Osteoarthritis is a chronic progressive musculoskeletal disorder involving the joints, affecting mainly middle aged and elderly. It causes considerable morbidity and affects daily life activities. This study aimed to find out the risk factors of Osteoarthritis among patients attending orthopaedic department at Medical College Trivandrum. An unmatched case control study was conducted in the Department of Orthopaedics, Medical College Trivandrum. 50 patients diagnosed to have osteoarthritis were included as cases and 50 patients who had come for other diseases were taken as controls. Data was obtained by interview method using a semi structured questionnaire. Statistical analysis was done using chi-square test. Obesity (P value<0.001, OR-11.3), family history of osteoarthritis (P value<0.03, OR-4.04), history of trauma (P value<0.001, OR-17.25) and history of fracture (P value<0.014, OR-5.5) were found to be associated with increased risk of osteoarthritis. This study helps in identifying the important risk factors of osteoarthritis which would help in providing insight into planning appropriate interventions.

Keywords: Osteoarthritis, Risk Factors, Case Control Study

This case control study was conducted in the Department of Orthopaedics, Medical College Trivandrum, which is a tertiary care centre in Trivandrum District. 50 Patients in the age group 40-65 years clinically diagnosed to have osteoarthritis attending orthopaedic department during the study period from September 2009 to November 2009 were included as cases and 50 patients attending the OP for other diseases were taken as controls. Patients who are not willing to participate in this study and patients with congenital joint disease were excluded. Clinical diagnosis was based on the presence of joint symptoms and evidence of structural change as seen on x-ray. Data was obtained on study variables such as age, sex, obesity, habits like smoking, alcoholism, family history of osteoarthritis, previous history of trauma, history of fracture, systemic illness like diabetes, hypertension, and history of prolonged intake of drugs. Informed consent was taken and data was collected by interview method using a semi structured questionnaire. Statistical analysis was done using Chi-Square test and odds ratios were calculated.

Results

In this study, 50 patients diagnosed to have osteoarthritis were included as cases and 50 patients who had come for other diseases were taken as controls. More than two third of the study participants were females. Obesity (P value<0.000, OR-11.3), family history of osteoarthritis (P value<0.03, OR-4.04), history of trauma (P value<0.000, OR-17.25) and history of fracture (P value<0.014, OR-5.5) were found to be risk factors of osteoarthritis (Table 1).
Osteoarthritis is the most common form of chronic arthritis affecting 250 million people worldwide.\(^3\) It is characterised by joint pain and impairment of mobility due to gradual wearing of cartilage. Worldwide it causes moderate to severe disability in about 43.4 million people.\(^4\)

Even though the cause of osteoarthritis is not fully understood it is thought to be due to genetic, biomechanical and environmental stresses. The prevalence of osteoarthritis increases with age, and with the increase in growth of elderly population in India, it has become a major cause of disability. Worldwide it is seen that in elderly population osteoarthritis is the most common articular disease.\(^5\) In a study conducted by MK Sharma, HM Swami et al,\(^6\) the prevalence of osteoarthritis among elderly was found to be 56.6%.

In this study, a significant association was found between obesity and osteoarthritis (P value<0.001, OR-11.3). Obesity leads to high mechanical stress on the joints predisposing to osteoarthritis. It seen that a force of three times the body weight is transmitted across the hip and 3-6 times the body weight is transmitted across the knee during a single-leg stance in the gait cycle. These forces are increased several times when an obese person walks leading to excess forces across the joints.\(^10\) In the Framingham study the BMI at study entry level predicted the presence of osteoarthritis of the knee 36 years later. Studies by Karlson et al\(^12\) also found obesity to be a strong risk factor for osteoarthritis.

Family history of osteoarthritis (P value<0.03, OR-4.04) was found to be significantly associated with osteoarthritis in this study. Other studies have also shown that genetics have a key influence on occurrence of osteoarthritis. Family studies from early sixties have shown first-degree relatives at increased risk for osteoarthritis.\(^7\) Studies conducted by Bijkerk C et al\(^8\) also found strong link between genetics and occurrence of osteoarthritis. The Rotterdam study estimated 56% heritability in osteoarthritis of the hand. A study by Valdes et al implicated genetic pathways in the occurrence of osteoarthritis.\(^9\)

In this study, history of trauma (P value<0.001, OR-17.25) and history of fracture (P value<0.014, OR-5.5) were found to be significantly associated with osteoarthritis. Studies by Felson et al\(^10\) reported injuries as an important risk factor in the development of osteoarthritis.

Injuries caused by high force events initiates inflammatory and metabolic imbalances of tissue tissue turnover compromising the mechanical properties of tissues leading to osteoarthritis.\(^13\) Studies by Frobell RB et al have shown that over 30% of patients with acute anterior cruciate ligament (ACL) or meniscal injuries develop radiographic knee OA within 5 years post-injury.\(^14\)

**Conclusion**

It is seen from this study that those with obesity and history of trauma have a higher odds for developing osteoarthritis when compared to others. Osteoarthritis being a chronic progressive disorder affecting the middle aged and elderly, it poses a substantial threat to the health of individuals and their quality of life, with serious socio-economic consequences. As there is currently no cure for osteoarthritis, it has become important to reduce cartilage loss and the progression of this condition by raising awareness about prevention of osteoarthritis and taking steps to reduce the prevalence of modifiable risk factors of osteoarthritis like obesity and trauma.

**Endnote**

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**Conflict of Interest** - None Declared
References


