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INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/16888

DOI URL: <http://dx.doi.org/10.21474/IJAR01/16888>



RESEARCH ARTICLE

CLINICAL PROFILE OF HIP FRACTURE IN TERTIARY CARE HOSPITAL: A RETROSPECTIVE ANALYSIS

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Manuscript Info

Manuscript History

Received: 15 March 2023

Final Accepted: 18 April 2023

Published: May 2023

Key words:-

Hip Fracture, Injury, RTA

Abstract

Introduction: The existing literature on the injury patterns of hip fractures in India is sparse, despite the fact that hip fractures are a significant cause of morbidity and mortality in the aged. In order to provide tailored interventions to prevent hip fractures, it is crucial to understand the damage profile of these patients.

Methods: This single-center, retrospective study was carried out in 2021–2022 by the Department of Orthopaedics at the Shri Ram Murti Smarak Institute of Medical Sciences in Bareilly (UP). 100 patients who had hip injuries. Each patient gave written informed consent and agreed to participate in the trial. During admission, information was gathered through face-to-face interviews with patients and/or their relatives in addition to a review of medical records.

Results: The average age was 69.76 ± 11.56 years. Of the patients, 59 percent were men, and 41 females (41%) were present. The most common comorbidity was hypertension (56 percent), which was followed by diabetes (33 percent), heart disease (15 percent), cancer (12 percent), and thyroid disease (8 percent). According to the AO fracture classification, fracture type 31A (63%) outnumbered fracture types 31B (26%), and 32 (11 percent). Patients suffered fall injuries in 75% of cases, RTA injuries in 17% of cases, and other injuries in 8% of cases.

Conclusion: The most common way of injury for elderly hip fractures, especially in women, is a fall from a standing height. The majority of falls are caused by environmental risks and postural alterations, whereas the majority of RTAs are caused by pedestrian accidents.

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Introduction:-

The one-year death rate following hip fractures is reported to be as high as 30%. Hip fractures are a major cause of morbidity and mortality in the senior population.^{1,2} Hip fractures are thought to occur in roughly 1.6 million people per year worldwide, but due to the ageing population, this number is predicted to rise to 2.6 million by 2025 and 4.5 million by 2050.^{3,4} Few studies have examined the prevalence and epidemiology of hip fractures in India despite the morbidity linked to senior hip fractures.⁴ The real incidence of hip fractures in India is therefore unknown, but it is believed that there are around 120 fractures per 100,000 people over the age of 50 per year, with greater rates in

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women.⁵ According to the 2011 census, India has close to 170 million people over the age of 50, which equals roughly 0.2 million hip fractures annually.

In order to create tailored interventions to avoid hip fractures, it is crucial to comprehend the clinical and damage characteristics of these patients. As people age, their mobility and balance deteriorate, increasing their risk of falling.⁶ In addition, aged people may be more vulnerable to different environmental risks, which may finally result in accidents and fractures due to low visual activity, underlying medical comorbidities, pharmaceutical side effects, etc.⁷ Even though falls cause more than 90% of hip fractures, some studies have found that a significant portion of hip fractures in developing nations are also caused by road traffic accidents (RTAs).^{8,9} Additionally, a significant portion of the elderly population in developed nations reside in nursing homes, and the majority of preventive programmes are focused on reducing falls in these environments.¹⁰ The injury mechanisms for falls may be different in India, where the large majority of senior people live at home, so these programmes may not be appropriate there. Few research have examined the damage processes leading to hip fractures in India to date. In order to assess demographic and injury patterns, we conducted a prospective study of hip fractures at our hospital. Demographics and fracture patterns were linked to injury mechanisms, with the great majority of hip fractures being thought to be the result of falls.

The present study was aimed to evaluate the clinical profile of hip fracture.

Methods:-

In the year 2021–2022, the Department of Orthopaedics at the Shri Ram Murti Smarak Institute of Medical Sciences in Bareilly conducted this single-center, retrospective study (UP). One hundred patients with hip injury. All patients agreed to participate in the study and provided written informed consent. Data were collected by in-person interviews of patients and/or relatives during admission along with review of medical records.

Statistical analysis

Data were expressed as frequency, percentage, mean, standard deviation (SD).

Results:-

Baseline Characteristics

According to the table, the average age was 69.76 11.56 years. Of the patients, 59 percent were men and 41 females (41%) were present. The most common comorbidity was hypertension (56 percent), which was followed by diabetes (33 percent), heart disease (15 percent), cancer (12 percent), and thyroid disease (8 percent).

Type of Fracture

According to Table 2, the most frequent fracture was 31A, which represented 63% of all fractures, followed by 31B, which represented 26%, and 32. (11 percent).

Mechanism of Injury

According to Table 3, there were fall injuries for 75% of the patients, RTA injuries for 17% of the patients, and miscellaneous injuries for 8% of the patients.

Discussion:-

Elderly people frequently suffer from hip fractures, which have grave repercussions. Understanding the features of hip fractures as well as the mechanisms of injury is crucial given the growing geriatric population in India. There were almost similar amounts of men and women in this prospective research of hip fractures in people aged 50 or older, and intertrochanteric fracture was the most prevalent kind. The primary mechanism of injury, according to the current investigation, was falling from a standing height, particularly when the patient was an elderly woman with a single hip fracture. Additionally, according to our findings, RTA—particularly accidents involving pedestrians—caused about one-fifth of hip fractures.

Interviews with the patient and their loved ones served as the basis for the evaluation of the injury mechanisms. When there was no witness to the incident, the patient's memory was the only source of information used to determine the mode of injury. An accurate description of the injury mechanism can be impacted by comorbidities like dementia, the development of dizziness or lightheadedness before the accident, delirium during the hospital

stay, etc. Although these factors might have caused a recall bias, this bias would have been reduced by the prospective nature of the study and the simultaneous interviews of patients and their relatives or attendants.

The average age was 69.76 \pm 11.56. Of the patients, 59 percent were men, and 41 females (41%) were present. The most frequent comorbidity was hypertension (56%) and was followed by diabetes (33%) heart disease (15%) cancer (12%) and thyroid disease (8 percent). In a study by **Moayyeri et al**,¹¹ A total of 555 new cases of hip fracture (male: 284; female:271) were recorded during the study period. In a study by **Endo et al**,¹² nine hundred eighty-three patients (206 males and 777 females) met the criteria for inclusion in this study. The mean age at the time of fracture for the men and women was 80.1 years and 79.6 years, respectively. Sixty-eight percent of men and 74% of women were between the ages 65 and 84. This difference was not statistically significant. The population was predominantly Caucasian in both genders (94% of men and 93% of women).

According to the AO fracture classification, fracture type 31A represented 63% of all fractures, followed by 31B (26%), and 32 (11 percent). Patients made up 75% of those who had fall injuries, 17% who had RTA injuries, and 8% who had other injuries. In a study by **George et al**,¹³ based on the AO fracture classification, 31A2.2 (n=91, 32.2%) was most common followed by 31A1.3 (n=35, 12.4%). The majority of patients reported fall as the mode of injury (n=217, 76.7%) while 60 patients (21.2%) had injuries as a result of an RTA.

Conclusion:-

According to the current study, falls from standing height are the main cause of hip fractures in India. As the mechanism of injury for hip fracture, falls were linked to female sex and advancing age. The majority of falls were caused by a wet floor or postural alterations, indicating that fall counselling should include instruction on environmental safety precautions and postural modifications.

Table 1:- Baseline Characteristics.

Baseline Characteristics	Frequency (n=100)	Percentage
Age Group (Years)		
50-59	24	24%
60-69	26	26%
70-79	36	36%
≥ 80	14	14%
Mean Age	69.76 \pm 11.56	
Gender		
Male	59	59%
Female	41	41%
Comorbidities		
Hypertension	56	56%
Diabetes	33	33%
Heart Disease	15	15%
Malignancy	12	12%
Thyroid Disease	8	8%

Table 2:- Type of Fracture.

Type of Fracture	Frequency (n=100)	Percentage
31A	63	63%
31B	26	26%
32	11	11%

Table 3:- Mechanism of Injury.

Mechanism of Injury	Frequency (n=100)	Percentage
Fall	75	75%
RTA	17	17%
Other	8	8%

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