Title of the Paper:

Study on Pre and Post Operative Complication in Osteoarthritis Patients in a Tertiary Care Hospitals

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Abstract

Osteoarthritis (OA) is a degenerative joint disease that commonly affects the elderly population and is a major cause of disability worldwide. Surgical intervention, particularly total joint replacement, is often required in advanced cases. However, both preoperative and postoperative complications significantly impact patient outcomes.

Objective: *This study aims to evaluate the spectrum and incidence of preoperative and postoperative complications in osteoarthritis patients undergoing surgical management in a tertiary care hospital.*

Methods: *A retrospective/prospective observational study was conducted on OA patients who underwent surgical procedures, primarily total knee or hip arthroplasty, in a tertiary care centre over a defined period. Data on demographic variables, comorbidities, type of surgery, preoperative risk factors, intraoperative events, and postoperative complications were collected and analysed.*

Results: *Among the studied patients, common preoperative complications included anemia, uncontrolled diabetes, and hypertension, which delayed surgical intervention in some cases. Postoperative complications observed included surgical site infections, deep vein thrombosis, delayed wound healing, and prosthesis-related issues. A correlation was found between the presence of preoperative comorbidities and increased risk of postoperative complications.*

Key words: *Total knee replacement, Arthroplasty, Preoperative Complications, Postoperative Complications, Orthopedic Surgery*

Introduction

Osteoarthritis (OA) is one of the most prevalent conditions resulting to disability particularly in elderly population. OA is the most common articular disease of the developed world and a leading cause of chronic disability, mostly as a consequence of the knee OA and/or hip OA.[1]

Osteoarthritis (OA) is a chronic disease involving the entire joint, although the main tissue implicated in osteoarthritis is the cartilage. The most common joints affected include the knees, hips, lower back and neck, small joints of the fingers, base of the thumb and big toe. Progressive degeneration, chronic pain, stiffness, joint instability and joint space narrowing are clinical features associated with the condition.[2]

Aim and Objectives

Aim

To access the complication of pre and postoperative osteoarthritis patients in tertiary care hospital.

Objective

- To explore the risk factors, prevalence and treatment pattern for patients with osteoarthritis.
- To estimate the overall osteoarthritis patients in tertiary care hospital
- Statistical analysis of osteoarthritis patients among male and female
- To survey the socio demographic information of the patients
- To determine the preoperative treatments
- To analyse the preoperative treatment failure
- To identify the postoperative patients related factors after surgical procedure.
- To identify and analyse the postoperative drug related factors.

Plan of Study

1. Identification target for possible research.
2. Screening patient drug chart
3. Literature review
4. Preparation of study protocol
5. Obtaining approval from IEC
6. Questionaries
7. Designing of data entry form and selection
8. Data collection

9. Analysis of data
10. Interpretation and reporting the result

Methodology

Study design:

The study was a Prospective-Observational study

Geographical center of study:

Vivekananda medical care and hospital (VMCH), Elayampalayam, Tiruchengode, TamilNadu (for practical reasons included in and outpatients).

Duration of study:

The study was conducted from October 2019 to March 2020 in the Department of Orthopaedics.

Inclusion criteria:

- Patients with the 35 to 60 years of age
- Both males and females suffering from osteoarthritis
- Patients with diet plan and OA with TKA.

Exclusion criteria:

- Age more than 60 years old
- Who are co-operative and not willing to participate in the study
- Pregnancy patients and lactating patients
- Patients with bleeding disorders
- Critically ill patients

Study population:

The total number of patients is 65 medical and medication history was reviewed. From that 20 patients were included in the study as per the inclusion and exclusion criteria. Out of which 15 patients were withdrawn from this study due to poor compliance and missed follow up. Finally 65 patients were completed the study.

Method of study:

Patients were selected randomly to the study as per the inclusion and exclusion criteria. Selected patients were divided in to Pre and Post operative groups. The patient demographics data was collected by using data entry form. The baseline score of pain, Stiffness, and Physical function of assessed by using The Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) questionnaire, to enrolled subjects were asked to answer (WOMAC) questionnaire.

The initial score was considered as a baseline. The study subjects were followed once in 60 days for 6 months and they were asked to answer the same questionnaire. The effect of the treatment was assessed by comparing the baseline score with follow up score.

Statistical analysis

All results were analyzed using computerized statistical package of graph Pad instat Version. Values are represented as Mean ± SD (standard Deviation). Scores of WOMAC Questionnaire and Visual Analogue Scale (VAS) were compared by using the Student's t-test. It was considered as statistically significant.

Results

A number of 65 Osteoarthritis patients after Total Knee Replacement were selected as per inclusion and exclusion criteria. The Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC). The study subjects were followed once in 60 days for 6 months.

6.1. Age wise distribution among the study population

Among 65 patients, 4.61% (5) were in the age group of 40 – 55 years, 61.53 % (62) were in the age group of 56 – 70 years, 33.84 % (34) were in the age group of 71 – 85 years. (Table 1, Figure 4)

Table 1: Age wise distribution among study population (n = 65)

Age(years)	No. of patients	Percentage
40-55	3	5
56-70	40	62
71-85	22	34

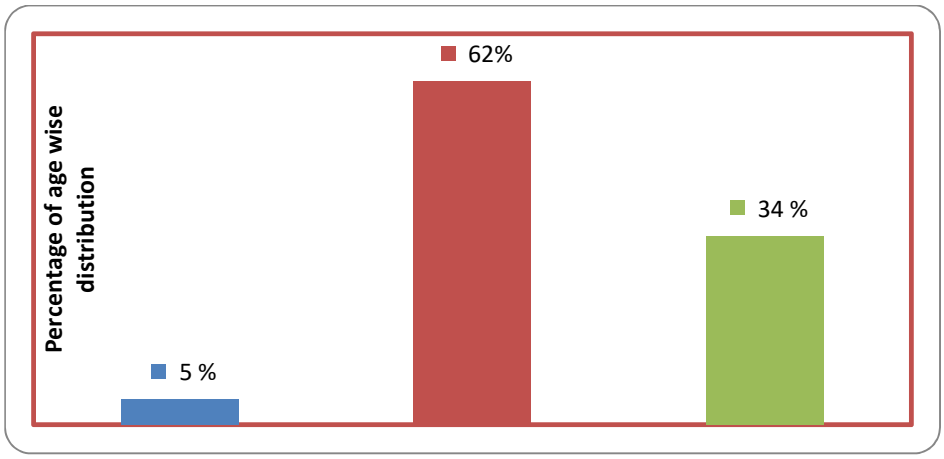

Figure 1: Age wise distribution percentage among study population (n = 65)

6.2. Gender wise distribution among study population (n = 65)

A total of 65 osteoarthritis patients, males were 46.15% (46) and Females were 53.84 % (54). (Table 2, Figure 5)

Table 2: Gender wise distribution among the study population (n = 65)

Gender	No of Patients	Percentage of Patients
Male	30	46
Female	35	54

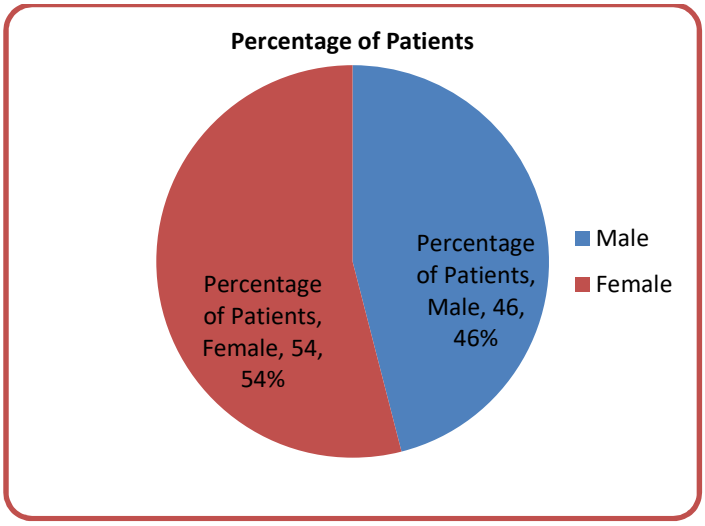

Figure 2: Gender wise distribution percentage among the study population (n=65)

6.3. Body mass index (bmi) among the study population

A total of 65 osteoarthritis patients, 52.30% (52) were in normal body weight, 33.84% (34) were in over body weight, 10.76% (11) were in obesity, 3.07% (3) were in mild thinness.

Table 3: **BMI among the study population (n = 65)**

BMI	No of patients	Percentage
Normal weight	34	52
Over weight	22	34
Obesity	7	11
Mild thinness	2	3

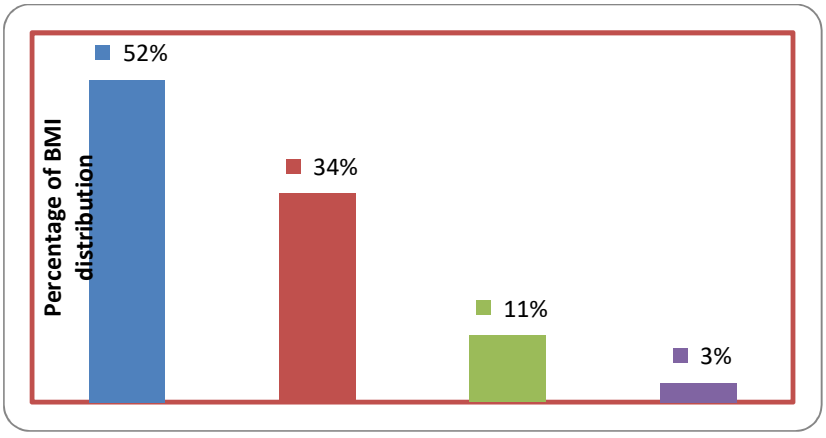

Figure 3: BMI among the study population (n = 65)

6.4. Education among the study population

A total of 65 osteoarthritis patients, 46.69% (48) were in illiterate, 23.07% (23) were in Primary, 24.61% (25) were in Secondary, 4.61% (5) were in Graduate.

Table 4: Education among the study population (n = 65)

Education	No. of patients	Percentage
Illiterate	31	48
Primary	15	23
Secondary	16	25
Graduate	3	5

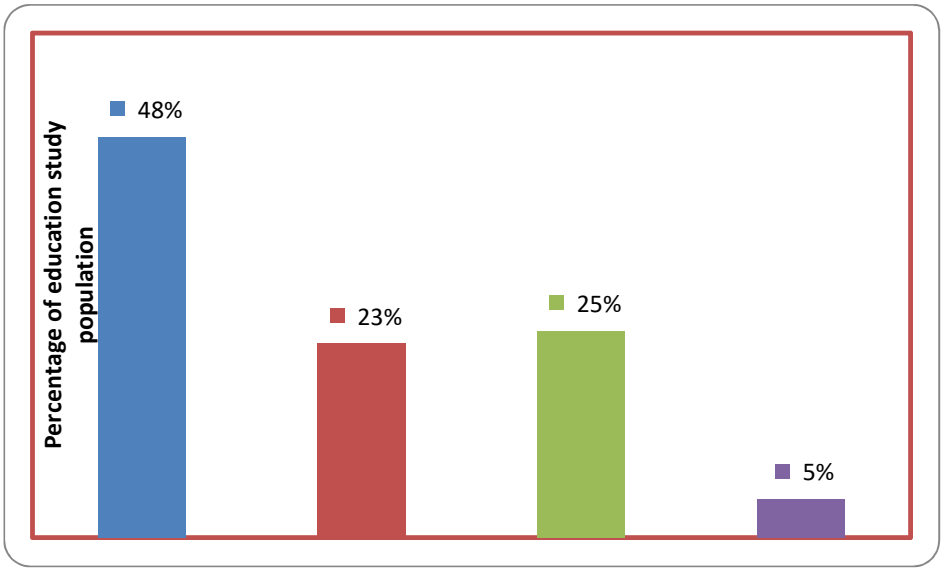

Figure 4: Education among the study population (n = 65)

6.5. Associate disease along with osteoarthritis patients (n = 65)

A total of 65 osteoarthritis patients, 55.38% (55) were in Osteoarthritis patients, 27.69% (28) were in Hypertension patients, 12.30% (12) were in Hypertension and diabetic patients, 4.61% (5) were in Diabetic patients.

Table 5: Associated disease along with the study population (n = 65)

Associate disease	No .of Patients	Percentage
OA	36	55
OA,HTN	18	28
OA,HTN,DM	8	12
OA,DM	3	5

Where OA-Osteoarthritis**, HTN-**hypertension, **DM-**Diabetic Mellitus

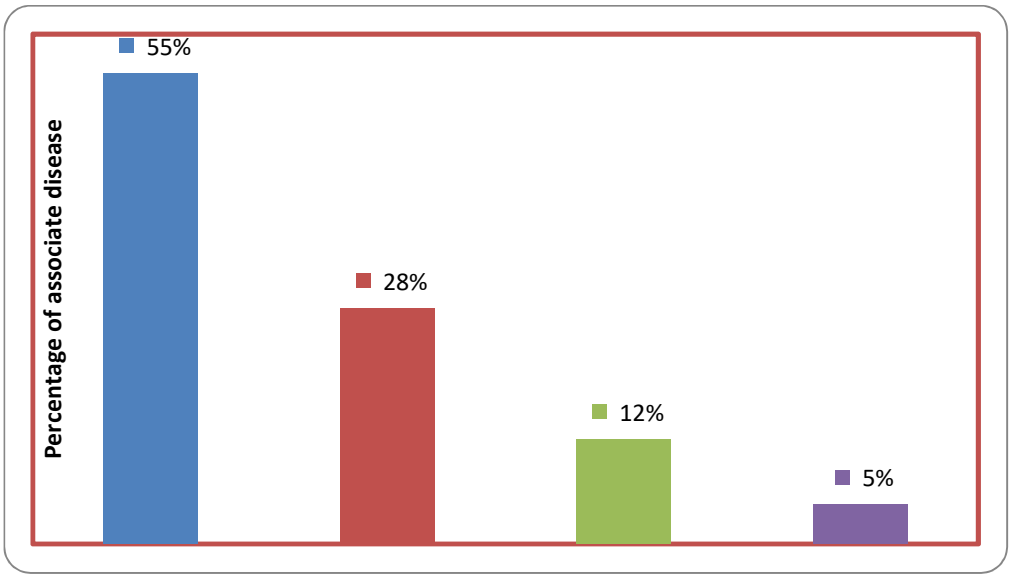

Figure 5: Associate disease along with osteoarthritis patients among the study population (n = 65)

6.6. Social history of the study population with osteoarthritis patients (n=65)

A total no of 65 patients, 31% (31) were in alcohol taking patients, 38% (38) were in smoker patients, 31 %(31) were in both taking alcohol and smoker patients.

Table 6: Social history among the study population (n = 65)

Social History	No of patients	Percentage
Alcohol	20	31
Smoker	25	38
Alcohol, Smoker	20	31

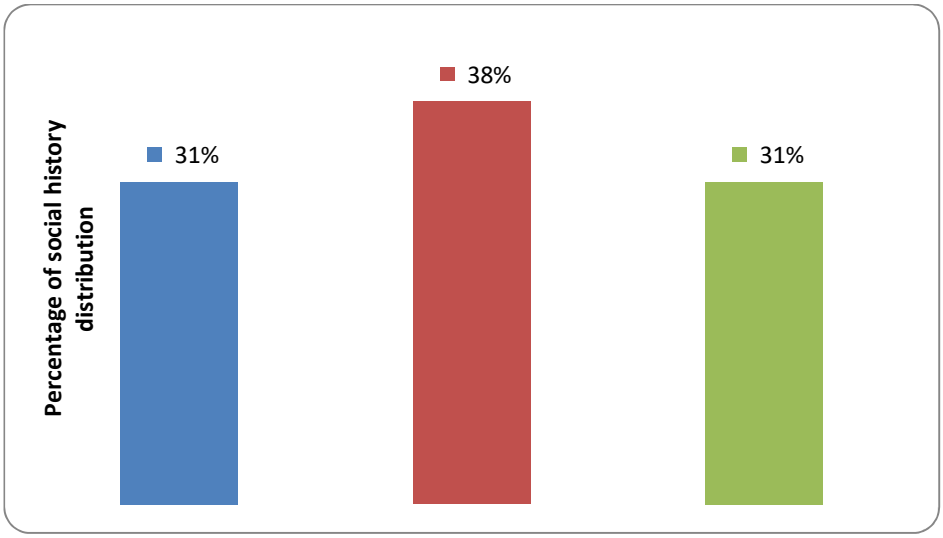

Figure 6: Social history of the study population with osteoarthritis patients (n=65)

6.7.Class Of Drugs Prescribed with Osteoarthritis TKR Patients (n=65)

A total of 65 osteoarthritis patients, 38.46% (38) were in NSAID, 15 %(15) were in Anti Hypertension drugs, 15% (15) were in Anti biotic drugs, 7.69 %(08) were in Oral hypo glycemic , 15% (15) were in Anti ulcer drugs.

Table 7: Class of drugs prescribed with osteoarthritis tkr patients (n=65)

Class of drug prescribed	No.of patients	Percentage
NSAID	25	38
ANTI BIOTICS	10	15
ANTI HYPERTENSION	10	15
ORAL HYPOGLYCEMIC	5	8
ANTI ULCER	10	15

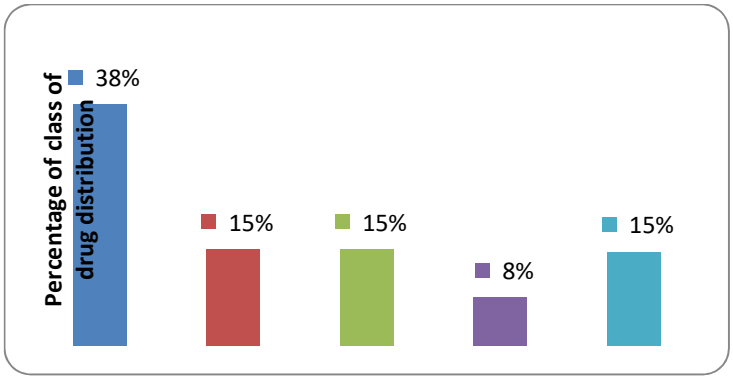

Figure 7: Class of drugs persribed with osteoarthritis tkr patients (n=65)

6.8. Complaints of osteoarthritis patients in right, left and both knee study population (n=65)

A total no of 65 osteoarthritis patients ,41.53%(42) were in TKR Right knee complains patients,56.92%(57) were in TKR Left knee complaints patients, and finally 1.53%(2) were in TKR Left knee complaints patients.(Table 8,Figure 8)

Table 8: Complaints of osteoarthritis patients in right, left and both knee study population (n=65)

Complaints	No of patients	Percentage
TKR Right knee	27	42
TKR Left knee	37	57
TKR Both knee	1	2

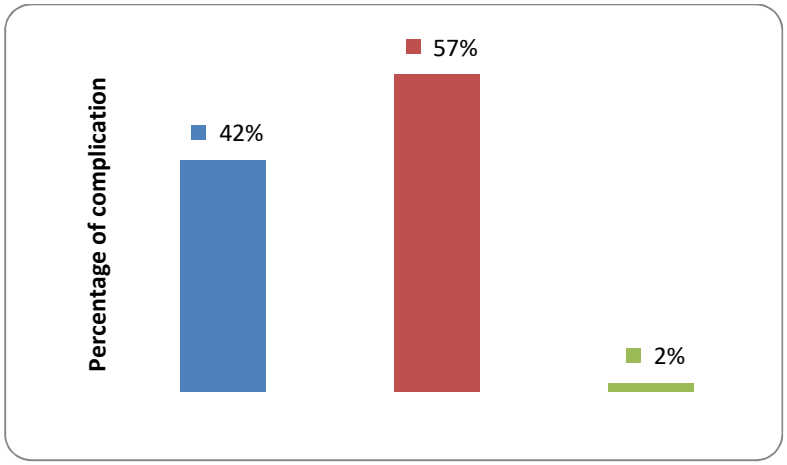

Figure 8: Complaints of osteoarthritis patients in right, left and both knee study population (n=65)

6.9. Scale of difficulty with osteoarthritis patients among with study population (n=65)

A total no of 65 osteoarthritis patients, 30% (30) were in extremely complication patients, 22%(22) were in very difficulty complication patients,07%(07) were in moderate complication patients, and finally 04% (04) were in slightly complication patients.

Table: 9 Scale of difficulty with osteoarthritis patients among with study population (n=65)

Scale of difficulty	No of patients	Percentage
Extremely complication	30	46
Very difficulty complication	22	34
Moderate complication	9	14
Slightly complication	4	6
None	0	0

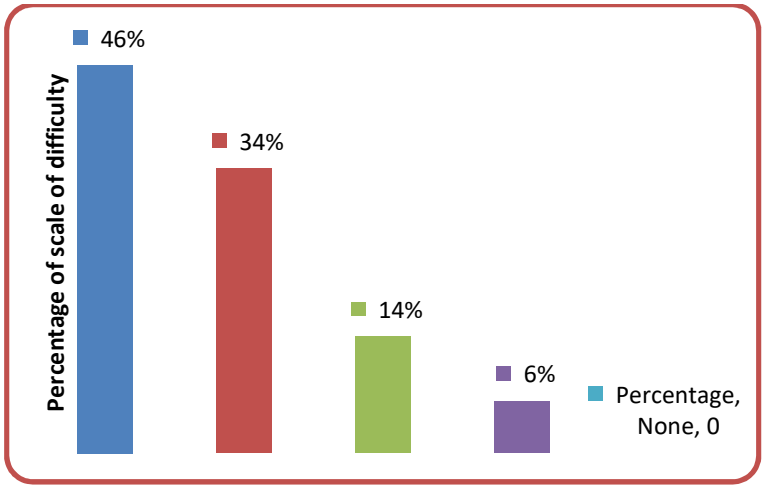

Figure 9: Scale of difficulty with osteoarthritis patients among with study population (n=65)

6.10. Pre and post operative complication score for osteosrthritis patients (n=65)

A total no of 65 osteoarthritis patients are pre and post operative complication score divided in to male and female. The male pre operative average score were in, 78.67±10.47 and post operative score were in 7.91±2.84.The female pre operative average score were in, 81.61±7.78 and post operative score were in 8.46±3.17.

Table: 10 Pre and post operative complication score for osteosrthritis patients (n=65)

GENDER	Average pre operative score(±) SD	Average post operative score(±) SD
Male	78.67±10.47	7.91±2.84***
Female	81.61±7.78	8.46±3.17***

Discussion

Our study shows a higher complication of pre and post operative score for osteoarthritis patients' comparative analysis A total no of 65 osteoarthritis patients are pre and post operative complication score divided in to male and female. The male pre operative average score were in, 78.67±10.47 and post operative score were in 7.91 ± 2.84. The female pre operative average score were in, 81.61±7.78 and post operative score were in 8.46 ± 3.17.

Conclusion

Finding in our study concludes with the general treatment observed in Pre and Post operative complication in Osteoarthritis patients. We found that preoperative body size, body composition and short-term weight loss were not related to 30-day post-operative outcomes in patients. A high content of marine preoperative habitual diets may protect against after surgery.

Both pharmacological and non-pharmacological treatments are in use for the treatment of OA with different benefits as well as harms specifically pharmacological treatment. Especially, patients should undergo pharmacological treatment under the guidance of doctor. Research is all carried on new strategies to treat osteoarthritis with minimum side effect. Our study concluded that complication of osteoarthritis was dramatically reduced after the total knee arthroplasty.

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