Section: Physiotherapy

Original Research Article

A STUDY TO FIND OUT THE PAIN INTENSITY AFTER ADL IN POST TKR SUBJECT THREE MONTHS AFTER SURGERY

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ABSTRACT

Background: Total Knee Replacement(TKR) are very common surgery now a days. The most common reason for the replacement surgery is to relieve severe pain caused by osteoarthritis people who need knee replacement surgery usually have problem walking, climbing stairs & getting in and out of chairs. The aim of this study was to find out the pain intensity after Activities of Daily Living (ADL) in post TKR patients three months after surgery.
Materials and Methods: The participants of the present cross sectional study were selected from all over the West Bengal. Total 181 known post TKR patients after fulfilling the inclusion criteria were included in the study. The statistical data were analyzed using SPSS V.20.0 and Microsoft Excel.
Results: In the present study 15% (28 patients) were between 50 to 60 years of age and 45% (82 patients) were between 61 to 70 years of age. Male and female TKR occurrence is 23% (42 patients) and 77% (139 patients). Among The Post TKR subjects 22% (40 patients) are with no pain, 59% (107 patients) are with mild pain and 19 % (34 patients) are with moderate pain. According to the data obtained the KOOS scores of 50-60 age group are pain 63.56%, ADL 71.3%, Quality of life 70.34% and the total score is 68.3. **Conclusion:** After 3 months of TKR most of the patient's pain is mild and ADL is much more improved than it was before surgery.
Keywords: Pain intensity, ADL, TKR, Surgery.

INTRODUCTION

Thekneemaintainsstabilityandcontrolduringavariety ofloadingsituations. It consists of two bony articulations; the articulation between the femur and tibia bears most of the body weight, while the articulation between the patella and femur creates safriction less transfer over the knee of the forces generated by contraction of the quadriceps femorismuscle.[1]

The ACL is considered the main stabiliser of the knee, contributing to about 85% of the knee stabilisation, and enabling smooth and stable flexion and rotation of the knee.2 As a result, it is the most frequently injured and has been the major focus of studies in recent decades, and its importance and fundamental role in knee stability has led to a substantial body of work investigating its anatomy,[3,4] physiology,[5,6] biomechanics,[7,8] assessment,[9-13] risks,[14,15] and rehabilitation.[16-20] at all positions of knee flexion.[21,22] The popliteofibular ligament acts as a static restraint to the external rotation of the tibia on the femur and to posterior tibial translation. There are additional small ligaments that surround the knee and aid in maintaining overall knee stability, including the capsular ligament, anterolateral ligament, arcuate ligament, and posterior oblique ligament.

The identification of risk factors for chronic pain after TKR is a fundamental step in designing

interventions to improve patient outcomes. Under standing the relevance of non-modifiable factors, such as sex and ethnicity, can help patients and clinicians work together to make informed decisions about TKR. Although some factors may not be modifiable, others may be amenable to intervention. Identification of modifiable patient-related risk factors is an important element in the development of interventions to improve outcomes after TKR. Previous systematic reviews have synthesised the literature on preoperative risk factors for chronic pain after TKR.[23,24] The sere views have found evidence for a range of modifiable preoperative patient-related risk factors, including painintensity, catastrophising, mental health and comorbidities. Preoperative interventions have largely focused on exercise and education and have shown little long-term post operative benefit.[24] Further interventions specifically targeting pain-related behaviours, such as cognitive-behavioural patient education and pain-coping skill straining, are being evaluated. While the potential value for preoperatively identifying at-risk patients and targeting them with appropriate interventions is clear, multivariable models have been found to have low predictive power, explaining less than 10% of the variability in chronic pain. An operation itself is an important risk factor for chronic pain,[25] and factors relating to the operation and early recovery may be important risk factors. A risk index including pre-surgical variables and acute post surgical pain had 'fair' predictive power for the development of chronic postsurgical pain across diverse surgery types.

The present study was conducted with the objective to find out the pain intensity after ADL in post TKR patients three months after surgery.

MATERIALS AND METHODS

The present cross sectional study was carried in different areas of West Bengal among the Post TKR patients.

Inclusion Criteria: All male and female patients age between 45 to 80 years, patients with three month TKR pain, total knee replacement and knee pain. Patients who were willing to part of study after consent.

Exclusion Criteria: Patients with Joint infection around knee joint, patients with traumatic injury knee joint, patients with carcinoma, patients having Pain before three months after TKR and patients with recent fracture and stiffness in lower limb.

Sample size: Total 181 patients fulfilling the inclusion criteria were included in the study. A predesigned, pretested, semi-structured, interviewer-administered questionnaire was used.

Study Technique: Participants were selected conveniently from all over the West Bengal. All participants of this study were given a university approved consent form. In addition, the research process was explained in full. Research was started only after receipt of a signed consent form from the participants. Data was collected from structured questionnaire which included variables. Participants were free to withdraw their participation without prejudice.

Data Analysis: All Statistical Analysis Plan was done using IBM SPSS (Statistical Package for the Social Sciences) Version 20.0. The statistical analyses were performed according to the requirements of the study. Data was derived from the following questionnaire VAS used to presence, and prevalence of pain, KOOS for measuring disability. The demographic questionnaire was formulated by the researcher to document the demographic details. The data obtained was analyzed using descriptive statistics of mean and percentage values of continues, nominal and ordinal data

Ethical issues

Institutional Human Research Ethics Committee approved the study.

RESULTS

Table 1: Demographics characteristics of the study subjects. (n=181)

Age group	Number	%
50-60years	28	15
61-70years	82	45
71-80years	71	40
Total	**181**	**100**

Here according the 181 data obtained the pain percentage is 15% (28 patients) in between 50 to 60 years of age and 45% (82 patients) in between 61 to 70 years of age and 35% (71 patients) in between 71 to 80 years of age. [Table 1]

Table 2: TKR percentage according to gender. (n=181)

Gender	Number	%
Male	42	23
Female	139	77
Total	**181**	**100**

According to the 181 data obtained the male and female TKR occurrence is 23% (42 patients) and 77% (139 patients). [Table 2]

Table 3: VAS score of TKR patients. (n= 181)

VAS Score	Number	%
None	40	22
Mild	107	59
Moderate	34	19
Total	**181**	**100**

Among The Post TKR subjects 22% (40 patients) are with no pain, 59% (107 patients) are with mild pain and 19 % (34 patients) are with moderate pain. [Table 3]

Table 4: KOOS score for knee pain. (n=181)

Age group	Number	Pain	ADL	Quality of life	Total score
50-60years	28	63.56%	71.3%	70.34%	68.3
61-70years	82	61.07%	67.3%	57.71	60.24
71-80years	71	55.02%	61.76%	56.02%	57.56

According to the data obtained the KOOS scores of 50-60 age group are pain 63.56%, ADL 71.3%, Quality of life 70.34% and the total score is 68.3. The scores of 61-70 years age group are pain 61.07%, ADL 67.3%, Quality of life 57.71% and total score is 60.24. The scores of 71-80 age groups are pain 55.02%, ADL 61.76%, quality of life 56.02% and total score is 57.56. [Table 4]

DISCUSSION

The mean total scores for preoperative ADL indicated partial independence in this study. This study is to masseur the ADL activity like climbing two to three steps of stairs, walking inside a room, using/getting on and off a toilet, and moving from bed to chair and back. For elderly knee OA patients with knee weakness and pain, the most difficult task was climbing stairs because they could only rely on handrails for added support. Patients who have received TKR surgery have difficulty performing tasks that require stretching in the knee. Climbing stairs was again the most difficult task to perform. In the current study, the level of ADL at the three time points significantly differed by age. The ADL scores were lowest in patients aged 80 years or older, which is consistent with the literature.[26] The results of this study suggest that, regardless of age category, a mean ADL score of 74 or higher is a reasonable and objective criterion for discharge. Older patients are likely to have severe degenerative knee problems.[26] Additionally, those who lived in detached, single-family homes had higher ADL scores compared to those who lived in bungalows at all three time points in my study, stratified random sampling is recommended to obtain a sample that represents the overall population. Additionally, the subjects in this study had a high average age. Therefore, some required the assistance of family members to complete the questionnaire. For some participants, the researcher needed to review medical records to obtain correct medical information.

We chose follow-up-time of 3 months to allow healing of the wound and soft-tissue. earlier studies have shown that most of the improvement occurs within the first 3 months after the operation.[27,28,29]
In this study the result obtained from the post TKR patients is like the KOOS score 68.3 (50-60 years), 60.24 (61-70 years) and 57.56 (71-80 years). That means there is more pain and difficulty in ADL in older age group.
In the study by Lamb & Frost30 lower limb leg press strength on the operative side was pre-operatively 31% weaker than in the contra-lateral limb. However, preoperative physiotherapy or exercise has not been shown to improve recovery after surgery in studies with follow-up times of between 3 months and 2 years.[31-34]
on discharge from hospital patients received instructions on strengthening exercises, using their own leg weight as a resistance, and knee motion exercises, as well as advice to return to normal daily activities, which were not sufficient to restore knee function to the pre-operative level. to achieve this, progressive strength training would be needed. Studies with long-term follow-up are needed to determine the effectiveness of more active rehabilitation after knee arthroplasty.

Limitations of the study

The study used a small sample size, which limited the strength of statistical analysis. This study estimated the prevalence of pain intensity in ADL among post TKR patients without investigations associated with knee pain.

CONCLUSION

ADL levels they had before surgery, improvement in ADL is a useful indicator when TKR patients are evaluated for discharge. In future studies, data should be collected at more time points before surgery, including 48 hours after TKR surgery, 3 months after surgery. Medical professionals can use the results of this study to screen for high-risk individuals, provide timely intervention strategies,

and assist patients in returning to normal ADL as soon as possible.

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