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Original Research Paper

Age and Sex difference in pertrochanteric fracture femur in rural central India-Retrospective study

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ABSTRACT:

Introduction: Pertrochanteric fracture represent perhaps the most important public health problem facing the orthopaedic surgeon today. The purpose of study is to investigate age and sex distribution in patient with pertrochanteric fracture femur in rural central india. **Material and Method:** During the period from December 2019 to august 2021, 39 patients with pertrochanteric fracture femur who were admitted in the orthopaedics department were distributed according to age and sex distribution and treated for pertrochanteric fracture with standardized protocol. **Results**: Average mean age was 62.79 yrs. Majority of patients were male (64.11%). Domestic fall (94.88%) was the most common mode of injury. Fractures were classified by using Evan's classification. **Conclusion:** The pattern of hip fractures was found to differ between genders and age groups in the present patients' population. Most likely, these findings reflect differences in the nature and rate of bone loss, and frequency of falling events between males and females.

Key words: Gender difference, Age difference, Pertrochanteric fractures, Rural central India

INTRODUCTION

Pertrochanteric fractures are defined as fractures that extend from the extracapsular basilar neck region to the region along the lesser trochanter before the development of the medullary canal. Hip fractures form a large chunk of orthopedic injuries. The age at which they occur vary a lot right from young people with high energy trauma having pertrochanteric fractures which are complex and comminuted due to velocity of injury, to geriatric population suffering from complex comminution pertrochanteric fractures due to osteoporosis[(1)]. These fractures accounts for nearly 50% of fractures around hip. They continue to be a major cause of disability leading to reduced quality of life and death. 90% of Pertrochanteric fractures of femur in elderly occurs commonly through osteoporotic bone due to simple fall. In India rise in the cases of Pertrochanteric fracture femur is because of increase in the number of Senior Citizens and this incidence is expected to double by 2040. These fractures are associated with substantial morbidity and mortality; 30% of elderly patient die within 1 year of fracture. After 1 year, patients seem to resume their age adjusted mortality rate [(2)]. Studies have shown that advanced age and osteoporosis is more strongly associated with the risk of extracapsular-intertrochanteric than intracapsular fractures[(3)]. Sex, referring both to biological and social aspect, is a major decisive factor in many circumstances, but little is known about how sex affects falls and subsequent hip fractures in the elderly. The situation in Rural Central India regarding age and gender specific incidence rates of intracapsular and extracapsular fractures, and the subsequent morbidity and mortality, as well as the size of the problem in general, remains unclear due to shortcomings in studies, information, and health system procedures. The purpose of this study was to evaluate the characteristics of patients with hip fractures, surgically treated during a study period at the Orthopaedic Department of the Rural hospital in central India.

MATERIAL AND METHOD

Study Design: The present study was prospective follow up study. The present study consisted of 39 adult patients of pertrochanteric fractures of femur.

The study was carried out in the department of Orthopedics from August 2019 to August 2021.

Study participants: All willing patients attending orthopedics opd and accident emergency in Rural hospital in central India with pertrochanteric fracture that fulfill predetermined inclusion and exclusion criteria requiring internal fixation were taken up for study.

Sample size: All Patient with pertrochanteric fracture Femur from August 2019 to August 2021 were part of study and followed accordingly.

Inclusion criteria- -

(1) Age >18 years
(2) Radiological diagnosis of Displaced pertrochanteric fracture femur
(3) Closed fractures
(4) Willing to provide informed consent

Exclusion criteria:

(1) Age less than 18 years
(2) Open fractures
(3) Neurovascular injury
(4) Fracture associated with ipsilateral lower limb.

DATA COLLECTION

After the patient with Pertrochanteric fractures were admitted to hospital, all the necessary clinical details were recorded in proforma prepared for this study. The patients were followed up to assess fracture union and functional recovery after surgery at regular interval.

Declaration: Paper has not been published anywhere till date.

OBSERVATIONS AND RESULTS

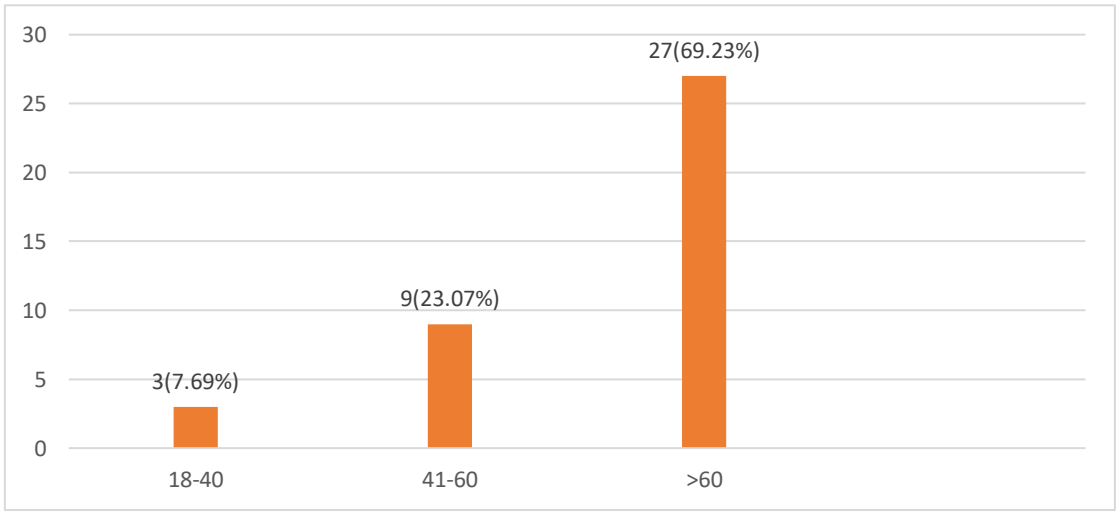
The Present study was conducted from August 2019 to August 2021. In this study a total of 39 cases of Pertrochanteric fractures were evaluated. Patients admitted were evaluated pre-operatively. Details were collected as per preformed proforma. Patients were followed up regularly on OPD basis and the records were maintained. Data collected was analyzed and compared with other series available in the literature.

(1) Age Wise Distribution (n=39)

Age group (in years)	Number of cases	Percentage%
18-40	03	7.69%
40-60	09	23.07%
>60	27	69.23%

Table-1

GRAPH 1



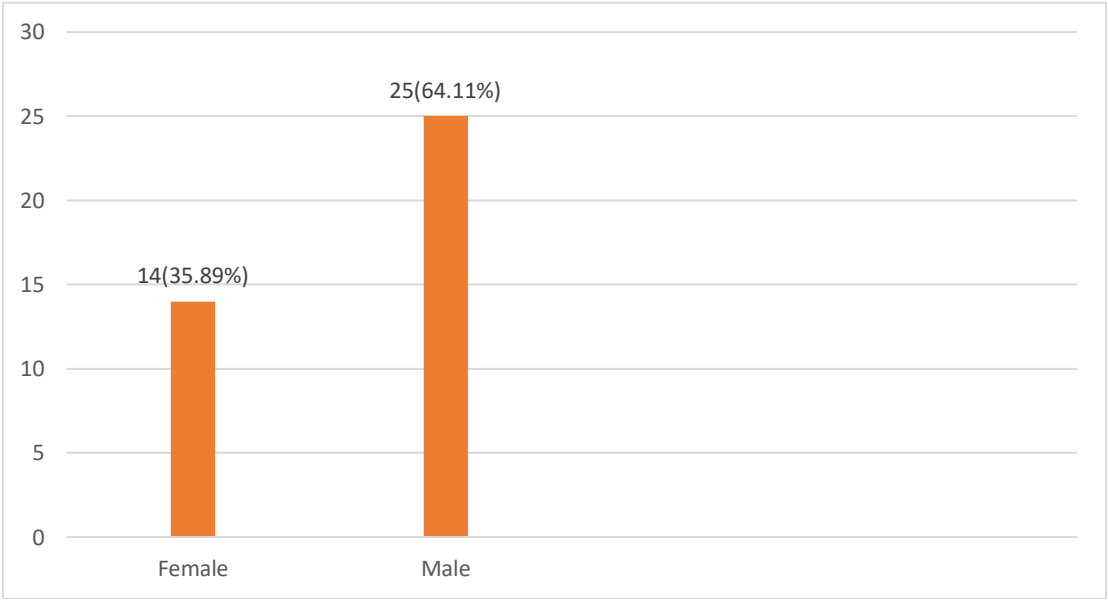
In this study majority of patients are in more than 60 year age group which contribute to 69.23% of the cases.

(2)Sex Wise Distribution (n=39)

Sr. No.	Sex	No. Of Patients	Percentage%
1	Females	14	35.89%
2	Males	25	64.11%

Table-2

GRAPH 2



In the present study 14 patients (35.89%) were females and 25 (64.11%) were males, showing male preponderance. It could be because of level of activity.

DISCUSSION

Pertrochanteric fractures are a distinct entity affecting the elderly population with a significant impact on the individual (in terms of morbidity and mortality) and also of the health care system. These fractures accounts for nearly 50% of fractures around the hip. The treatment of Pertrochanteric fractures still remains a challenge to this day. Conservative treatment has very limited role and is offered to patients who have significant co-morbid conditions which increases the risk of surgery. The present study was done from August 2019 to August 2021. In this study 39 Cases of pertrochanteric fractures evaluated.

Age Incidence (n=39)

AUTHORS	AVERAGE AGE
BOYD AND GRIFFIN 1948(n=300)[4]	69.7
ARUN SINGH 1998(n=80)[1]	52.5

GUO-CHUN ZHA et al 2007(n=110)[5]	75
GS KULKARNI 1980(n=140)[6]	62
PRESENT STUDY (n=39)	62.79

Table-11

The average age incidence in our study was 62.79 years. This is in contrast to higher age group as reported in western literature. In the present study age incidence is lower possibly due to early onset osteoporosis. Age incidence of fracture is comparable to the study by GS Kulkarni.

SEX INCIDENCE(n=39)

AUTHORS	FEMALE	MALE
HUNTER AND KRAJBICH(n=287)[7]	185(64.46%)	102(35.54%)
GS KULKARNI(n=140)[6]	76(54.28%)	64(45.72%)
PRESENT STUDY(n=39)	14(35.89%)	25(64.11%)

Table-12

In the present study male: female ratio was 5:3. There was male sex preponderance seen in present study probably due to more outdoor activity of Male.

CONCLUSION

The main findings of the present study are that males and individuals older than 60 years of age were more likely to suffer a hip fracture. These findings confirmed that the incidence of hip fractures was higher in the "older" elderly than the "younger" ones. Older people suffer more severe osteoporosis and have a more frequent falling record[8]. Bone mass gradually declines with age and consequently, the incidence of osteoporosis increases[9], the prevalence of hip fracture increasing with age. The overall male-to-female incidence ratio of hip fracture in the present study was 1.8. In patients with hip fractures, trabecular weakening substantially contributes to further bone loss upon pre-existing age-related osteoporosis[10]. The present study has found that among males there has been a increase in the proportion of Pertrochanteric fractures with age. assuming that, among men, osteoporosis might not be strongly associated with hip fractures. This may also reflect a higher frequency of high energy injuries due to more intense physical activity. Hip fractures in elderly may not always be associated with osteoporosis. Previous studies have raised the question that, in certain populations, falling and not osteoporosis was the main cause of hip fracture[11].

REFERENCES

1. Singh A, Thong G, Laloo N, Singh AM. Management of trochanteric fractures. Indian Journal of Othopaedics. 2006 Jan;40(2):100.
2. Azar FM, Beaty JH. Campbell's Operative Orthopaedics. 11th ed. Elsevier, 2007:3237-41.
3. Dimai HP, Svedbom A, Fahrleitner-Pammer A, et al. Epidemiology of hip fractures in Austria: evidence for a change in the secular trend. *Osteoporos Int.* 2011;22:685–692.
4. Boyd HB, Griffin LL. Classification and Treatment of Trochanteric Fractures; Arch Surg.1949;58(6):853-66.
5. Zha GC, Chen ZL, Qi XB, Sun JY. Treatment of pertrochanteric fractures with a proximal femur locking compression plate. Injury, Int. J. Care Injured. 2011 Nov; 42(11):1294-9.
6. Kulkarni GS. Treatment of Trochanteric Fractures of the Hip by Modified Richard's Compressing and Collapsing Screw. Ind J Orthop. 1984:18[1]:30-34.
7. Sahistrand T. The Richards Compression Screw and Sliding Hip Screw System in the treatment of

Intertrochanteric fractures of the Hip. Acta Orthopaedica Scandinavica.1974 Jan;45:213-19.
8. Martinez AA, Cuenca J, Panisello JJ, et al. Changes in the morphology of hip fractures within a 10-year period. *J Bone Miner Metab*. 2001;19:378–381.
9. Pfeilschifter J, Cooper C, Watts NB, et al. Regional and age-related variations in the proportions of hip fractures and major fractures among postmenopausal women: the Global Longitudinal Study of Osteoporosis in Women. *Osteoporos Int.* 2012;8:2179–2188.
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10. (10) Brauer CA, Coca-Perraillon M, Cutler DM, Rosen AB. Incidence and mortality of hip fractures in the United States. *JAMA*. 2009;14:1573–1579.
11. (11) Marks R, Allegrante JP, Ronald MacKenzie C, Lane JM. Hip fractures among the elderly: causes, consequences and control. *Ageing Res Rev*. 2003;2:57–93.