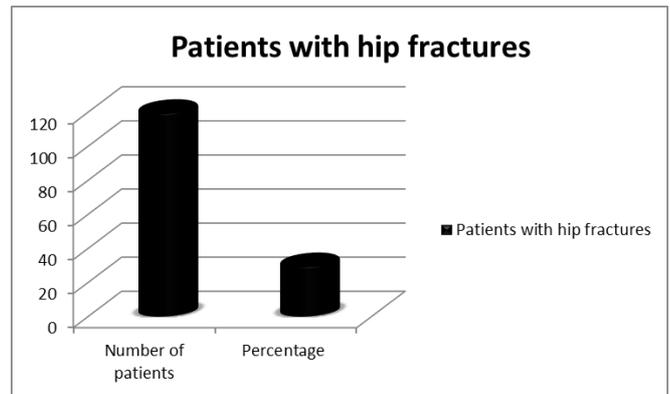
Discussion

Hip fractures in older adults have significant implications for morbidity, mortality, hospital utilization and the cost of care in the community. The global burden of hip fractures is likely to increase significantly from an estimated 1.7 million in 1990 to 6.3 million in 2050. These increases are primarily the consequence of improved life expectancy, especially in emerging economies, and it is projected that by 2050 nearly half of all hip fractures will occur in Asia, particularly in India and China [6-8].

In the present study, a total of 400 patients with fractures reporting to the department of orthopedics were included in the present study. The incidence of fractures in the present study was found to be 30 percent. Ahuja K *et al* analyzed risk factors and the epidemiological profile of hip fractures among the Indian population with special importance to the mechanism of injuries. Patients of hip fractures (n = 41) and age- and sex-matched healthy volunteers (n = 41) were interviewed by a questionnaire regarding the occurrence of the fracture, past history of diseases and long-term medication usage, past and physical activity, supplements, smoking, and alcohol intake. Age group 60–69 was found to be most affected by hip fractures, though an early onset of fractures was noted in males. Falls due to slipping indoors from standing position was found very commonly. However, an increasing trend of falls was noted from lying down position in the older age groups which was more common during the morning and night hours. Logistic regression analysis for the detection of risk factors was applied to the various variables in the questionnaire. Active status in the past was inversely related (odds ratio [OR], 0.33; P < 0.05) to fracture risk while alternative medication usage in the past 1 year (OR, 4.086; P < 0.05) and significant alcohol consumption were directly associated with fracture risk (OR, 5.484; P < 0.05). A potential inverse relation of use of calcium supplements in the past 3 months and fracture risk (OR, 0.872) was seen, although this was not significant. A potential positive relation of smoking with hip fractures was also seen, but not found significant. Hip fractures in the elderly population are on a rising trend especially in the Indian subcontinent due to a number of factors both hereditary and acquired [9].

In the present study, majority of the patients belonged to the age group of more than 60 years. Mean age of the patients of the present study was 65.3 years. 56.7 percent of the patients with hip fractures in the present study were females while the remaining 43.3 percent of the patients were males. Road traffic accident was the most common etiologic factor responsible for hip fractures, followed by domestic falls and industrial accidents. Dhanwal DK *et al* studied hip fracture incidence in Rohtak district of North India. The study was conducted in Rohtak district, Haryana state; India located 80 km north of New Delhi. All patients having hip fracture

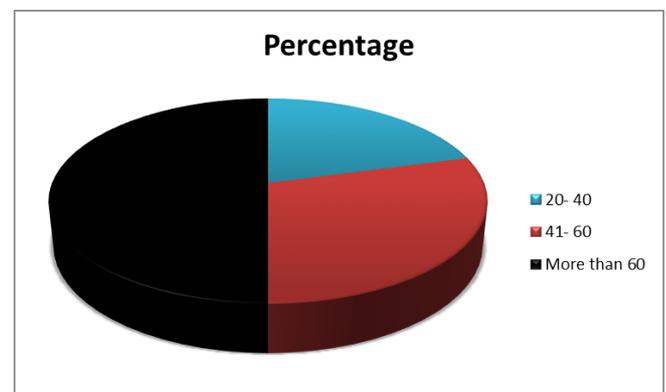
admitted in Pt BD Sharma PGI or one of the four orthopaedic centres located in Rohtak in year 2009 were included. Total population of Rohtak for the year 2009 was used to calculate age specific hip fracture incidence. A total of 541 patients with hip fracture were hospitalized in Rohtak district in year 2009. Out of these 304 were from Rohtak district. Hip fracture crude incidence above the age of 50 years was 129 per 100,000. The corresponding figures were 105 and 159 per 100,000 among men and women respectively. Hip fracture incidence was similar in both sexes till age of 55 years. From age of 55 onwards the rates were significantly higher in women [10].



Graph 1: Incidence of Hip fractures

Table 1: Age-wise distribution of subjects with hip fractures

Age group (years)	Number of subjects	Percentage
20- 40	25	20.8
41- 60	35	29.2
More than 60	60	50
Total	120	100
Mean age	65.3	



Graph 1: Age-wise distribution of subjects with hip fractures

Table 2: Gender-wise distribution of subjects of both the study groups

Gender	Number of subjects	Percentage
Male	52	43.3
Female	68	56.7
Total	120	100

Table 3: Distribution of subjects according to mode of injury

Mode of injury	Number of subjects	Percentage
Road traffic accident	45	37.5
Domestic fall	40	33.3
Industrial accident	35	29.2
Total	120	100

Conclusion

Under the light of above obtained data, the authors conclude that hip fractures affect significant proportion of geriatric population. However; further studies are recommended.

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