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RESEARCH ARTICLE

EVALUATION OF RISK FACTORS OF HIP FRACTURES: A RETROSPECTIVE STUDY

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ABSTRACT

Back ground: Hip fractures are breaks in the neck and Perirtrochanteric region. These are serious injuries that most often occur in elderly persons and create a major social, psychological, economical and public health problem in this old age. Most hip fractures require surgery, hospitalization, and extended rehabilitation. This puts lot of economical and social burden on the public and government sectors. **Objectives**: To assess the risk factors of hip fractures among the patients of all age groups presenting for cognitive assistance. **Methods:** This study was conducted among the patients admitted in Orthopaedic Department Government Medical College Jammu. All the patients regardless of age, sex and educational level admitted with hip fractures during the period of June 2016 to May 2018 were included in the study. **Results**: There were 522 patients admitted with hip injuries. Among these 522 patients that were admitted with hip fractures, there were 293(56.86%) female and 229(43.14%) male; the mean age of the patients was 50.64 years. The lower limit of age was 3 years and upper limit was 100 years. The majority of the patients 41.37% were in between the age group of 60 to 79 years. **Conclusion**: The hip fractures increases as the age advances. This temporal rise can be reduced with nutritional supplements for the prevention of osteoporosis. The prevention of osteoporosis will reduce the hip fractures that will ultimately alleviate the disability and burden of the disease.

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INTRODUCTION

Elderly people particularly females suffer from osteoporosis and hip fractures are very common. In tertiary care hospitals hip fractures are most common reason for admissions and lot of expenses are being spent by public as well as governments. In United Kingdom yearly about 75000 patients with hip fractures are admitted and treated. By 2050 this number of patients is projected to be doubled considering the aging population in United Kingdom (Tim Kenny, 2011). The number of hip fractures is going to rise as the elderly population increases (Foster, 2014). Children suffer from hip fractures less commonly as compared with adults as their bones are more plastic and muscle mass is less. Less than 1% of the pediatric fractures occur in the hip area. Hip fracture in children often results from high energy trauma but in adults the hip fractures usually results from minor trauma. In children the hip fractures are difficult to treat and manage and avascular necrosis of the femoral head is a grave complication leading to high morbidity (Beaty, 2006; McCarthy, 2016; LeBlane, 2014).

Elderly population suffer from hip fractures as a result of fall on the ground or direct blow to the hip area. Some of the diseases for example diabetes mellitus, rheumatoid arthritis, osteoporosis, malignancy, steroid intake, tobacco smoking and alcoholism cause bone weakness leading to insufficiency fractures in the older people (LeBlane, 2014). Hip fractures cause lot of social, economical and personal burden to the patient and care takers. The ball and socket joint gives mobility for perineal care and when there is a fracture around hip area that causes difficulty in walking and self care of the elderly population. Although hip fractures are not an orthopaedic emergency but its treatments is urgently desired by the patients and their families. Urgent treatment boosts the psychological impact and prevents the patients from the pulmonary, sedentary and thromboembolic complications (Kannus, 2000). Femoral neck fractures and inter-trochanteric fractures are most common injuries around hip in elderly people. About 90% of the fractures around hip fall in these two categories. Stress fractures of proximal femur are very rare in the elderly population but can be a diagnostic dilemma in young active athletes mimicking tendinitis and muscle spasm

(Waure, 2014). In elderly population osteoporosis in which amount and quality of bone is reduced lead to fragility fractures and create major morbidity. Osteoporosis is a silent killer and hidden until fractures occur (Mannstadt *et al*., 2014). Hip fractures in the elderly population account for major health care expenditure and result in mortality of 20% of the patients above 60 years (Johnell, 2006; Kanis, 2008) . In developing countries like India majority of hip fractures are treated by bone setters. Osteoporosis and falls in the home are the major risk factors in the elderly population presenting with hip fractures. It is estimated that each year 30 to 60% of the public above 60 years suffer from falls. 90% of the hip fractures in the older people occur due to fall while standing from a sitting place. The life time risk of hip fractures is 17.5% for female and 6% for male (Oden, 1998). Socio economic status and educational level inversely affects the incidence of hip fracture (Brennan, 2011; Quah, 2011). General medical conditions for example cardiovascular diseases, rheumatic diseases and pulmonary diseases increase the risk of hip fracture in patients above 60 years of age (Guilley, 2011). This will help at national, personal, economical, social and international level to prevent the incidence of fractures and reducing the socio economic burden on national resources. Hence this study was planned to evaluate the risk factors of hip fractures of all age groups particularly in the older people.

METHODS AND SUBJECTS

This study was conducted in Orthopaedic Department of Government Medical College Jammu among the patients admitted for hip fracture during the period of June 2016 to May 2018. All the patients irrespective to age and sex having hip fracture were included in the study. The data regarding age, sex, educational level, socio economic status, side of the hip involved and mode of the injury was retrieved from the department with the help of computer. A total of 522 patients were included in the study. Patients who died or the patients who were unwilling to be included in the study were excluded. The age was divided in five groups with difference of twenty. Sex was defined as male and female. The education level was defined as illiterate or literate. Patients who were able to read or write some words were considered as literate. The socioeconomic status was defined as low and high. Side of the hip was left and right or both. Mode of injury was road side accident, fall on ground and homicidal. The mode of operation, operative approach, the implants used and post-operative events including union rate was not part of study. Rehabilitation was also not recorded and needs a separate study to assess different tools used. The consent was retrieved from patients to be included in the study. Permission from ethical committee of the hospital was taken. The data was analyzed in frequencies.

RESULTS

There were total 522 patients admitted in the Orthopaedic Department of Government Medical College Jammu. Among these 133 patients who were admitted for hip fracture, there were 293(56.86%) female and 229 (43.14%) male patients. The mean age of the patients was 50.64 years and the Standard Deviation was 19.94 years. The lower limit of age was 3 years and upper limit was 100 years. The majority of the patients 41.37% were in between the age group of 60 to 79 years. The less common number of patients was in extremes of age groups there were, 4.12% below the age of 19 years and 9% above the age of 80 years. Depending upon mode of trauma in these 522 patients, 2/3rd sustained low energy trauma, and 1/3rd sustained high energy trauma with most of them in Subtrochanteric group. Excluding osteoporosis pathological fractures represented 5% of fractures. 64% patients were on treatment for associated comorbidities like cardiovascular hypertension (29%), Diabetes Mellitus (16%), Old Stroke (6%), COPD 10%, dementia 5% , and 7 % on miscellaneous medication . Femoral Neck fractures are rear in young adults as observed in this study and almost always associated with high energy trauma. There is high incidence of avascular necrosis and non-union in this group.

Table 1.

Sex	No. of patients	%
Male	229	43.14%
Female	293	56.86%

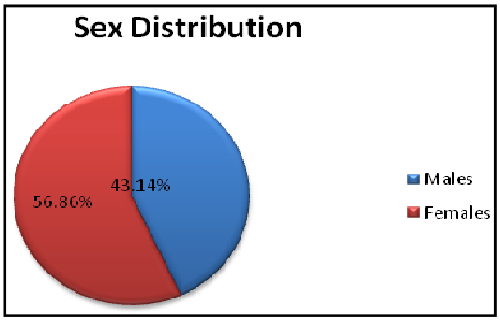


Table 2. Age Distribution

Age group	No. of patients	%
0-19	22	4.21%
20-39	85	16.28%
40-59	152	29.11%
60-79	216	41.37%
>80	47	9.00%

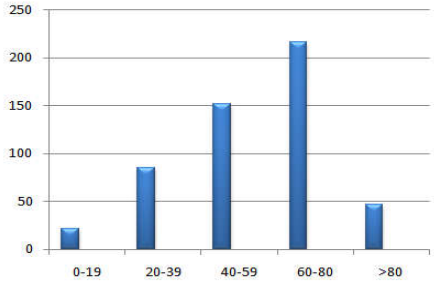
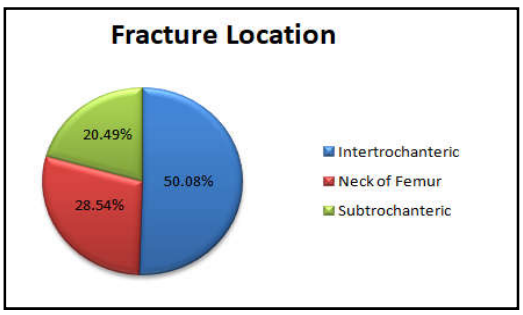


Table 3. Location of fracture

Fracture	No. of patients	%
Intertrochanteric	266	50.08%
Neck of Femur	149	28.54%
Subtrochanteric	107	20.49%



Precautions to be taken by older adults for the prevention of falls:

- Exercise regularly for increasing leg strength and improving balance.
- Get their medication reviewed in view of dizziness or drowsiness.
- Ophthalmological yearly consultation in view of vision defects and for timely intervention if needed.

Measures for reducing Hip fractures in older adults:

- Supplementation e.g. Vitamin D etc
- Weight bearing exercises
- Screening for osteoporosis and timely interventions. Etc

Conclusion

Increasing age is associated with increased incidence of hip fractures. Nutrition supplementation for osteoporosis can reduce this temporal rise and hence associated burden and disability. Addressing the factors causing falls in elderly population can reduce the hip fracture associated mortality and morbidity significantly as these fractures are most of the times associated with already weakened bone in this age group which predisposes them to these fractures. Fixation of fractures is not the final treatment but actually it is beginning of treatment which includes decreasing the incidence of hip fractures, educate elderly about bone health and healthcare programmes.

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