



OSTEOARTHRITIS IN ELDERLY PATIENTS: AN ORIGINAL RESEARCH STUDY FROM A TERTIARY CARE HOSPITAL

Geriatrics

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ABSTRACT

Background: Osteoarthritis (OA) is the most prevalent degenerative joint disease and a leading cause of pain, disability, and reduced quality of life among the elderly population worldwide. With increasing life expectancy and demographic transition, the burden of OA is rising rapidly, particularly in low- and middle-income countries such as India. However, hospital-based data describing the clinical and epidemiological profile of OA among elderly patients in tertiary care settings remain limited. **Methods:** A hospital-based original research study was conducted among elderly patients aged ≥ 60 years attending the outpatient and inpatient departments of a tertiary care hospital over a one-year period. Patients diagnosed with osteoarthritis based on clinical and radiological criteria were enrolled after obtaining informed consent. Sociodemographic characteristics, clinical features, joint involvement, comorbidities, functional status, and radiological severity were documented using a structured proforma. Statistical analysis was performed using descriptive and inferential statistics. **Results:** A total of 200 elderly patients with osteoarthritis were included. The mean age was 66.8 ± 5.9 years, with a female predominance. Knee osteoarthritis was the most common presentation, followed by hip and hand involvement. Pain and functional limitation were the predominant symptoms. Increasing age, female gender, obesity, and presence of comorbidities such as hypertension and diabetes mellitus were significantly associated with higher disease severity. **Conclusion:** Osteoarthritis is highly prevalent among elderly patients attending tertiary care facilities, with knee involvement being the most common. Early identification, weight management, and integrated multidisciplinary care are essential to reduce disability and improve functional outcomes in this vulnerable population.

KEYWORDS

Osteoarthritis; Elderly; Degenerative Joint Disease; Knee Osteoarthritis

INTRODUCTION

Background And Global Relevance

Osteoarthritis (OA) is a chronic, progressive degenerative disorder characterized by the breakdown of articular cartilage, subchondral bone remodeling, osteophyte formation, and synovial inflammation, leading to pain, stiffness, and functional impairment. It is the most common form of arthritis and a major contributor to disability among older adults globally. According to the Global Burden of Disease (GBD) 2019 study, osteoarthritis affects more than 528 million people worldwide, representing a significant cause of years lived with disability, particularly among individuals aged over 60 years¹.

The prevalence of OA increases markedly with age due to cumulative mechanical stress, age-related changes in joint tissues, and the presence of metabolic and inflammatory risk factors. With global population ageing, OA is expected to become an even greater public health challenge in the coming decades².

Indian Epidemiological Data

India is undergoing a rapid demographic transition, with a growing elderly population. Recent estimates suggest that osteoarthritis affects approximately 22–39% of the Indian population, with higher prevalence among older adults and women³. Community-based studies from different regions of India have reported knee osteoarthritis prevalence ranging from 28% to 46% among individuals aged ≥ 60 years^{4,5}. Urbanization, sedentary lifestyles, obesity, and increased life expectancy further contribute to the rising burden of OA in India.

Clinical Importance

Osteoarthritis significantly impairs mobility, independence, and quality of life among elderly individuals. Chronic pain and joint stiffness often lead to reduced physical activity, muscle weakness, and increased risk of falls and fractures. Additionally, OA is frequently associated with multiple comorbidities such as hypertension, diabetes mellitus, and obesity, complicating management and increasing healthcare utilization⁶.

Problem Statement

Despite the high burden of osteoarthritis among the elderly, there is limited hospital-based data from tertiary care centers in India

describing the demographic and clinical profile of affected patients. Such data are essential for planning targeted interventions, optimizing clinical management, and allocating healthcare resources effectively.

Rationale Of The Study

Understanding the epidemiological and clinical characteristics of osteoarthritis among elderly patients attending tertiary care hospitals can help identify high-risk groups, common patterns of joint involvement, and factors associated with disease severity. This knowledge is crucial for developing evidence-based strategies for early diagnosis, prevention of disability, and comprehensive management.

Research Objectives

The general objective of the study was to assess the clinical and epidemiological profile of osteoarthritis in elderly patients attending a tertiary care hospital.

The specific objectives were to describe the demographic characteristics of elderly patients with osteoarthritis, identify the pattern of joint involvement, assess clinical severity and functional status, and evaluate associated comorbidities.

MATERIALS AND METHODS

Study Design and Setting

This original research study was conducted as a hospital-based observational study at a tertiary care teaching hospital in India over a period of one year.

Study Population And Sample Size

Elderly patients aged 60 years and above attending the outpatient and inpatient Departments of Orthopedics and Geriatric Medicine, Sardar Patel Medical College & Associated Group of Hospitals, Bikaner, Rajasthan diagnosed with osteoarthritis, were included in the study. A sample size of 200 patients was calculated based on previous prevalence studies, assuming a confidence level of 95% and an allowable error of 7%.

Inclusion And Exclusion Criteria

Patients aged ≥ 60 years with a clinical and radiological diagnosis of osteoarthritis were included. Patients with inflammatory arthritis, secondary osteoarthritis due to trauma or infection, malignancy

involving joints, or those unwilling to provide informed consent were excluded.

Data Collection Tools

Data were collected using a pre-tested structured proforma that included sociodemographic details, clinical symptoms, duration of illness, joint involvement, comorbidities, body mass index, and radiological grading using the Kellgren–Lawrence system.

Ethical Considerations

The study was approved by the Institutional Ethics Committee. Written informed consent was obtained from all participants, and confidentiality of patient information was strictly maintained in accordance with ICMJE and Declaration of Helsinki guidelines.

Statistical Analysis

Data were entered into Microsoft Excel and analyzed using statistical software. Categorical variables were expressed as frequencies and percentages, while continuous variables were summarized using mean and standard deviation. Associations between variables were assessed using chi-square test, with a p-value <0.05 considered statistically significant.

RESULTS

Demographic Characteristics

A total of 200 elderly patients with osteoarthritis were included in the study. The mean age was 66.8 ± 5.9 years. Females constituted a higher proportion of cases compared to males. Most patients belonged to the 60–69 years age group. (Table 1)

Pattern of Joint Involvement Knee osteoarthritis was the most common presentation, either unilateral or bilateral, followed by hip and hand involvement. (Table 2)

Clinical Severity And Comorbidities

Pain and morning stiffness were the most frequently reported symptoms. A significant proportion of patients had associated comorbidities, with hypertension and diabetes mellitus being the most common. (Table 3)

Radiological grading revealed that the majority of patients had moderate to severe disease based on Kellgren–Lawrence criteria.

DISCUSSION

The present study highlights the substantial burden of osteoarthritis among elderly patients attending a tertiary care hospital. The mean age and female predominance observed in this study are consistent with findings from previous Indian and international studies, which report higher OA prevalence among older women due to hormonal factors, reduced muscle strength, and higher life expectancy^{7,8}.

Knee osteoarthritis emerged as the most common form, aligning with studies from India and other countries that identify the knee as the most frequently affected joint due to weight-bearing stress and biomechanical factors^{4,9}. The high prevalence of comorbidities such as hypertension, diabetes, and obesity observed in this study is comparable to earlier reports, emphasizing the complex interplay between metabolic factors and osteoarthritis progression¹⁰.

Compared to global data, the pattern of OA in this study reflects similarities in age and joint involvement but highlights a relatively higher burden of advanced disease at presentation, possibly due to delayed healthcare seeking and limited access to early interventions in resource-constrained settings^{11,12}.

Clinically, these findings underscore the need for integrated management strategies that address pain control, functional rehabilitation, weight management, and control of comorbid conditions to improve outcomes in elderly patients with OA.

Limitations And Scope Of The Study

As a hospital-based study, the findings may not be generalizable to the community. The cross-sectional nature of the study limits causal inference. However, the study provides valuable insights into the clinical profile of osteoarthritis among elderly patients in a tertiary care setting and can serve as a baseline for future longitudinal and interventional studies.

CONCLUSION:

Osteoarthritis is a common and debilitating condition among elderly patients attending tertiary care hospitals, with knee involvement being the predominant presentation. Female gender, advancing age, obesity, and comorbidities are frequently associated with increased disease severity. Early diagnosis, patient education, lifestyle modification, and multidisciplinary care are recommended to reduce disability and improve quality of life among elderly individuals with osteoarthritis.

Table 1: Demographic Profile Of Study Participants (n = 200)

Variable	Frequency	Percentage
Age 60–69 years	118	59.0
Age ≥70 years	82	41.0
Male	82	41.0
Female	118	59.0
Rural residence	124	62.0
Urban residence	76	38.0

Table 2: Distribution Of Joint Involvement

Joint involved	Number	Percentage
Knee	148	74.0
Hip	28	14.0
Hand	16	8.0
Multiple joints	8	4.0

Table 3: Comorbidities Among Study Participants

Comorbidity	Frequency	Percentage
Hypertension	86	43.0
Diabetes mellitus	64	32.0
Obesity	58	29.0
Cardiovascular disease	22	11.0

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