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RESEARCH ARTICLE

EPIDEMIOLOGY OF HIP FRACTURES IN JAMMU

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ABSTRACT

Introduction: The aim of this study is to study the epidemiology of hip fractures in a tertiary care hospital in north India. **Method :** This is a retrospective study conducted among admitted patients with fractures around hip in Government Medical College Jammu. Relevant clinical information like type of fracture, gender, age , mechanism of injury and associated injuries were recorded. The data recorded were analyzed in frequencies. **Results :** A total of 522 patients were admitted with hip fractures from June 2016- May 2018. Hip fractures were seen more among females than males. Around 50% fractures were seen in elderly patients with age above 60 years. Intertrochanteric fractures were most common fractures around hip followed by neck of femur fractures. **Conclusion:** Hip fractures in elderly are a source of morbidity and mortality. Most of these fractures result due to trivial trauma to already weakened bone. Multiple safety measures to prevent injurious falls and preventing osteoporosis and patient education regarding bone health are needed.

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INTRODUCTION

Hip fractures are relatively common injuries and epidemiological studies have suggested increasing incidence of these fractures because of increasing life expectancy .Hip fractures frequently encountered in older adult , are associated with osteoporosis. More than 90% of hip fractures are caused by simple falls. Due to their frequency ,hip fractures are one of the most challenging public health concerns ,often leading to considerable consequences including disability and premature death. Ongoing pain and limited physical activity can severely compromise quality of life .In addition to morbidity and mortality , hip fractures impose an enormous economic burden on health care system. The Future incidence of hip fractures is expected to double to 2.6million by 2025 and to 4.5 million by 2050 (Wilson, 2007). Similarly In Asia incidence share is expected to change from 26% of total world incidence in 1990 to 37% by 2025 and to 45% by 2050 (Bucholz Robert *et al.*, 2010). Moreover, since there is an exponential increase in hip fracture prevalence with age (Samelson *et al.*, 2002), as populations ages and longevity increases worldwide, these injuries are likely to appear at accelerated rates (Wilson RT , Wallace, 2007). Hip fractures can be classified into two major anatomic types: Trochanteric and Cervical.

It has been suggested that these two fracture types may have different risk factors. Low bone mineral density increases persons likelihood of sustaining a hip fracture in a fall and is a well established risk factor (Greenspan *et al.*, 1994, Johnell *et al.*, 2005). In particular trochanteric fractures are more closely associated with severe and generalized bone loss than fractures in cervical region. Patients with trochanteric fractures had significantly lower serum vitamin D levels compared with those with cervical hip fractures (Dretakis *et al.*, 2011). Indeed, with a better understanding of how such fractures occur, how debilitating these injuries are, what subsequent treatment is needed for these injuries to reduce their complications and to restore optimal function to the affected individuals and joints, progress in this area is likely to be very promising.

MATERIALS AND METHODS

Our study is a hospital based retrospective study which involved records of patients admitted with hip fractures from June 2016 – May 2018 in GMC Jammu. Relevant clinical information like type of fracture, gender, age , mechanism of injury and associated injuries were recorded. Our Hospital is lone tertiary care and bone and joint surgery hospital in Jammu province so we receive patients from other peripheral hospitals as well. After admission in hospital, patients were evaluated in terms of above mentioned characteristics and for surgical treatment which needed optimization of their general medical

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condition. Patients were operated at an average of 1 week after trauma, in routine theatre days by usual methods of fixation as per type of fracture and classifications. The data recorded was analyzed in frequencies.

RESULTS

Our study recorded Total of 522 patients with Hip fractures during June 2016 – May 2018 with 56.14 % males and 43.86% females. Fracture categorization was neck of femur 28.54%, intertrochanteric fractures 50.09% and subtrochanteric fractures 20.49%, indicating that most of fractures were intertrochanteric followed by neck of femur. Highest numbers of fractures were observed in age group of 60-79 years (41.37%) followed by 40–59 years (29.11%). Females were predominant in higher age group fractures of intertrochanteric fractures (59.78%) and neck of femur fractures (57.81%) while females were less in subtrochanteric fractures (33.33%) as such male female ratio for hip fractures was about 2/3.

Table 1. Gender Distribution

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. Fracture location

Fracture	No. of Patients	%
Intertrochanteric	266	50.09%
Neck Femur	149	28.54%
Subtrochanteric	107	20.49%

In terms of Mechanism of injury, 2/3rd had low energy trauma (slip in bathroom, fall from bed, missing stair steps, fall on to ground) and 1/3rd had high energy trauma (road traffic accident, fall from height) mostly in subtrochanteric group. Pathological fracture excluding osteoporosis represented 5% of fractures which included lytic lesions either primary and secondaries at proximal femur from other sites. 64% patients were on treatment for associated medical conditions like cardiovascular and hypertension 29%. diabetes mellitus 16%, old stroke 6%, COPD 10%, dementia 5%, 7 % miscellaneous medication for other conditions associated, with hypertension being commonest followed by diabetes mellitus.

DISCUSSION

Hip fractures are serious fall injuries which are associated with long-term functional impairment, hospital admission and increased mortality (Magaziner *et al.*, 2000, Marks *et al.*, 2003). As the population ages, the number of hip fractures is likely to increase which will increase the health care costs related to these injuries. More than 95% of hip fractures are caused due to fall (Parkkari *et al.*, 1999), most often by sideways low energy fall with impact onto the hip (Hayes *et al.*, 1993).

Out of those who fall, 20% to 30% suffer moderate to severe injuries such as hip fractures or head traumas that reduce mobility and independence, and increase the risk of premature death mostly caused due to complications of fractures (Sterling *et al.*, 2001). Usually cause of fall is associated Co morbidity in every patient which range from cardiovascular dysfunction to visual abnormality which was as reported in literature (Marks *et al.*, 2003, Wilson, 2007). More Than 60% of people with mortality from fall related injuries are above 75 years and older. In both men and women, hip fracture rates increase exponentially with age, persons aged 85 and older are 10 to 15 times more likely to sustain hip fractures than are those aged 60 to 65. Women are reported to sustain about 80% of all hip fractures (Stevens, 2000) but in present study we had 3:2 ratio the reason being geographical variation and in Indian subcontinent men are equally osteoporotic as women due to nutritional causes and lack of awareness about bone and mineral health. Out of all fall-related injuries, hip fractures cause the greatest number of deaths and lead to the most severe health problems and reduced quality of life (Wolinsky 1997), 25% of community-dwelling older adults sustaining hip fractures remain institutionalized for at least a year and significant challenge and burden on economy. With such a grave morbidity and hospital burden, it is important to have measures to decrease incidence of hip fractures. Hip fractures can be prevented by preventing falls, elderly can stay independent and reduce their chances of falling.

Conclusion

Hip fractures need special consideration in terms of morbidity and mortality associated with them. Most of these fractures result due to trivial trauma to already weakened bone due to mineral imbalance in the bone making bones fragile and brittle. Almost 20 to 25% orthopaedic admissions with lot of economical burden on health budget, so preventive measures for fall can be rewarding in future. Rigorous safety measures to prevent injurious falls and treatment aimed at preventing osteoporosis would benefit men and women in this age group. Fracture fixation 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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