

Outreach of Clinical Functions from The Action of Total Replacement of Knee Joint In Osteoarthritis Case In Educational Hospital University Of Sumatera Utara

Elvan Trianda^{1*}, Chairiandi Siregar²

¹Resident of Orthopaedic and Traumatology, Faculty of Medicine University of Sumatera Utara/ Haji Adam Malik Hospital-Medan, Indonesia

²Consultant of Orthopaedic and Traumatology, Faculty of Medicine University of Sumatera Utara/ Haji Adam Malik Hospital-Medan, Indonesia

Abstract : The purpose of this study was to determine differences in clinical outcomes before and after a total knee replacement procedure was performed in Osteoarthritis. In this study we used Twenty-one patients with knee osteoarthritis who underwent total knee replacement surgery in February 2018 to April 2018 who entered the inclusion criteria were included in this study with osteoarthritis classification according to Kellgren-Lawrence to knee replacement therapy, gender age and follow-up minimum 4 months after surgery after the following up from research we get the result that the distribution of the demographic characteristics of Osteoarthritis subjects who underwent knee joint replacement measures carried out by Oxford Knee Score before and after surgery with 21 subjects as many as 18 subjects (85.7%) and 3 as men. 14.3%), with the mean value of the Oxford Knee Score before the operation 12.24 ± 3.34 and the mean value of the Oxford Knee Score after the operation 32.57 ± 3.45 , Total knee replacement surgery in osteoarthritis patients is very satisfying, this is evidenced by the good clinical outcome of the Oxford Knee Score.

Key words : Osteoarthritis, Oxford Knee Score, Total Knee Replacement

Introduction

Osteoarthritis (OA) is the most common joint disease worldwide and affects 9.6% of men, 18% of women over 60 years of age. This disease can occur in any joint, but is most often found in the hips, knees, joints of the hands, feet, ankles and spine. OA contributes to disability by 3% of the average age of life in the world, making it one of the many major causes of disability worldwide. OA is one of the most significant causes of musculoskeletal disorders in the western world and has become a disease that causes disability in Asia. In Indonesia, people with Osteoarthritis reach 5% at the age of 60 years. Knee osteoarthritis prevalence in Indonesia is also quite high, reaching 15.5% in men and 12.7% in women of all Osteoarthritis sufferers.¹

The case of OA causes high direct and indirect costs. Direct costs such as contact with health professionals, medical examinations, medicines, and hospital care costs contribute an average of 44.5 euros per OA patient per month in a cohort of employees in the city of Liege. In addition, indirect costs such as sick days and leave are 66.3 euros per OA patient per month. The progress of a nation's economic level and changes in lifestyle also make the prevalence of OA and the burden of OA disease increase further in the following years.¹

Assessment of clinical function is crucial to the assessment of quality of life. In knee OA surgery the assessment instrument using the American Knee SocietyScore (AKS) is the most commonly used.^{2,4} However, interview questions about the quality of life carried out by patients without input from health workers make this assessment very objective, because this assessment is based solely on experience from patient. In knee OA operations, an Oxford Knee Score (OKS) assessment is also often performed.³ Previous research with the OKS assessor before surgery on knee OA yields relevant and satisfying results.^{5,6,7,8} On this basis the researcher is interested in performing a function assessment clinical use of knee osteoarthritis by using the Oxford Knee Score before and after surgery, Total Knee Replacement.

Materials and Methods

The study carried out was an analytical study obtaining Oxford Knee Score assessment before and after the total knee replacement action with a crossectional method, which aims to analyze the difference in clinical function of patients who performed total knee replacement.

The research and sample selection was carried out in the hospital namely RSUP. Haji Adam Malik and network hospital. The study began in February 2018 until April 2018 by taking patient data and conducting an Oxford Knee Score examination before and after surgery.

The subjects for the study were taken from all affordable populations that met the inclusion and exclusion criteria. While the subjects studied were all subjects that persisted until the end of the study and entered into the final analysis. Criteria for enrollment were All patients who will carry out knee joint replacement surgery for indications of Osteoarthritis and Willing to become participants in the study, after obtaining an explanation by signing an informed consent on a voluntary basis. The exclusions were : 1) History of Deep Vein Thrombosis (TVD) and Pulmonary Embolism (EP), 2) Using estrogen as Hormone Replacement Therapy, 3) History or develop malignancy and undergo chemotherapy, 4) Take anticoagulants / antiplatelets within the seven days before surgery, 5) Using thromboprophylaxis or elastic compression stocking or graduated compression devices, 6) Total paralysis due to stroke or spinal cord injury, 7) Using a central venous catheter, 8) Underwent major surgery in the last three months, 9) History or have Inflammatory Bowel Disease and Nephrotic Syndrome, 10) History or suffer from hemorrhagic disorders (thrombo-cytopenia <100.000, thrombophilia, including thalassemia), 11) Smoking at least one stick per day for at least one year, 12) Sepsis.

21 subjects were taken consecutively, which is based on the order of admission to the hospital until the desired number is fulfilled in a certain period. The research sample was obtained from medical record data and had complete data.

Patients who met the inclusion criteria recorded age, sex, weight, height and telephone number that could be contacted then the study sample was divided consecutively into two groups of operations, namely: before surgery and after surgery. Patient data were obtained from patients undergoing total joint replacement surgery where patients included in the inclusion criteria were interviewed and calculated using oxford knee score.

Data is collected in the form of raw data, then sorted systematically and analyzed through a computer-based statistical analysis program. The results are narrated and clarified in the form of tables and graphs. The numerical value of the Oxford Knee Score examination before and after the total knee replacement surgery will be made an average / \pm and SD. The level of significance used is 5% (0.05) and the level of significance of the trend is 10% (0.1). The statistical analysis used if data is normally distributed is paired T-Test, but if the distribution data obtained is not normal then the statistical analysis used is Wilcoxon.

Results

The distribution number of research subjects for patients suffering from knee osteoarthritis was 21 subjects with 18 as many women (85.7%) and 3 as many men (14.3%). With the youngest age of the research subjects 53 years and the oldest age of the study subjects 72 years with a mean and standard deviation of 62.07 ± 5.92 years.

Table 2. Distribution of demographic characteristics of subjects in knee osteoarthritis

Variabel	Total
Female, n(%)	18 (85.7%)
Male, n(%)	3 (14.3%)
Youngest	53 y.o
Oldest	72 y.o
Mean age	62.07 ± 5.92

Distribution of demographic characteristics of Osteoarthritis subjects who underwent knee joint replacement performed by Oxford Knee Score before and after surgery with 21 subjects as many as 18 people (85.7%) and 3 as men. (14.3%), with the mean value of the Oxford Knee Score after the operation 32.57 ± 3.45 and the mean value of the Oxford Knee Score before the operation 12.24 ± 3.34 .

Table 1. Distribution of the demographic characteristics of Osteoarthritis subjects who underwent knee joint replacement measures performed by the Oxford Knee Score before and after surgery

		Mean OKS
<i>Oxford Knee Score</i>	Before Operation	12.24 ± 3.34
	After Operation	32.57 ± 3.45
Significance	$p < 0.001$	

Statistical analysis carried out in this study using Wilcoxon statistical analysis, because the data are not normally distributed. Table 2. It shows that there are significant differences in outcomes from clinical outcome outcomes of the Oxford Knee Score before and after the total knee joint action performed with a p value of 0.001 (<0.05).

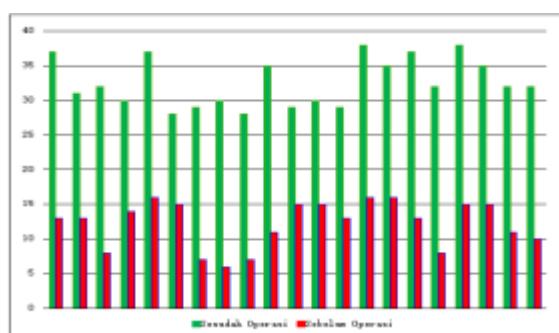


Figure 1. The Diagram Before and after surgery

Discussion

The aim of this study was to determine the outcome of the clinical function assessment of the Oxford Knee Score before and after total knee joint replacement.

Systematic discussion follows the classification as follows: 1) general description, 2) Characteristics of the research subjects divided into 1) distribution of demographic characteristics of subjects suffering from knee osteoarthritis, 2) distribution of demographic characteristics of Osteoarthritis subjects undergoing knee joint replacement measures conducted by Oxford Knee assessment Score before and after surgery.

The general description of the subject of this study broadly uses 21 subjects studied and the final analysis is carried out, the study begins in February 2018 until April 2018 by taking patient data and conducting an Oxford Knee Score examination before and after surgery. The characteristics of the subjects in this study were divided into 2, firstly the distribution of demographic characteristics of the subjects who suffered from knee osteoarthritis as many as 21 subjects with as many as 18 women (85.7%) and men as many as 3 people (14.3%) and the youngest age of the study subjects was 53 years while the oldest age of the study subjects was 72 years with a mean and standard deviation of 62.07 ± 5.92 years, the second was the distribution of demographic characteristics of Osteoarthritis subjects who underwent knee joint replacement measures carried out by Oxford Knee Score before and after surgery.

Data retrieval and calculation of the Oxford Knee Score were carried out in stages with the initial stage of selecting samples of subjects included in the inclusion criteria. Then after the number of samples is sufficient, patients who enter the inclusion criteria are interviewed and the calculation of the oxford knee score. Statistical analysis in this study using Wilcoxon statistical analysis, because the data are abnormally distributed, from these results it was found that there were significant differences in outcomes from the Oxford Knee Score clinical function outcome before and after the knee joint total count was performed with a p value of 0.001 (<0.05).

In this study there was no difficulty for patients to understand the contents of the questions used for this study. Ceiling effects or lack of clarity before surgery showed that a substantial number of patients had a very high Oxford Knee Score before surgery and this showed very serious knee abnormalities. In this situation, the possibility of deterioration after the total replacement surgery of the lute joint is likely to be undetectable, but the ceiling effect of the Oxford Knee Score is very rare in the clinical context of practice, but it also provides significant losses in the use of this evaluation tool.

With the results of the analysis obtained, the initial hypothesis of the research was fulfilled, that there was a significant difference from the Oxford Knee Score clinical function assessment before and after the total knee replacement action was carried out, and this was in accordance with previous studies by J.-Y . Jenny, et al., In the journal they conducted a study on 200 patients with mean OKS 43.7 after surgery while in this study the mean OKS after surgery 32.57.

On the other hand, the absence of the effect of the floor (floor effect) before surgery shows that even if clinical improvement is obtained after surgery will be detected. After surgery, the situation will be very different. The Oxford Knee Score will substantially produce lower results and this indicates that the results obtained are usually good.

Conclusions

From the results of the statistical analysis of the outcomes of clinical function assessment Oxford Knee Score before and after the total knee joint replacement obtained after the OS value (32.57 ± 3.45) was significantly greater ($p <0.001$) than the OS value before surgery (12.24 ± 3.34).

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