

Clinical Profile of Patients with Osteoarthritis of the Knee A Study of 162 Cases

MA Shakoor, MA Taslim, MS Ahmed, SA Hasan

Bangabandhu Sheikh Mujib Medical University, Dhaka and
Chittagong Medical College, Chittagong, Bangladesh

Abstract

One hundred sixty two patients of osteoarthritis (OA) knee were studied to describe their clinical profile. The patients were included according to the criteria developed by the American College of Rheumatology. Detailed history, clinical examination and X-rays were carried out. The data were analysed statistically and the results were expressed in percentage and frequency. In this study, 96 (59.3%) were male and 66 (40.7%) were female. The mean age of the subject was 53.73 ± 11.35 years. Most of the patients were in the age group of 50 to 59 years. Maximum number of females in the age group of 35 to 45 years was affected. Most of the males were affected in the later ages, between 55 to 65 years. Most of the patients were middle class (68.5%) and housewives (35.8%). Mean height was 159.99 ± 8.12 cm and mean weight was 63.34 ± 11.60 kg. Mean duration of symptoms was 25.25 ± 38.85 months. Most patients gave the history of gradual onset of the pain (87.7%). Most of the patients had no morning stiffness in the knee (90.1%). Morning stiffness was present in 9.3% but it was for less than one

hour. Maximum patients had intermittent pain (53.7%) but 46.3% patients had constant pain. By this study, it can be concluded that OA knee is commoner in males but females develop it earlier in the life than the males.

Introduction

Osteoarthritis is the most important of the rheumatic diseases and is responsible for a huge burden of pain and physical disability¹. Osteoarthritis is characterised by both degeneration of articular cartilage and simultaneous proliferation of new bone, cartilage, and connective tissue². It is the most prevalent form of arthritis and it is the principal cause of disability in the elderly³⁻⁶. The area of local damage occurs in those parts of the joint subjected to maximal mechanical stretch⁷. This in addition to the epidemiologic associations with trauma and abnormal joint biomechanics makes it clear that OA is a mechanically driven disorder. The process of abnormal tissue turnover with loss of cartilage volume and on increase in bone and capsular tissue, are chemically mediated⁷. Mild OA of the knee is extremely common, mainly affecting middle aged and elderly women⁸. The knee is a complex joint, with three major compartments: the medial and lateral tibio-femoral joints and the patello-femoral joint⁹. Each of these areas can be affected by OA separately, or in any combination. Maximum evidence of cartilage damage is usually found on the lateral facet of the patella in the patello-femoral OA, and on the tibial plateau area least well protected by the meniscus in tibio-femoral disease⁹.

Patients presenting with knee OA fall into two major categories; younger people, often men, with isolated knee disease that may be related to a previous injury or operation such as meniscectomy and middle aged and older people, predominantly females, who often have OA of other joint sites, including the hands. Obesity is very strongly associated with knee OA, particularly in the older female group⁹. Pain on walking, stiffness of the joint and difficulty with steps and stairs are the major symptoms. The physical signs depend on the distribution and severity of the OA within the joint. Wasting of the quadriceps muscle, bony swelling, and tenderness on and around the joint line, painful limitation of full flexion and course crepitus are the usual signs. Medial compartment disease often results in a varus deformity, a very common finding in knee OA. In patello-femoral OA, anterior crepitus,

Authors and their Affiliations

Dr MA Shakoor, FCPS, Associate Professor, Physical Medicine and Rehabilitation, Bangabandhu Sheikh Mujib Medical University, Shahabagh, Dhaka, Bangladesh.

Dr Md Abu Taslim, FCPS, Director, Chittagong EPZ Hospital, Chittagong, Bangladesh.

Dr Md Shaik Ahmed, FCPS, Assistant Professor, Physical Medicine, Chittagong Medical College, Chittagong, Bangladesh.

Dr Suzon Al Hasan, FCPS, Associate Professor, Physical Medicine, Chittagong Medical College, Chittagong, Bangladesh.

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Correspondence

Dr M A Shakoor

Physical Medicine and Rehabilitation
Bangabandhu Sheikh Mujib Medical University, Shahabagh
Dhaka, Bangladesh.

Email: dmashakoor04@yahoo.com

abnormal movement, and tracking of the patella and tenderness on patella compression occur. Predominant lateral compartment OA can cause valgus deformity. These deformities may influence the activities of the patient affected with knee OA. Even the patient may become unable to do normal work.

A wide variety of treatments are available for those who suffer from OA of the knee. They range from simple educational help to highly technical and skilled physical, medical or surgical procedure⁸. Much can be done to relieve symptoms, optimise function and improve the quality of life. To improve quality of life, we should know the problems and condition of the patients of OA knee joints. For this purpose we studied clinical profile of 162 patients of OA knee.

Material and Method

Selection of the patients: The patients having OA-knee were selected from the department of Physical Medicine and Rehabilitation and those referred from various out patient departments of Chittagong Medical College Hospital (CMCH) and also from general practitioners out side the hospital. Detailed history was taken, clinical examination and X-rays were carried out. The patients were selected according to the clinical criteria developed by the American College of Rheumatology (ACR)¹⁰ which is as follows:

1. Knee pain for most days of prior month.
2. Crepitus on active joint motion.
3. Morning stiffness of the knee \leq 30 minutes.
4. Age \geq 30 years.
5. Bony enlargement of the knee on examination.
6. Bony enlargement.

OA knee was considered to be present when: 1, 2, 3, 4, or 1, 2, 5 or 1, 4, 6 were found.

Recording: Nature of the study was discussed with the patients and their verbal consent was taken. History, clinical examination and X-rays were done.

Statistical methods: The numerical data were analysed statistically with the help of SPSS windows-12 version.

Results

A total of 190 patients of OA knee were included in the study. But 28 patients dropped out from the study because they could not attend for physical therapy and/ or could not follow the instructions of daily living properly. Hence, 162 patients followed the treatment advised to them. Out of these, 96 (59.3 %) were males and 66 (40.7 %) were females. The male: female ratio was 1: 0.68.

Age: The mean age of the patients in study were 53.73

\pm 11.35 years. Most of the patients were in the age group of 40 to 59 years. On the other hand, it was found that maximum females were affected in their earlier ages (between 35 to 45 years age); but most of the male persons were affected in their late ages (between 55 to 65 years age).

Age group	No	%age
30-39 years	15	09.3
40-49 years	44	27.2
50-59 years	45	27.8
60-69 years	37	22.9
70 years and above	21	12.8
Total	162	100

Table 1: Age distribution of patients.

Occupation: A majority of the patients were housewives (35.8%) followed by retired servicemen (19.1%) and those on government service (17.3%). Others were labourers (6.2%), salesmen (0.6%), businessmen (6.8%), field workers (1.2%), cultivators (4.9%), drivers (1.2%), teachers (3.1%), barbers (0.6%), defence servicemen (1.2%), imams (1.2%) and garment workers (0.6%).

Socio-economic condition: Most patients were in the middle class group (68.5%), their monthly income was in between Bangladeshi Taka (BDT) 2001 to 6000. Some patients were poor (29.6%), their monthly income was less than BDT 2000 and a very few patients were rich (1.90 %), their monthly income was more than BDT 6000. Most of our study subjects (121 patients, 74.7%) came from the Chittagong metropolitan city and the rest came from the villages nearby.

Clinical characteristics: Mean height was 159.99 \pm 8.12 cm and mean weight was 63.34 \pm 11.60 kg. Median duration of symptoms was 25.25 \pm 38.85 months. All patients were married. Most patients gave the history of gradual onset of the pain (87.7%), some gave the history of sudden onset (7.4%) and some gave the history of pain in the knee after trauma (4.9%). Most of the patients had no morning stiffness in the knee (90.1%) and some had the morning stiffness (9.30%) but it was less than one hour. Maximum patients had the pain intermittent in character (53.7%) but 46.3% of patients had the pain constant in character. It was found that most of the study subjects were suffering from both sided knee OA (48.1%), 44 (27.2 %) patients were suffering from right sided knee OA and 40 (24.70 %) patients were suffering from left sided knee OA.

Discussion

One hundred sixty two patients of OA knee were studied. Out of them, 96 (59.30 %) were males and 66 (40.70 %) were females. The male: female ratio was 1: 0.68. In a

study at Chittagong, Bangladesh, it was found that 61 % of the patients were males and 39% were females¹¹. In another study it was found that 64.80 % of the study subjects were males and 35.20 % were females¹². This is in favour of the findings of our study. Although men and women are equally prone to develop knee OA, but more joints are affected in women than men¹³. The male preponderances may be due to more male attendance in the hospital than female because of social and religious belief. In our study, the mean age of the patients in study was 53.73 ± 11.35 years. Out of 162 patients in the study, most of the patients of knee OA were at the age group of 40 to 59 years. In the other two studies, the mean age was found 53.14 ± 7.7 years and 55.44 ± 7.40 years and most of the subjects were of 50 to 59 years age group^{11, 12}. This is to some extent same as the result found in the present series. On the other hand, it was found in our study that most of the female patients were affected with OA- knee in their earlier ages (between 35 to 45 years age); but most of the male patients were affected in their late ages (between 55 to 65 years age). This may be due to occupation of the female as they usually works with knee bent position in their house. In a study at Taiwan, MH Jan et al. found the mean age of the OA- knee patients was 62.4 ± 1.3 years¹⁵. This is to some extent more than that found in our study. On the other hand in a study at New York, America, Fisher NM et al. showed the mean age of their patients was 69.70 ± 5.40 in their study¹⁶. This is higher than the present study as the life span is more in America and their life style is also different than that of our country. In a study at Chittagong, Bangladesh, it was found that most of the patients of knee-OA were house wives (31.5%). This is in favour of the findings of the present study. In the developing country like Bangladesh, most of the house wives used to do their household works in the bent knee position. There is a significantly increased prevalence of osteoarthritis in knee in road labourers and others engaged in knee-bending occupations¹³. Retired serviceman became the second (19.10 %) in the present series. In two other studies, the same results were found^{11, 12}. This may be due to their age because all the retired servicemen have more than 57 years of age because in Bangladesh normal age for retirement is 57 years for the employees. In our series, maximum patients were in the middle class group (68.5%), their monthly income was in between BDT 2001 to 6000. In this study, some patients were poor (29.6%), their monthly income was less than BDT 2000 and a very few patients were rich (1.90 %), their monthly income was found more than BDT 6000. Most of our study subjects (121 patients, 74.7%) came from the Chittagong metropolitan city and only 41 patients (25.30 %) came from the villages nearby the Chittagong district. This result conforms with other studies^{11, 12}. This

may be due to the poverty situation of the country. Some rich people usually take treatment from the private clinics and the poor people are illiterate and have not got enough money to spend to reach the tertiary level hospital like CMCH. So, they are less in number in this study.

In the present study, mean weight of the patients was 63.34 ± 11.60 kg and mean duration of symptoms of the patients was 25.25 ± 38.85 months, this is in favour of the findings of another two studies done in chittagong^{11, 12}. But Fisher NM found that the mean weight of the patients with knee-OA was 85.50 ± 12.50 kg, this is much higher than our finding¹⁶. This may be to tall structure of the American people than that of Bangladeshi people.

Regarding the sides affected by OA-knee, it was found in this study that most of the study subjects were suffering from both knee OA (48.1%), 44 (27.2%) right sided knee OA and 40 (24.7%) left sided knee OA. In a study in America, it was found that all the subjects were affected by OA- knee on both sides¹⁶. This was higher than the present study because their sample size was very small, only 9 subjects were included in their study but we included 162 subjects.

Conclusion

From the present study, it may be concluded that females are more vulnerable to develop OA knee in earlier ages than male. So, precautions should be taken for this group of population to protect the Knee joints.

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