Research Article

Characteristics of Patients With Knee Osteoarthritis Treated With Total Knee Arthroplasty and Conservative Treatment at Kustati Islamic General Hospital Surakarta From January 2024 to September 2025

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Abstract: This study aims to research the characteristics of patients with knee osteoarthritis who received total knee arthroplasty and conservative treatment at Kustati Islamic General Hospital from January 2024 to September 2025. This research uses the cross-sectional retrospective approach with the descriptive method. The research subjects comprise patients with knee osteoarthritis who have undergone total knee arthroplasty at Kustati Islamic General Hospital from January 2024 to September 2025, as well as those who have received conservative treatment during the same timeframe at Kustati Islamic General Hospital. The majority of patients undergoing total knee arthroplasty were female (75.79%) and belonged to the age range of 56-65 years (52.6%). The Body Mass Index of patients undergoing total knee arthroplasty predominantly falls within the overweight category, comprising 42.1% of the population. The majority of patients receiving conservative treatment were female (80.76%). Additionally, the age group of 56-65 years constituted 39.4%. The majority of patients with knee osteoarthritis undergoing total knee arthroplasty and conservative therapy are female, predominantly aged 56 to 65 years. The body mass index of individuals undergoing total knee arthroplasty predominantly falls within the overweight category.

1. Introduction

Osteoarthritis (OA) is the most common chronic articular disease and remains one of the few chronic aging disorders with few effective treatments, none of which have been proven to delay disease progression (Jang et al., 2021). All joints can be affected by OA, but the most prevalent joint affected is the knee, as it is a weight-bearing joint (Kloppenburg et al, 2019). Previous knee trauma increases the risk of osteoarthritis of the knee by 3.86 times (Heidari, 2011). Old age, female, overweight and obesity all play an important role in the development of knee OA (Heidari, 2011).

The prevalence of OA worldwide in men and women over 60 years old was 10 % and 13 %, respectively (Zhang & Jordan, 2010). A study conducted by Ahmad et al. showed that the prevalence of OA in men and women was 15.5 % and 12.7 % in the total Indonesian population, which impacts the socio-economic profile and daily activities of the people. In cases which there is advanced OA, treatment with total knee arthroplasty is required.

Total knee arthroplasty is one of the most cost-effective and successful surgeries in orthopedics and numerous studies, such as from Ethgen et al. in 2004 and Santaguida et al. in 2008, have shown favorable outcomes. Yong et al. also demonstrated implant survival of 99 % at 5 years, 92 % at 10 years, 83 % at 15 years, and 62 % at 20 years. Due to its cost-

effectiveness and favorable outcomes, the demand and implementation of total knee arthroplasty continues to increase each year.

2. Materials and Method

This research uses the cross-sectional retrospective approach with the descriptive method. The variable of this research is examined without intervention. This research focuses on patients with knee osteoarthritis who have received total knee arthroplasty at Kustati Islamic General Hospital from January 2024 to September 2025, as well as those who have undergone conservative treatment during the same timeframe at Kustati Islamic General Hospital. The data analysis involves compiling and descriptively presenting information on patients with knee osteoarthritis who received total knee arthroplasty and conservative treatment at Kustati Islamic General Hospital, derived from medical records. The findings are subsequently displayed in tabular form, accompanied by percentage calculations.

The inclusion criteria encompass all patients with knee osteoarthritis who underwent total knee arthroplasty and conservative treatment at Kustati Islamic General Hospital from January 2024 to September 2025.

3. Results and Discussion

Research was conducted on 95 patients with knee osteoarthritis who underwent total knee arthroplasty at Kustati Islamic General Hospital from January 2024 to September 2025, alongside 2,349 patients with knee osteoarthritis who received conservative treatment at the same institution during the same timeframe.

Table 1 indicates that patients treated with total knee arthroplasty, female (75.79%) are more than male patients (24.21%). Patietns treated with total knee arthroplasty occur mostly in age group of 56 to 65 years old which is 52.6% of all the patients treated with total knee arthroplasty in the research period.

Table 2 indicates that body mass index of patients treated with total knee arthroplasty in both male and female patients are mostly overweight with a percentage of 44.4% in female patients and 34.8% in male patients.

Tables 3 indicate a higher proportion of female patients receiving conservative treatment, including 80.76% compared to male patients at 19.24%. Additionally, the predominant age group for these patients is 56 to 65 years, representing 39.4%.

Table 1. Knee osteoarthritis patients treated with total knee arthroplasty.

Age	Gender				Total	
	Male	%	Female	%	N	%
17-25 (Young Adults)	1	4.3	0	0	1	1,1
26-35 (Early Adulthood)	0	0	0	0	0	0,0
36-45 (Late Adulthood)	1	4.3	3	4.2	4	4,2
46-55 (Early Elderly)	1	4.3	13	18.1	14	14,7
56-65 (Late Elderly)	11	47.8	39	54.2	50	52,6
> 65 (Elderly)	9	39.1	17	23.6	26	27,4

Table 2. Body mass index of patients with total knee arthroplasty.

Body Mass Index	Gender				Total	
	Male	%	Female	%	N	%
Underweight (< 18,5 kg/m²)	0	0	1	1.4	1	1,1
Normal (18,5–24,9 kg/m²)	12	52.2	22	30.6	34	35,8
Overweight (25–29,9 kg/m²)	8	34.8	32	44.4	40	42,1
Obesity (≥ 30 kg/m²)	3	13.0	17	23.6	20	21,1

Table 3. Knee osteoarthritis patients treated with conservative treatment.

Age	Gender			Gender		
	Male	%		Male	%	
17-25 (Young Adults)	3	0,7	17-25 (Young Adults)	3	0,7	17-25 (Young Adults)
26-35 (Early Adulthood)	10	2,2	26-35 (Early Adulthood)	10	2,2	26-35 (Early Adulthood)
36-45 (Late Adulthood)	26	5,8	36-45 (Late Adulthood)	26	5,8	36-45 (Late Adulthood)
46-55 (Early Elderly)	60	13,3	46-55 (Early Elderly)	60	13,3	46-55 (Early Elderly)

| 56-65 (Late Elderly) | 184 | 40,7 | 56-65 (Late Elderly) | 184 | 40,7 | 56-65 (Late Elderly) |
| > 65 (Elderly) | 169 | 37,4 | > 65 (Elderly) | 169 | 37,4 | > 65 (Elderly) |

Discussion

Many of the literature discussing knee osteoarthritis shows that cases of patients with knee osteoarthritis increases in number along with age and mainly occurs in female patients than male patients. Akkimaradi and Mohan Kumar observed that females were more than males and we also found that females were more than males in the present study. Thus, it can be said that females are more commonly affected than males by the disease called osteoarthritis (Akkimaradi & Kumar, 2020).

Butarbutar et al. in their research also explain that Indonesia had a greater increase of osteoarthritis cases than the global population, as the growth of cases was 147.44% for both sexes, while globally, it was only 113.25% over the past three decades. Overall, the knee is still the most prevalent site to get osteoarthritis as it accounts for 3.1 million cases of knee osteoarthritis in males and 4.6 million cases in females were detected out of a total of 9.6 million cases of osteoarthritis in Indonesia in 2019. This shows the concerning increase of osteoarthritis cases in Indonesia that may be neglected over other fatal diseases (Butarbutaret al., 2019).

Dong et al study shows middle-aged and elderly individuals over 40 are 1.02 times more likely to develop knee osteoarthritis than those under 40 (Dong rt al., 2023).

Epidemiological studies have found that the incidence of knee osteoarthritis in Korea, the United Kingdom, Spain, and other regions for individuals over 40 years old has reached more than 15%. With the aging society, there has been a sequential rise in the incidence of knee osteoarthritis (Hugly, 1974; Kolasinski et al., 2020). Joint instability and cartilage defects, especially in women, can also contribute to the development of knee osteoarthritis with age, and the risk of knee osteoarthritis peaks around the age of 50 (Sasaki et al., 2020).

Dougados et al reported that among patients with knee OA and overweight or obesity, diet and exercise, compared with an attention control group, led to a statistically significant but small difference in knee pain over 18 months. The magnitude of the difference in pain between groups is of uncertain clinical importance (Dougadis et al., 2000).

Salis et al. conducted a time-to-event survival analysis, using a population-based cohort with a high risk of clinically significant knee OA to determine the association between body weight change and the risk of subsequent knee and/or hip replacement. 8145 individuals were included (8069 knees and 8076 hips). They reported that every 1% reduction in weight was associated with an almost 2% (knee)–3% (hip) reduction in the risk of joint replacement, suggesting that obesity promotes the development of OA (Salis et al., 2022).

4. Conclusion

Most patients with knee osteoarthritis who receive conservative therapy and total knee arthroplasty are female and primarily between the ages of 56 and 65. Most patients treated with total knee arthroplasty fall into the overweight category based on their body mass index.

Going forward it is hoped that there will be research conducting study on the knee osteoarthritis at the Kustati Islamic General Hospital with larger population and more detailed variable to prevent incidences and assess aggravating factors of knee osteoarthritis as well as its can be treated earlier.

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