

Outcomes of Total Knee Arthroplasty in patients aged 70 years and above

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Background

Osteoarthritis is the most common condition affecting joints, causing pain and disability, especially in the elderly [1]. Total knee arthroplasty (TKA) has been shown to be effective in treating pain and restoring function in the majority of patients suffering from advanced knee osteoarthritis [2]. TKA is associated with impressive gains in the quality of life (QOL) of patients [3]. However, there is still a concern among patients, relatives and referral doctors regarding perioperative safety considering the age of the patients and comorbidities. Our aim of the study was to find out short-term outcomes in patients undergoing TKA in the age group above 70 years.

Material and Methods

We retrospectively reviewed 45 patients (50 knees) above the age of 70 years from the year 2009 to 2021 who underwent

primary TKA by a single orthopaedic surgeon at our hospital. Outcomes measured were the length of stay, mortality and perioperative complications like infection, deep vein thrombosis, ICU stay. All patients received spinal anesthesia +/- epidural analgesia/nerve block and were given an intraoperative periarticular pain block consisting of a mixture of ropivacaine, ketorolac, dexamethasone and clonidine. Patients also received 1 g of tranexamic acid before incision and closure with insertion of a hemovac drain that was removed on postoperative day 1 or 2, depending on the amount of drainage. The medial parapatellar approach was used for all patients. Intravenous antibiotics were continued for 24 h postoperatively. Mechanical DVT prophylaxis was given. Patients were mobilized on the next day of surgery and were encouraged to bear full weight on both legs under the supervision of a physical therapist.

Results

Out of 45 patients (above age group 70), there were 24 males (53%) and 21 females (47%) (Fig. 1). All underwent a primary total knee replacement. Unilateral TKA were done in 30 patients and bilateral TKA

were done in 5 patients (Fig. 2), so total 50 TKA. Among 40 unilateral TKA, the right side was done in 15 patients and left side was done in 25 patients.

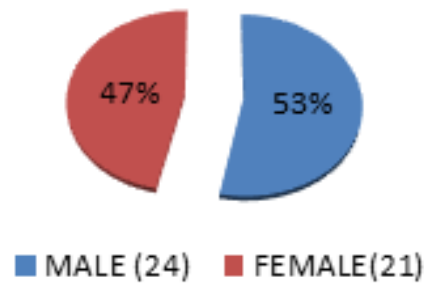


Fig. 1. Sex ratio

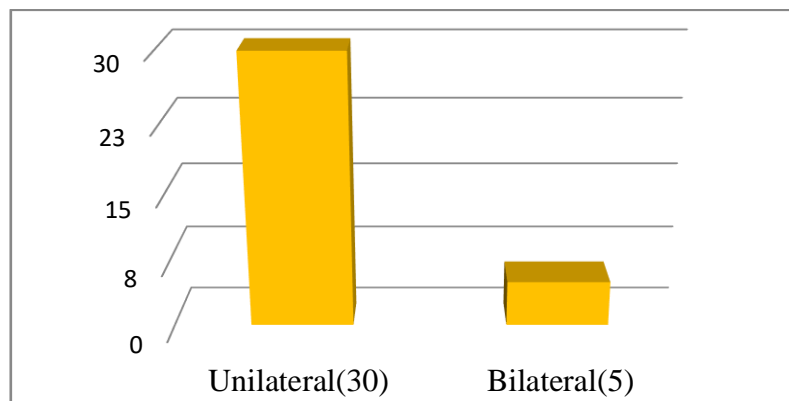


Fig. 2. Unilateral vs Bilateral

Co-morbid conditions were present in 38 patients (84%) (Fig. 4). Among that hypertension were present in 35 patients, diabetes mellitus in 21 patients, coronary artery disease (CAD) in 9 patients, chronic kidney disease (CKD) in 3 patients, cerebro-vascular accident (CVA) in 1 patient and hypothyroidism in 1 patient. Spinal anesthesia was given to all patients in addition to that epidural anesthesia were given in 18 patients and nerve block were given in 5 patients. The average length of stay (LOS) in unilateral TKA were 7.3 days and in bilateral TKA were 12 days.

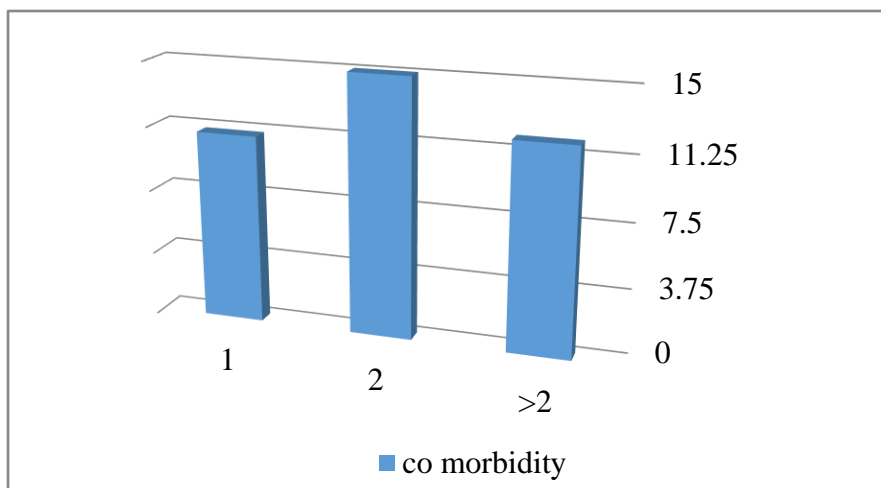


Fig. 4. Comorbidity.

The average length of stay in comorbid patients were 8.1 days and in non-comorbid patients were 6.7 days (Fig. 3). No death or readmissions were noted in our study. No surgical complications like infection, deep vein thrombosis, pulmonary embolism noted in our patients. Four patients had

medical complications such as hyponatremia, hypoxia and cellulitis of leg. We noted that the Intensive care was needed in two out of these four patients.

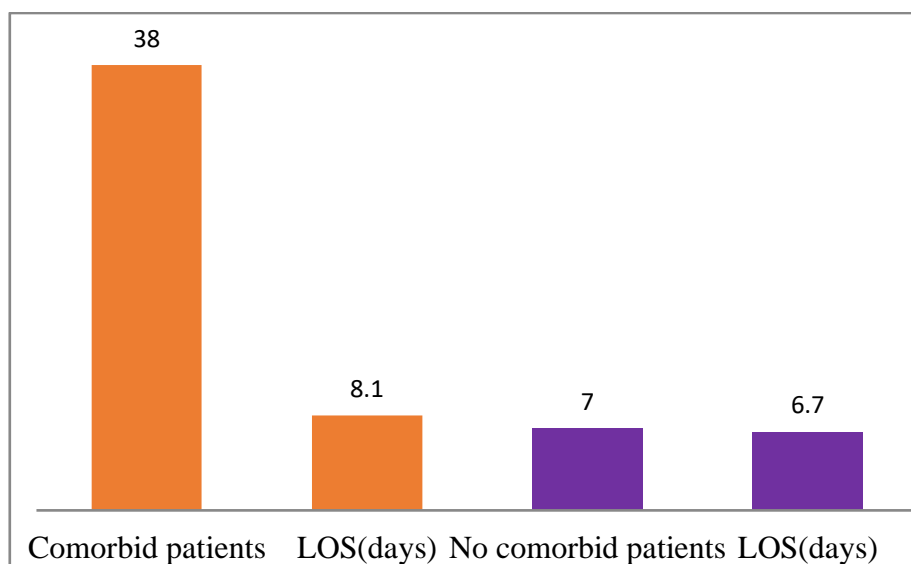


Fig. 3. Comorbidity vs length of stay



Fig. 4. Pre and post-op x-ray of a patient.

Discussion

Total knee replacement is the most common arthroplasty procedure worldwide and its number is increasing rapidly [4]. However, in our country, there is a concern among the patients, relatives and even doctors about the safety of this elective surgery. This is relevant as the surgery is often done in patients above the age of 60 years. Many of these patients are likely to have co-morbid conditions which are going to affect their recovery both from an anaesthetic and surgical point of view.

In our study, the sex ratio: of males (53%) and females (47%) were almost equal and

comparable. Out of 45 patients, almost 38 patients had co-morbid conditions. This implies about 84% of this cohort of patients had co-morbid conditions but did not suffer from complications postoperatively. When comparing the length of stay in patients with comorbid conditions (8.1 days) and in patients without comorbidity (6.7 days), there is not much difference between these groups.

Hospital length of stay after TKA has been gradually declining over the past decade, and this can be attributed to modern anesthetic techniques, multimodal analgesia (with less emphasis

on narcotic utilization), and early postoperative mobilization. The clinical and functional outcomes after TKA have also improved secondary to the enhanced instrument and implant designs, development of postoperative pathways, and better preoperative optimization protocols [5].

Donell et al., in his study concluded that age is not a determining factor in the outcome following total knee replacement [6]. Kremers et al., reported that the high prevalence of arthritis, the growing demand for increased mobility and quality of life, and the success of joint replacement surgery over the recent decades have resulted in increasing joint replacements of knee and hip surgeries in the United States [7].

Conclusion

In our experience at a multi-specialty hospital with support to the orthopedic patients from intensive care facilities and all the other specialists, the short-term results of total knee replacement surgery are satisfactory and safe in patients who are elderly above the age of 70 years and in those patients who have co-morbid conditions.

References

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