

# Epidemiological analysis of hip fractures at a tertiary care hospital: A retrospective study

P Siva Rama Krishna

Associate Professor, Department of Orthopaedics, Viswabharathi Medical College, Kurnool, Andhra Pradesh, INDIA.  
**Email:** [sivaramps76@gmail.com](mailto:sivaramps76@gmail.com)

## Abstract

**Background:** in the elderly people, Hip fractures which are a consequence of osteoporosis are a main cause of morbidity and mortality. The present study is done to analyse the epidemiological profile of hip fractures at a tertiary care hospital.

**Materials and Methods:** This is a retrospective study conducted at SVS Medical college and general hospital, Mahbubnagar, on patients with hip fractures between January 2020 and December 2020. Different parameters like age, gender, nature of trauma, associated co morbidities by going through the 120 case files of patients and Radiographs were observed for type of fracture, presence of osteoporosis (Singh's index). **Results:** in our study 52% were males and 48% were females having a mean age of 57.8 years. 44 % of the patients belong to age group of 60-75 years. In aged patients, a low energy simple fall was responsible for >87% of fractures bearing osteoporosis. Different types of Hip fracture included intertrochanteric 60%, femoral neck 31% and sub trochanteric 9%. many number of patients were having medical comorbidities. **Conclusion:** the occurrence of hip fractures in the elderly people is on rising trend and increasing health care problem. Various preventive measures for osteoporosis and falls will decline the prevalence of these fractures.

**Key words:** Hip fractures, Epidemiology, Osteoporosis,

## \*Address for Correspondence:

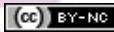
Dr P Siva Rama Krishna, Associate Professor, Department of Orthopaedics, Viswabharathi Medical College, Kurnool, Andhra Pradesh, INDIA.

**Email:** [sivaramps76@gmail.com](mailto:sivaramps76@gmail.com)

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fall.<sup>4</sup> Different preventive strategies against hip fractures have been proposed as hip fractures were involved with immense monetary costs<sup>5</sup> Hip fractures in elderly are mainly fragility fractures occurring due to osteoporosis and trivial falls. Whereas in young adults, they usually occur due to high energy trauma such as motor vehicle accidents and falls from height. Various studied risk factors for hip fractures include increasing age, females, ethnicity, smoking, alcohol abuse, osteoporosis, steroid intake, low sunlight exposure and recreational activities.<sup>6,7</sup> India is the second largest populous country in the world but there are only few studies on the epidemiology of hip fractures<sup>8,9</sup> The purpose of our study is to determine the epidemiological analysis of hip fractures at tertiary care hospital.

## INTRODUCTION

In recent years, Osteoporosis posed a significant public health problem because of the increase in elderly population<sup>1</sup> in the aging population.<sup>1-3</sup> Hip fracture is the most valid epidemiologic marker of osteoporosis, Hip fractures posed serious problems to the health sector although having advances in the prevention and treatment of these injuries. With increased longevity, hip fractures starts appearing at increasing rates causing increased morbidity, decreased quality of life and further chance of

## MATERIALS AND METHODS

This hospital based retrospective study was done in the Orthopaedics department of SVS Medical college and General Hospital, Mahbubnagar, Telangana from January 2020 to December 2020. patients admitted in the orthopaedics department during January 2020 to

December 2020 with hip fractures were studied after obtaining ethical clearance from the institutional ethics committee. Patients of all ages and all hip fractures are included in this study and written consent forms were obtained from them. Hip fractures included fractures of femoral neck, intertrochanteric and sub trochanteric area. From the MRD, central registration (CR) numbers of the patients admitted during the study period were obtained. With the CR numbers, case files were retrieved from the department. Case files of patient were studied for various parameters including age, gender, place of residence, duration of trauma, mechanism of injury, co morbidities, Radiographs were assessed for type of fracture, presence of osteoporosis (Singh's index).<sup>10</sup> The data was entered in Microsoft Excel and statistical analysis was done using SPSS software.

## RESULTS

The study comprised 120 patients which includes 62 women and 58 men.(table 1)

**Table 1:** Gender distribution

gender	Number of patients	percentage
male	62	52
female	58	48

The mean age of patients was 57.8 years with a range of 8-79 years. Majority of patients with hip fractures were between 60- 75 years (44%) and lowest number were seen in patients less than 20 years. (table 2)

**Table 2:** age wise distribution of fractures

Age (years)	Number of patients	percentage
<20	8	7
20-40	22	18
40-60	26	22
60-75	53	44
75	11	9

Most fractures (47%) in males having age less than 60 years, while in females maximum fractures (44%) occurred in ages more than 60 years. In patients aged >60 years, low energy trauma with fall from standing height was the main cause for fracture in >87% of patients While in patients < 60 year old, high energy trauma due to RTA or FFH was leading cause of fracture in majority of patients >91%. Hip fracture characteristics included intertrochanteric fractures (60%), followed by neck fractures (31%) and sub trochanteric fractures (9%) (Table 3).

**Table 3:** hip fracture location

Fracture anatomy	Number of patients	percentage
Intertrochanteric	72	60
Neck of femur	37	31
Sub trochanteric	11	9

In patients >60 years old, diminished vision and neurological problems including old stroke, dementia, Parkinson disease (34%) were responsible for the trivial fall and subsequent fracture

## DISCUSSION

Hip fractures as a result of osteoporosis are a major cause of disability and morbidity in the elderly population. Most fractures (47%) occurred in males with age less than 60 years, while most fractures (44%) occurred in females with age more than 60 years. Occurrence of more fractures in females of age more than 60 years might be due to the fact that the bone mineral density (BMD) starts falling with increasing age and postmenopausal women exposed to osteoporosis due to losing the protective effect of estrogen on bone mineralization,<sup>11</sup> HRT among women may have a protective role against fractures.<sup>12</sup> But in India lack of acceptance of HRT among postmenopausal population can be a major reason for increasing fragility fractures. In our study, prevalence of hip fractures was more in males. Nordin reported about the earlier onset of osteoporosis in Indian men.<sup>13</sup> In our study also, falls from the standing height is the cause for many fractures in elderly with direct impact on hip. Jarnlo G studied on the various factors causing falls followed by fractures in the elderly.<sup>14</sup> Most hip fractures are caused by stumbling and tripping indoors at a level ground. Co morbidities including hypertension, diabetes, neurological impairment and diminished vision were observed in the study which might have contributed to the falls and fractures in elderly. Based on Singh's grading on hip radiographs, osteoporosis is classified<sup>10</sup> and singhs grade 3 pattern of trabeculae in proximal femur was found in 75% of hip fractures suggesting osteoporosis. with this it is understood that if proper precaution and treatment is taken, hip fractures can be avoided. Ahuja *et al.* in their study reported that simple measures like railings on the bedside and wall side, high friction bathroom tiles, trochanteric hip pads, adequate lighting play an important role in decreasing hip fractures.<sup>15</sup>

## CONCLUSION

The occurrence of hip fractures in the elderly people is on rising trend and increasing health care problem. Various preventive measures for osteoporosis and falls will decline the prevalence of these fractures

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