

Assessment of Cases of Osteoarthritis among 146 Patients

K. Jagan Mohan¹, Shaik Mahamed Abid²

¹Associate Professor, Department of Orthopaedics, Fathima Institute of Medical Sciences, Kadapa, Andhra Pradesh, India.

²Assistant Professor, Department of Orthopaedics, Fathima Institute of Medical Sciences, Kadapa, Andhra Pradesh, India.

ABSTRACT

Background: Aim: To assess cases of OA among population. **Methods:** 146 cases of OA (90 males and 56 females) in age range of 45- 70 years were included. WOMAC score was recorded in patients. **Results:** It was found that age group 45- 55 years comprised of 26% males and 22 females, 55-65 years had 34% males and 43% females and >65 years had 40% males and 35% females. The difference found to be non- significant ($P > 0.05$). Pain found to be mild in 15%, moderate in 26%, severe in 40% and extreme in 5%, stiffness was mild in 20%, moderate in 21%, severe in 34% and extreme in 20% and physical functions had mild pain in 12%, moderate in 10%, severe in 42% and extreme in 34%. Maximum patients had severe pain seen in 38% of cases. A significant difference was found ($P < 0.05$). **Conclusion:** Maximum cases were seen in age group 55- 65 years and in males. The pain found to be severe in maximum cases of patients with OA.

Keywords: Osteoarthritis, Pain, Stiffness, WOMAC score.

INTRODUCTION

Osteoarthritis (OA) also known as 'osteoarthrosis or 'degenerative joint disease,' is the most common form of arthritis.^[1] It is considered to be overgrowth of marginal and subchondral bone. Osteoarthritis is regarded as active process that involves complete synovial joint with both degenerative and repair processes.^[2] It involves multiple areas such as tibiofemoral vs patellofemoral; isolated knee vs generalised OA. Approximately 100 million population suffer from OA, hence it makes a major contribution to morbidity and mortality. In India, the prevalence among population is about 5.80%. It is prevalent in 4th-5th decade of life and 8th major reason of disability of knee.^[3]

The assessment of cases of OA is based on subjective assessments, clinical as well as radiographic findings. Joint pain and stiffness are most common symptoms.^[4] Joint swelling, decreased range of motion, weakness or numbness of the arms and legs are other clinical features of disease. At the beginning, symptoms may occur only following exercise, but over time may become constant.^[5] The major causes of OA comprise of joint injury, abnormal joint or limb development, and inherited factors. Risk is greater in those who are overweight, have one leg of a different length, and have jobs that result in high levels of joint.^[6] The motive of conservative knee OA treatment is to lessen pain, to improve the function of the joint and to slow down joint damage by pharmacological and non-pharmacological modalities.^[7] The present study aimed at assessing cases of OA among population.

Name & Address of Corresponding Author

Dr. Shaik Mahamed Abid,
Assistant Professor,
Department of Orthopaedics,
Fathima Institute of Medical Sciences,
Kadapa, Andhra Pradesh, India.

MATERIALS AND METHODS

146 cases of OA reported to orthopaedics department were included in this study. It comprised of 90 males and 56 females in age range of 45- 70 years. All patients who were diagnosed with the disease were made aware and their consent was obtained.

Case history proforma was established and relevant patient's information was recorded. Assessment of knees was performed. All cases were evaluated using CT scan. Clinical features were recorded. Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) which comprises of scores for pain, stiffness and physical function were recorded. Statistical analysis was carried out using ANOVA test where level of significance was set below 0.05.

RESULTS

Table 1: Distribution of cases based on age group

Age group (years)	Male (%)	Female (%)	P value
45-55	26%	22%	>0.05
55-65	34%	43%	<0.05
>65	40%	35%	>0.05

Age group 45- 55 years comprised of 26% males and 22 females, 55-65 years had 34% males and 43% females and >65 years had 40% males and 35% females. The difference found to be non- significant ($P > 0.05$) [Table 1].

Table 2: Determination of WOMAC score

Variables	Pain	Stiffness	Physical function	P value
No pain	4%	5%	2%	>0.05
Mild	15%	20%	12%	>0.05
Moderate	26%	21%	10%	<0.05
Severe	40%	34%	42%	>0.05
Extreme	5%	20%	34%	<0.05

Pain found to be mild in 15%, moderate in 26%, severe in 40% and extreme in 5%, stiffness was mild in 20%, moderate in 21%, severe in 34% and extreme in 20% and physical functions had mild pain in 12%, moderate in 10%, severe in 42% and extreme in 34%. Maximum patients had severe pain seen in 38% of cases. A significant difference was found ($P < 0.05$) [Table 2].

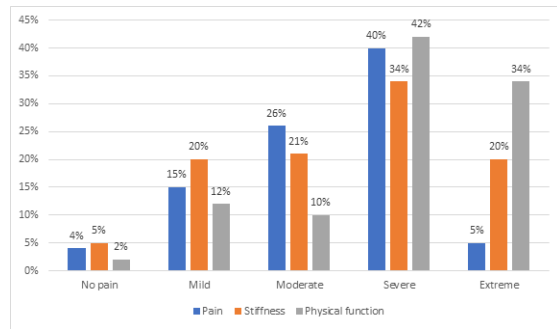


Figure 1:

DISCUSSION

Osteoarthritis is a common knee disease leading to pain, fatigue, functional limitations. Number of cases of OA is likely to increase due in part to obesity and population aging.⁸ While the prevalence of OA increases with age, there is a growing recognition that OA affects people at younger ages.⁹ Research reveals that half of people with symptomatic knee OA are diagnosed by age 55. 20%–75% of patients with knee OA show Quadriceps strength deficits. Any improvement in muscle strength or peak power of the lower extremities with decreased levels of particular pain may be important and is a strong predictor of functional ability.¹⁰ As lower limb musculature is the natural brace for the knee joint, potentially important muscle dysfunction may arise from either quadriceps weakness or relative weakness of the hamstrings in comparison to the quadriceps, usually assessed as the hamstrings: quadriceps (H:Q) ratio. An H:Q ratio of greater than or equal to 0.6 is considered to be normal. Thus, evaluation of muscle dysfunction in relation to the knee joint should examine both quadriceps strength as well as the balance of muscle strength.¹¹ In this study we determined 146 cases of OA which comprised of 90 males and 56 females in age range of 45- 70 years.

In our study, age group 45- 55 years comprised of 26% males and 22 females, 55-65 years had 34% males and 43% females and >65 years had 40% males and 35% females. Paul et al¹² conducted a study on 300 patients in which males were 180 and females were 120. It was seen that 35 male patients and 42 female patients were seen in age group 60-65 years. Maximum number of patients (45) had ESR >50 and minimum number of patients (21) were seen with ESR in range of 15-20. Patients were marginal

overweight (30), normal (135), obese (45), overweight (60) and underweight (30). Pain in patients was moderate (100), no pain (85), mild (85), severe (35) and extreme (15). Stiffness was extreme (30), severe (40), moderate (95), mild (70) and no stiffness (65). Restriction of functions was extreme (30), severe (35), moderate (120), mild (78) and no restriction (45). Maximum number of patients showed moderate pain on lying on bed followed by going up or down, on flat surface and sitting or lying. Minimum number of patients had extreme pain.

In this study it was observed that pain found to be mild in 15%, moderate in 26%, severe in 40% and extreme in 5%, stiffness was mild in 20%, moderate in 21%, severe in 34% and extreme in 20% and physical functions had mild pain in 12%, moderate in 10%, severe in 42% and extreme in 34%. Maximum patients had severe pain seen in 38% of cases. Spitaels et al¹³ in their study observed that prevalence of knee osteoarthritis increased from 2.0% in 1996 to 3.6% in 2015. An upward trend was observed with an average annual percentage change (AAPC) of 2.5. In 2015, the prevalence rates in the 10 years age groups from the 45–54 years age group onwards were 3.1%, 5.6%, 9.0% and 13.9%, to reach 15.0% in people aged 85 years and older. The incidence remained stable with 3.75‰ in 2015. The mean disease count significantly increased from 1.63 to 2.34 for incident cases.

CONCLUSION

Maximum cases were seen in age group 55- 65 years and in males. The pain found to be severe in maximum cases of patients with OA.

REFERENCES

1. Madsen OR, Bliddal H, Egsmose C, Sylvest J. Isometric and isokinetic quadriceps strength in gonarthrosis; inter-relation between quadriceps strength, walking ability, radiology, subchondral bone density and pain. *Clin Rheumatol* 1995;14: 308-314.
2. Altman R, Asch E, Bloch D, Bole G, Borenstein D, Brandt K, Christy W. Development of criteria for the classification and reporting of osteoarthritis. Classification of osteoarthritis of the knee. Diagnostic and Therapeutic Criteria Committee of the American Rheumatism Association. *Arthritis Rheum.* 1986; 29: 1039-1049.
3. McAlindon TE, Cooper C, Kirwan JR, Dieppe PA. Determinants of disability in osteoarthritis of the knee. *Ann Rheum Dis.* 1993; 52: 258-262.
4. Kauppila AM, Kyllonen E, Mikkonen P, Ohtonen P, Laine V, Siira P, et al. Disability in end-stage knee osteoarthritis. *Disabil Rehabil.* 2009; 31: 370- 380.
5. Bellamy N, Buchanan WW, Goldsmith CH, Campbell J, Stitt LW. Validation study of WOMAC: a health status instrument for measuring clinically important patient relevant outcomes for antirheumatic drug therapy in patients with osteoarthritis of the hip or knee. *J Rheumatol.* 1988; 15: 1833-1840.

6. Nene A, Mayagoitia R, Veltink P. Assessment of rectus femoris function during initial swing phase. *Gait Posture*. 1999; 9: 1-9.
7. Schouten JSAG: The incidence of risk factors of radiographic osteoarthritis of the knee in the general population. In, A Twelve Year Follow-up Study on Osteoarthritis of the Knee in the General Population (thesis). Rotterdam, the Netherlands, Erasmus University, 1990.
8. Hernborg JS, Nilsson BE: The natural course of untreated osteoarthritis of the knee. *Clin Orthop*. 1997; 130-137.
9. Danielsson L, Hernborg J: Clinical and roentgenologic study of knee joints with osteophytes. *Clin Orthop*. 2002; 69: 302-312.
10. Schouten JSAG, van den Ouweland FA, Valkenburg HA: A 12-year follow-up study in the general population on prognostic factors of cartilage loss in osteoarthritis of the knee. *Ann Rheum Dis*. 2010; 932-937.
11. Dillon CF, Rasch EK, Gu Q, Hirsch R. Prevalence of knee osteoarthritis in the United States: arthritis data from the Third National Health and Nutrition Examination Survey 1991-94. *J Rheumatol*. 2006; 33: 2271–2279.
12. Paul PC. Evaluation of 200 cases of knee osteoarthritis in general population: A clinical study. *J Adv Med Dent Res* 2017;5(1):54-58.
13. Spitaels D, Mamouris P, Vaes B, et al. Epidemiology of knee osteoarthritis in general practice: a registrybased study. *BMJ Open* 2020;10:031734.

How to cite this article: Mohan KJ, Abid SM. Assessment of Cases of Osteoarthritis among 146 Patients. *Ann. Int. Med. Den. Res*. 2016;2(3):167-169.

Source of Support: Nil, **Conflict of Interest:** None declared