ORIGINAL RESEARCH

Assessment of cases of primary osteoarthritis

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ABSTRACT

Background: Osteoarthritis (OA) is a degenerative joint disease characterized by the breakdown of cartilage in the joints. The present study was conducted to assess cases of osteoarthritis knee. **Materials & Methods:**120 patients of osteoarthritis knees of both genders were enrolled. All cases underwent an AP view of both knees while they were upright. Measurements were taken of height, weight, and BMI. Cases were split bythe Kellgren Lawrence Grading system based on radiological features. **Results:** The age group 20-30 years had 36, 30-40 years had 54 and >40 years had 30 patients.14 cases had BMI <18.9 kg/m^2, 56 had BMI between 18.9-24.9 kg/m^2, and 50 had BMI below > 24.9 kg/m^2. Right-side knee involvement was seen in 48, left knee was involved in 32 and bilateral knee involvement in 40 cases.34 cases had grade 0, 20had KL grade I, 34 had KL grade II, 20 had KL grade III and10 cases had KL grade IV. 49 had sitting/squattingas a household habit, 48 had standing and 23 cases had nothing specific as a predominant household habit. The difference was significant (P< 0.05). **Conclusion:** The primary risk factors for the illness include obesity, and sitting/squatting in daily activities, and a family history of OA knee. A good understanding of these factors is necessary to establish preventative methods.

Keywords: Osteoarthritis

INTRODUCTION

Osteoarthritis (OA) is a degenerative joint disease characterized by the breakdown of cartilage in the joints. It is the most common type of arthritis and typically affects weight-bearing joints such as the knees, hips, spine, and hands.[1] While it is more common in older adults, it can also occur in younger individuals, especially if they have a history of joint injury or other risk factors.The risk of developing osteoarthritis increases with age, as the wear and tear on the joints accumulate over time.There may be a genetic predisposition to osteoarthritis, with some individuals having a family history of the condition.[2]Previous joint injuries, such as fractures or ligament tears, can increase the risk of developing osteoarthritis in the affected joint.Excess body weight places added stress on weight-bearing joints, such as the knees and hips, increasing the risk of osteoarthritis.Repetitive movements or activities that place excessive stress on the joints can contribute to the development of osteoarthritis.[3]

The financial burden of OA is significant and includes treatment costs, home and life adaptation costs for affected persons and their families, and decreased productivity at work.[4] Major risk factors include the presence of walking difficulty and a history of diabetes, cancer, or cardiovascular disease.[5] All diseases have excess mortality rates associated with them, but cardiovascular problems have the highest rate.The risk for disability attributable to OA Knee is as great as that attributable to cardiovascular disease and greater than due to any other medical condition in elderly persons.[6] The present study was conducted to assess cases of osteoarthritis knee.

MATERIALS & METHODS

This study comprised 120 patients of osteoarthritis knees of both genders. All were informed regarding the study and their written consent was obtained.

Data such as name, age, gender etc. were recorded. After evaluation, the cases underwent an AP view of both knees while they were upright. Measurements were taken of height, weight, and BMI. Cases were split by Kellgren Lawrence Grading system based on radiological features from standing-position AP views of both knees x-rays into the following groups. Grades 0 and 1 represent no features, Grade 2 and minimal represent definite osteophytes with unimpaired joint

space, Grade 3 and 4 represent moderate and moderate reductions in joint space, and Grade 4 represents severe impairments in joint space with subchondral bone sclerosis and possible deformity of bone ends. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Age groups(years)	Number	P value
20-30	36	0.05
30-40	54	
>40	30	

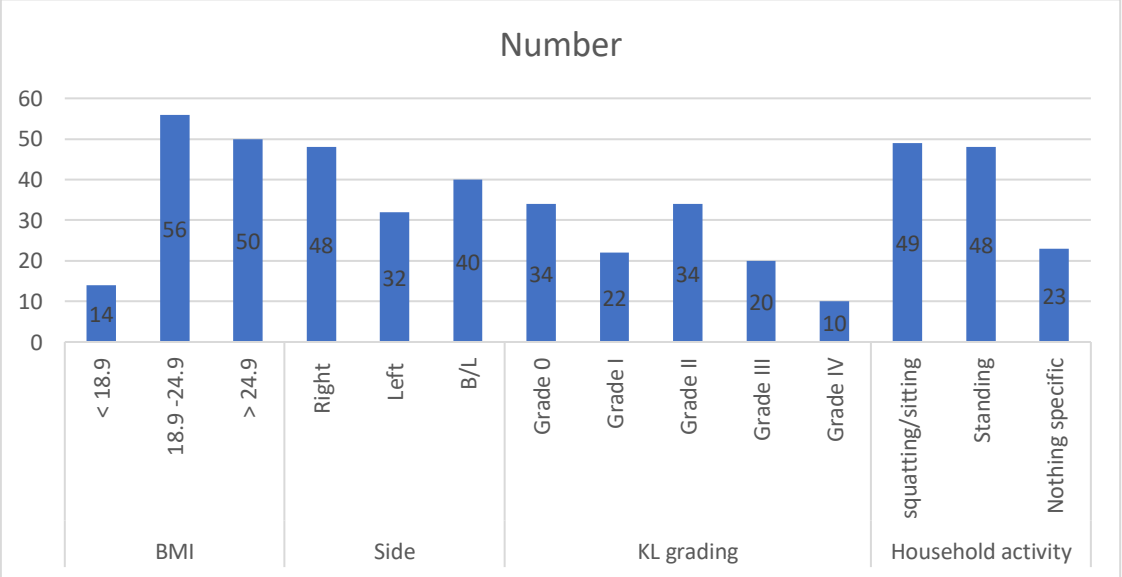
Table I shows that the age group 20-30 years had 36, 30-40 years had 54 and >40 years had 30 patients.

Table II Assessment of parameters

Parameters	Variables	Number	P value
BMI	< 18.9	14	0.03
	18.9 -24.9	56	
	> 24.9	50	
Side	Right	48	0.48
	Left	32	
	B/L	40	
KL grading	Grade 0	34	0.76
	Grade I	22	
	Grade II	34	
	Grade III	20	
	Grade IV	10	
Household activity	squatting/sitting	49	0.52
	Standing	48	
	Nothing specific	23	

Table II, graph I shows that 14 cases had BMI <18.9 kg/m^2, 56 had BMI between 18.9-24.9 kg/m^2, and 50 had BMI below > 24.9 kg/m^2. Right side knee involvement was seen in 48, left knee was involved in 32 and bilateral knee involvement in 40 cases.34 cases had grade 0, 20had KL grade I, 34had KL grade II, 20 had KL grade III while 10 cases had KL grade IV. 49 had sitting/squattingas household habit, 48 had standing and 23 cases had nothing specific as a predominant household habit. The difference was significant (P< 0.05).

Graph I Assessment of parameters



DISCUSSION

Osteoarthritis (OA), sometimes referred to as "Osteoarthrosis" or "Degenerative joint disease," is one of the oldest known companions of humans, dating back to our Neanderthal ancestors. It affects so many elderly individuals that it has long been

perceived as an unavoidable aspect of aging.[7,8]Several investigators have reported that occupational squatting is a strong risk factor for knee OA and biomechanical studies suggest that deep squatting increases contact force across the tibiofemoral joints more so than across the patellofemoral joints.[9,10] Other investigators have also found that the distribution of contact forces between the medial tibiofemoral compartment and the lateral tibiofemoral compartment is different depending on the angle of flexion.[11,12]The present study was conducted to assess cases of osteoarthritis knee.

We found that the age group 20-30 years had 36, 30-40 years had 54 and >40 years had 30 patients. Cooper et al[13] in their study found that ninety-nine men and 255 women aged > or =55 years had baseline interviews and weight-bearing knee radiographs in 1990-1991. Repeat radiographs were obtained in 1995-1996 (mean follow-up duration 5.1 years, median age at follow-up 75.8 years). Risk factors assessed at baseline were tested for their association with incident and progressive radiographic knee OA by logistic regression.Rates of incidence and progression were 2.5% and 3.6% per year, respectively. After adjusting for age and sex, the risk of incident radiographic knee OA was significantly increased among subjects with higher baseline body mass index (odds ratio [OR] 18.3, 95% confidence interval [95% CI] 5.1-65.1, highest versus lowest third), previous knee injury (OR 4.8, 95% CI 1.0-24.1), and a history of regular sports participation. Knee pain at baseline and Heberden's nodes were weakly associated with progression. Analyses based on individual radiographic features (osteophyte formation and joint space narrowing) supported differences in risk factors for either feature.

We observed that 14 cases had BMI <18.9 kg/m^2, 56 had BMI between 18.9-24.9 kg/m^2, and 50 had BMI below > 24.9 kg/m^2. Right-side knee involvement was seen in 48, left knee was involved in 32 and bilateral knee involvement in 40 cases.34 cases had grade 0, 20had KL grade I, 34 had KL grade II, 20 had KL grade III and10 cases had KL grade IV. 49 had sitting/squattingas a household habit, 48 had standing and 23 cases had nothing specific as a predominant household habit. Zhang et al[14] found that squatting was very common, approximately 40% of men and approximately 68% of women reported squatting > or =1 hour per day at age 25. The prevalence of tibiofemoral OA increased as the time spent squatting at age 25 increased in both the men and women. Compared with subjects who squatted <30 minutes per day at age 25, the multivariable-adjusted prevalence odds ratios of tibiofemoral OA were 1.1 for time spent squatting of 30-59 minutes/day, 1.0 for 60-119 minutes/day, 1.7 for 120-179 minutes/day, and 2.0 for > or =120 minutes/day among the men, and the respective odds ratios among the women were 1.4, 1.3, 1.2, and 2.4. A weaker association with patellofemoral OA was found. Prolonged squatting in daily life was more strongly associated with medial knee OA than with lateral disease in the men, but had a similar effect on both knee compartments in the women. After adjusting for the impact of squatting, the age-adjusted difference in the prevalence of tibiofemoral OA was reduced from an excess of 14.4% to 9.5% in the Chinese women, but the difference in prevalence of tibiofemoral OA in the Chinese men increased after adjustment for age and squatting, from 2.9% lower to 7.0% lower as compared with their white counterparts.

The limitation of the study is the small sample size.

CONCLUSION

Authors found that the primary risk factors for the illness include obesity, and sitting/squatting in daily activities, and a family history of OA knee. A good understanding of these factors is necessary to establish preventative methods.

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