

Comparison of Simultaneous Bilateral with Unilateral Total Knee Arthroplasty in Thabo Crown Prince Hospital

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Purpose: The purpose of this study was to compare patient demographics and results between simultaneous bilateral total knee arthroplasty (SBTKA) and unilateral total knee arthroplasty (UTKA) in Thabo Crown Prince Hospital. All operations were performed by a single surgeon.

Methods: 153 patients who underwent simultaneous bilateral total knee arthroplasty (SBTKA group, $n = 48$, 96 knees) and unilateral total knee arthroplasty (UTKA group, $n = 105$) between 1 January 2013 - 31 May 2017 were recruited. Both groups were compared for postoperative complication, rate of blood transfusion, need for intensive care unit (ICU) admission, length of stays, time from surgery to initial physical therapy and mortality rate.

Results: Patients undergoing SBTKA were older than UTKA group (65 ± 8.6 VS 62.4 ± 7.6 , p -value = 0.156), had higher proportion of female (87.50% VS 80%, p -value = 0.408), and higher frequency of having comorbid condition (81.25% VS 70.47%) but not significantly different (p -value > 0.05). The mean of length of hospital stay was 7.70 days for UTKA group and 8.40 days for the SBTKA group but there was no difference between two group (p -value = 0.17). The blood transfusion requirement was higher in the SBTKA group than in the UTKA group (4.2% VS 2.9%) but was not different between groups (p -value = 0.672). No significant differences in the time from surgery to initial physical therapy between two groups (p -value = 0.465). Superficial wound infection were occurred only 1 cases in both groups. No serious postoperative complication, no death or need for ICU admission were encountered in both groups.

Conclusion: SBTKA seems to be safe procedure and is not associated with increase of surgical risk for patient in Thabo Crown Prince Hospital.

Keywords: Bilateral Knee, Unilateral knee, Total knee arthroplasty, postoperative complication

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Introduction

Osteoarthritis (OA) is one of the most prevalent condition resulting to disability particularly in elderly population. Incidence of knee OA is rising by increasing average age of general population. About 13% of women and 10% of men aged 60 years and older have symptomatic knee OA⁽¹⁾. An epidemiological study of 392 elderly Thai patients with OA of the knee, 86 males and 306 females, with a mean age of 67.8 years⁽²⁾. The economic costs of OA are high including those relate treatment and those due to lost work productivity⁽³⁾. Pain and other symptoms of OA may have a profound effect on quality of life affecting both physical function and psychological parameters⁽¹⁾. Pain from OA is a key symptom for decision to seek medical care and is an important antecedent to disability. Two thirds of the patient who undergo total knee arthroplasty have bilateral degenerative disease and 20% of them will undergo surgery of the second knee within 2 years after

first⁽⁴⁾. Total knee arthroplasty (TKA) can provide reliable pain relief in patients with moderate to severe degenerative joint disease⁽⁵⁾. Patient who have bilateral knee arthritis are candidates for TKA may be decide between simultaneous or staged bilateral TKA and orthopedic surgeon should have participate in decision making whether to pursue a bilateral knee replacement under a single anesthetic or two separate unilateral TKA⁽⁶⁾. Although arthroplasty of both knee under one session carries several advantages that included bilateral function recovery, single hospital stays, lower medical costs, single anesthetic and quicker return to function^(4,7). There is still concern about the safety of the operation and the procedure might be associated with higher cardiopulmonary complication⁽⁸⁾. Several reports in the literature have shown that SBTKA may be associated increase risks of postoperative complication and mortality rate than unilateral TKA⁽⁷⁻⁸⁾. In contrast several reports have shown similar rates of postoperative complication between 2 procedures^(6,9-12). Thus, the choice of surgical management remains a subject of debate. Author retrospectively analyzed all SBTKA and UTKA surgeries performed by a single orthopedic surgeon in Thabo Crown Prince Hospital between 1

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January 2013 - 31 May 2017. The aim of this study was to compare patients undergoing SBTKA and those undergoing UTKA in terms of postoperative complications, need for intensive care unit (ICU) admission, rate of blood transfusion, length of hospital stays, time from surgery to initial physical therapy and mortality rate.

Patients and Methods

This study was a retrospective study that included 153 osteoarthritis knee patients (201 knees) from 1 January 2013 - 31 May 2017. The patient were categorized into two groups; simultaneous bilateral total knee arthroplasty (SBTKA) and unilateral total knee arthroplasty (UTKA). The SBTKA in this study were performed sequentially by a single surgeon, with the patient under a single anesthetic. All surgeries were performed in Thabo Crown Prince Hospital. None of patient had history of knee joint infection or history of trauma which need required previous knee surgery. Each patient's comorbidity of cardiovascular, renal disease, pulmonary disease, DM and HT was reviewed. All patients underwent a preoperative assessment by an anesthesiology to ensure suitability for surgery. A patient was excluded from SBTKA only if the medical or anesthesiology consultant deemed the patient too high risk for bilateral procedures. HCT was measured in all patients just prior to arthroplasty. Blood transfusion was performed if preoperative HCT below 30%. All the operations were performed by a singer surgeon. The prosthesis were used Stryker scorpioflex or scorpio NRG for all procedure. The same surgical technique with extramedullary tibia alignment and intramedullary guide femoral alignment. Tourniquet applications were conducted in the same fashion in both groups of patients. After skin closure, the tourniquet was released. In the SBTKA, the procedure for second knee was initiated upon skin closure of the other knee. A hemovac drain was placed until 24th postoperative hour. All patients received prophylactic antibiotic administered one hour prior to incision and all patients received routine tranexamic acid intravenously before surgery and continued for the next 24 hours (1 gram before skin incision and 250 mg every six hours). Analgesic regimen included use of non-steroid anti-inflammatory drugs and opioids on the first postoperative day and only upon request. The patients were transferred from the postoperative recovery room to patient ward after a few hours. On the first postoperative day, patient were mobilized, partial to fully weight bearing under the supervision of physiotherapist and continue until discharge. They are fit for discharge when the patients is medically stable, walking independently with the help of appropriate walking aids and that their functional ability is sufficient to allow

discharge to their home. A transfusion was applied when HCT below 30%.

Retrospective review of the patient demographics, including age, gender, body weight, height and body mass index (BMI), was conducted using data retrieved from medical record. Comorbidities recorded were DM, hypertension, stroke, pulmonary, renal and cardiovascular disease. In addition, preoperative diagnosis, The American Society of Anesthesiologists classification (ASA class), anesthesia type, preoperative HCT, postoperative intraarticular drainage volume and duration of operation were assessed. The postoperative outcomes that were followed included blood transfusion requirements, surgical wound infection, surgery-related complication, postoperative complication, need for intensive care unit (ICU) admission, mortality during the hospital stays, time for surgery to initial physical therapy, the length of stay, Cardiac event after postoperative 30 days and deep surgical wound infection after postoperative 90 days were assessed and compared between two groups.

Statistical analysis

Statistical analysis was performed using SPSS ver. 14.0. Continuous variables were compared using t-test. Mann-Whitney test was used to compare for nonparametric data for independent samples. Chi square test or Fisher's exact test for the proportion preexisting medical condition, intraoperative and postoperative complications in the two groups were used. A *p*-value of less than 0.05 was considered statistically significant.

Results

153 total knee arthroplasty patients were included. Of those patients, 105 underwent UTKA, the mean age of the patients was 62.40 ± 7.66 years (range 50-79 years) and the percentage of female was 80% and 48 underwent SBTKA (96 knee), the mean age of the patients was 65.06 ± 8.58 years (range 50-80 years) and the percentage of female was 87.50%. The patient's height, weight and BMI were similar between the two groups (Table 1). The most common indication for surgery was primary osteoarthritis in both groups. Patients in SBTKA group were older and had higher numbers of comorbidity than those UTKA group (81.25, 70.47% respectively) but patients SBTKA group had a lower prevalence of cardiovascular disease than UTKA group (6.67% in UTKA, 2.88% in BTKA). Hypertension was the most prevalence morbidity for all two groups, affecting 41.67% of SBTKA group and 30.48% of UTKA group. Medical comorbidities are summarized in Table 2. The mean ASA score in SBTKA group was not significant differ from the UTKA group, ($p = 0.056$). Preoperative HCT level were $37.55 \pm$

5.58% and $35.97 \pm 4.21\%$ in the UTKA and SBTKA group respectively.

In the analysis of intraoperative clinical data, significant longer operation ($p < 0.000$) was demonstrated in the SBTKA group. The length of hospital stay was longer for SBTKA (average, 8.4 days). Patient were hospitalized an average of 7.7 days for UTKA group. One patient in UTKA group had prolonged hospital stay for 17 days due to a perioperative fracture tibia and subsequent superficial wound infection. Postoperative blood loss in drain was 252.11 ± 127.32 ml for UTKA and 432.91 ± 223.21 ml for SBTKA but the total drainage of the UTKA group was not significantly different when compared to unilateral side of the SBTKA group ($p > 0.05$). The UTKA patients were received blood transfusion 2.9% compare to 4.2% for the SBTK patients but were not found

significant difference ($p = 0.67$). No differences existed in the time from surgery to initial physical therapy between two groups ($p = 0.465$).

No incidence of major postoperative complication in both groups. Procedure-related complication occurred in one patient in UTKA group had fracture tibia. There was no death related to surgery. No patients in both groups required intensive care unit (ICU) admission. Analysis for superficial wound infection did not reveal difference between two groups, ($p = 0.539$). Wound redness that did not meet criterion for superficial infection was lower in the UTKA group (15.20% VS 18.75%). No patient in either group presented with cardiac event within 30 days or presented with deep wound infection within 90 days after discharge. The full list of postoperative complications summarized in Table 3.

Table 1 Demographic and Clinical data

Characteristics	UTKA (N=105)	SBTKA (N=48)	p-value
Age (year)			
Mean \pm SD	62.40 ± 7.66 (50-79)	65.06 ± 8.58 (50-80)	0.156
Median (year)	63	65	
Sex			
male	21 (20%)	6 (12.50%)	0.408
female	84 (80%)	42 (87.50%)	
Body weight (Kg)	65.54 ± 10.96	63.49 ± 9.09	0.175
Height (cm)	156.27 ± 8.60	155.00 ± 6.56	0.760
BMI (kg/m^2)	26.87 ± 3.92	26.47 ± 3.45	0.191
Diagnosis			
Primary OA	92 (87.60%)	44 (91.70%)	0.460
Secondary OA			
Rheumatoid arthritis	13 (12.40%)	4 (8.30%)	
Pre-op HCT (%)	37.55 ± 5.58	35.97 ± 4.21	0.083
Pre-op blood Transfusion	5 (4.76 %)	3 (6.25%)	0.701
ASA class			
ASA I	5 (4.80%)	0	0.056
ASA II	80 (76.20%)	32 (66.67%)	
ASA III	20 (19%)	16 (33.33%)	
Anesthesia			
Spinal block	93 (88.60%)	32 (66.70%)	0.001
GA	12 (11.40%)	16 (33.30%)	
Operation time (min)	76.05 ± 11.02	138.45 ± 18.69	0.000
Left knee		70.71 ± 7.28	0.030
Right knee		69.74 ± 10.82	0.020
Blood in drainage (ml)	252.11 ± 127.32	432.91 ± 223.21	0.000
Drain left		212.06 ± 105.95	0.060
Drain right		223.04 ± 151.03	0.230
Length of stay			
Mean \pm SD	7.70 ± 2.97 (3-17)	8.40 ± 2.85 (5-15)	0.170
Median	7	7	
Physical therapy			
Postoperative day 1	100 (95.24%)	45 (93.75%)	0.465
Postoperative day 2	5 (4.76%)	3 (6.25 %)	

Table 2 Preoperative comorbidities

Comorbidities	UTKA (N=105)	SBTKA (N=48)	p-value
DM	4 (3.80%)	2 (4.17%)	0.916
HT	32 (30.48%)	20 (41.67%)	0.175
DM and HT	14 (13.33%)	4 (8.33%)	0.525
Dyslipidemia	11 (10.48%)	4 (8.33%)	0.215
Cardiovascular disease	7 (6.67%)	1 (2.08%)	0.237
Renal disease	1 (0.95%)	2 (4.17%)	0.183
COPD/asthma	3 (0.86%)	1 (2.08%)	0.237
Thyrotoxicosis	1 (0.95%)	2 (4.17%)	0.331
Cerebrovascular disease	1 (0.95%)	3 (6.25%)	0.317
Total	74 (70.47%)	39 (81.25%)	

Table 3 Intraoperative and postoperative complications of SBTKA and UTKA

Complication	UTKA (N=105)	SBTKA (N=48)	p-value
Postoperative transfusion	3 (2.9%)	2 (4.2%)	0.672
Wound redness	16 (15.20%)	9 (18.75%)	0.393
Superficial surgical wound infection	1 (0.95%)	1 (2.08%)	0.539
Deep wound infection	0	0	-
Bowel ileus/Constipation	1 (0.95%)	3 (6.25%)	0.125
Hyponatremia	1 (0.95%)	0	-
ICU admission	0	0	-
Cardiopulmonary Complication	0	0	-
CNS complication	0	0	-
Surgical complication			
Fracture tibia plateau	1 (0.95%)	0	-
Cardiac event after postoperative 30 days	0	0	-
Deep wound infection after postoperative 90 days	0	0	-
Mortality	0	0	-

Discussion

This study reports a comparison of outcomes of 153 patients (201 knees) who underwent SBTKA or UTKA at Thabo Crown Prince hospital by a single surgeon. Total knee arthroplasty (TKA) is the treatment of choice for advanced knee degenerative joint disease that aims to relieve pain and movement limitation caused by degenerative disorder such as gonarthrosis. It is estimated that 80% of these age 65 are affected by osteoarthritis in the knee and this is only projected to increase with an aging and overweight population and that of these, one third present with bilateral symptoms⁽¹²⁾.

The observation in this study that the patient were older in SBTKA group 65.1 years (range: 50-80) than in UTKA group 62.4 years (range: 50-79) is not consistent with the results of previous studies. Eric R Bohm et al⁽¹³⁾ reported that SBTKA patients were younger than patients were underwent UTKA, 64 and 68 years, respectively. Mean age was reported as 61.9 years in SBTKA group and 62.9 years in UTKA group by Joseph et

al.⁽¹⁴⁾ In the absence of consensus on the safety of SBTKA Young-Joon et al.⁽⁹⁾ reported that no significant difference in the complication rate was observe with comparison between SBTKA and UTKA in patients aged 75 years and older. Lynch et al.⁽¹⁵⁾ identified a greater proportion of postoperative congestive heart failure in the SBTKA cohort examined a population aged older than 80 years which was markedly older than the mean age of this study. Surgeons may offer SBTKA procedures to younger patients, thus creating a selection bias and possibly contributing to better outcomes for SBTKA. There is no study that can define an absolute or set of medical comorbidities that places a patient at increased risk for morbidity or mortality of the SBTKA. However we believe that pre-existing comorbidity a more important factor than biological age in patient selection.

When both joints are affected SBTKA reduce overall cost of care and length of the hospital stay by approximately 4 to 6 days⁽¹⁶⁾. The numbers of total knee arthroplasty is going to

increase in the future. The association between SBTKA and the incidence of morbidity and mortality has not been clearly defined not only in advanced age patients but also in young patients. Despite these advantage, the safety of SBTKA remains controversial. In this study there was no significant difference in postoperative complication rates after surgery between the SBTKA and UTKA groups and are consistent with those other study. Walmsley et al.⁽¹⁷⁾ found no difference in 90 day mortality between patients with SBTKA and patient with bilateral total knee arthroplasty staged within 5 years and patients with UTKA. Scott et al.⁽¹⁸⁾ found no significant difference in post operative complication rate between SBTKA and staged BTKA group. Young-Joon et al.⁽¹⁰⁾ reported that the complication rate of the bilateral group was slightly higher than that of unilateral group, the difference was not statistically meaningful (3.8% vs 2.4%, $p = 0.438$). Qi Y et al.⁽¹⁹⁾ reported the rate of complication between SBTKA and UTKA is similar. Erin et al.⁽²⁰⁾ reported rates of intraoperative and postoperative complication including cardiovascular, thromboembolic and neurologic complication and mortality did not differ significantly between two groups. Shin Y H et al.⁽²¹⁾ reported that the rates of postoperative complication, such as myocardial infarction and deep vein thrombosis, were not different between the groups.

The available studies provide conflicting results. Stavros G. et al.⁽¹⁶⁾ reported the prevalence of procedure-related complication was higher for SBTKA (12.2%) compared to UTKA (8.2%) and in hospital mortality was highest for patients undergoing SBTKA (SBTKA 0.5%, UTKA 0.3%) and reported that patients undergoing SBTKA had 1.6 higher rate of procedure-related complication and mortality compared with those undergoing UTKA.

The relationship between surgical volume and outcome following TKA has been previously suggested. Azeem T et al.⁽²²⁾ defined high-volume by setting the mark at 50 TKAs/year. SooHoo et al.⁽²³⁾ have indicated that surgical volume is one factor that predicts the rate of complication, infection and mortality following TKA. Odum SM et al.⁽²⁴⁾ compared with hospital with high of TKA procedures performed, lower-volume hospitals had significantly increased odds of minor complications and mortality. Approximately 50 case of TKA are performed in author's hospital per year was included in the high volume of TKA procedures. The rates of postoperative complication and patient's satisfaction following TKA are also related to the level of experience of the surgeon. As a community hospital, it is therefore important for author's hospital to evaluate the outcomes of SBTKA vs UTKA. However, it is our understanding that rigorous preoperative

assessment and proper patient's selection are essential to prevention of cardiovascular complications and mortality rate following SBTKA.

Previous studies have shown a greater volume of blood transfusion with SBTKA, Yakup et al.⁽²⁵⁾ reported transfusion need was 1.5 fold greater in the SBTKA group which is consistent with the previous study shown that SBTKA patients generally had higher rates of blood transfusion may be due to the bilateral bone and soft tissue cuts^(13,19,26). The amount of blood transfusion in this study was no significant between two groups ($p = 0.672$). The use of tranexamic acid is effective tool in reducing the transfusion rates by almost 70% in SBTKA⁽²⁷⁻²⁸⁾. When tranexamic acid was administered in multiple dose indicating the possibility of reducing transfusion⁽²⁷⁻²⁸⁾. However, these results should be interpreted with caution because blood transfusion protocol and transfusion requirement threshold may vary between hospital and between surgeons⁽²⁹⁾.

It has been suggested that patients undergoing SBTKA experience a delay in rehabilitation, including a longer duration of physical therapy and length of hospital stay. Time from surgery to initial physical therapy between two groups in this study were not significantly different ($p = 0.465$) that suggests that persons with SBTKA do not require more physical therapy to achieve similar functional outcomes. This lends further support to the argument that SBTKA is a cost-effective surgical intervention for bilateral disease. If a person were to undergo a staged bilateral TKA procedure separated by a period greater than a few months, they would likely require twice the amount of rehabilitation services to achieve the same outcome.

Postoperative infection however is multifactorial and contributory factors may have included longer operation time, more personnel in operating room, and rescrubbing, redraping, and changing of instruments between SBTKA procedures⁽¹²⁾. However, in this study has found no significant difference between two groups in rate of surgical wound infection. Same as previous study, Eric R et al.⁽¹³⁾ showed that knee infection between BTKA and UTKA group were 0.5% and 0.7% respectively ($p = 0.3$). Poutsides LA et al.⁽³⁰⁾ reported that the rate of deep infection was similar among the group and the rate of superficial infection was lower in the SBTKA cohort (0.28% VS 0.87%).

In this study patients undergoing SBTKA had a higher rate of gastrointestinal complications but not significantly different ($p = 0.125$). Lombardi et al.⁽³¹⁾ found the gastrointestinal complication, mainly ileus, in 8.1% and 4.4% of patients who underwent SBTKA and UTKA respectively. Higher postoperative ileus in patients

undergoing SBTKA may be due to a larger amount of postoperative opioids prescribed to control pain. Yakup et al.⁽²⁵⁾ reported a mean hospital stay 7.5 ± 1.84 (5-16) in SBTKA patients and 6.1 ± 1.24 (4-13) in UTKA patients. Herseki et al.⁽³²⁾ reported a mean hospital stay length of 17.19 days in SBTKA and 10.48 days in UTKA patients. Shin Y H et al.⁽²¹⁾ reported a mean hospital stay length of 9.8 ± 6.5 in SBTKA patients and 8.8 ± 2.3 in UTKA patients. Stavros et al.⁽³³⁾ suggested that the same day BTKA would shorten the total length of hospitalization by 4-6 days resulting in 18-36% of medical cost reduction. In this study, the length of hospital stay of the SBTKA was higher than UTKA group but was no significant different, which is not more notable considering the need for the future hospitalization for another TKA of the contralateral knee in the unilateral group. This longer length of stay (two hospitalizations) for UTKA has been shown to provide the health care system with a higher cost. However, studies have reported different length of hospital stays due to the variation in discharge criteria.

Conclusion

The outcomes of SBTKA and UTKA have been studied previously. In this study has shown similar outcome between SBTKA and UTKA group for requirement of blood transfusion, infection rate, postoperative complication, length of stay, time to rehabilitation and mortality rate. SBTKA seems to be safe procedure and is not associated with increase of surgical risk in Thabo Crown Prince Hospital.

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การศึกษาเปรียบเทียบระหว่างการผ่าตัดเปลี่ยนข้อเข่าเทียมแบบพร้อมกันสองข้างและการผ่าตัดเปลี่ยนข้อเข่าเทียมแบบข้างเดียวในโรงพยาบาลสมเด็จพระยุพราชท่าบ่อ

วรรณ วิจารณ์, พบ

วัตถุประสงค์: เพื่อเปรียบเทียบระหว่างการผ่าตัดเปลี่ยนข้อเข่าเทียมแบบพร้อมกันสองข้างและการผ่าตัดเปลี่ยนข้อเข่าเทียมแบบข้างเดียวโดยศัลยแพทย์คนเดียวกันใน โรงพยาบาลสมเด็จพระยุพราชท่าบ่อ

วิธีการศึกษา: การศึกษานี้เป็นการศึกษาย้อนหลังในผู้ป่วยจำนวน 153 ราย ที่ได้รับการผ่าตัดเปลี่ยนข้อเข่าเทียมในระหว่าง 1 มกราคม 2556 ถึง 31 พฤษภาคม 2560 โดยแบ่งผู้ป่วยเป็น 2 กลุ่ม กลุ่มแรกได้รับการผ่าตัดเปลี่ยนข้อเข่าเทียมแบบพร้อมกันสองข้าง จำนวน 48 ราย (96 เข่า) กลุ่มที่สองได้รับการผ่าตัดเปลี่ยนข้อเข่าเทียมแบบข้างเดียว จำนวน 105 ราย โดยผู้ป่วยทั้งสองกลุ่มได้รับการผ่าตัดโดยศัลยแพทย์ออร์โธปิดิกส์คนเดียวกันใน โรงพยาบาลสมเด็จพระยุพราชท่าบ่อ ทำการศึกษาเปรียบเทียบภาวะแทรกซ้อนหลังผ่าตัด, การได้รับเลือดหลังผ่าตัด, การเข้ารับการรักษาในไอซียู, ระยะเวลาที่ได้รับการทำกายภาพบำบัดหลังผ่าตัด, ระยะเวลาในการนอนโรงพยาบาลและอัตราตายระหว่างผู้ป่วยทั้งสองกลุ่ม

ผลการศึกษา: ผู้ป่วยที่ได้รับการผ่าตัดเปลี่ยนข้อเข่าเทียมทั้ง 2 วิธีเป็นเพศหญิงมากกว่าเพศชาย ผู้ป่วยที่ได้รับการผ่าตัดเปลี่ยนข้อเข่าเทียมแบบพร้อมกันสองข้างมีอายุเฉลี่ย 65 ± 8.6 ปี โดยมากกว่าผู้ป่วยที่ได้รับการผ่าตัดเปลี่ยนข้อเข่าเทียมแบบข้างเดียวที่มีอายุเฉลี่ย 62.4 ± 7.6 ปี แต่ไม่มีความแตกต่างกันอย่างมีนัยสำคัญทางสถิติระหว่างทั้งสองกลุ่ม ($p\text{-value} = 0.156$) และมีโรคประจำตัวก่อนผ่าตัดมากกว่า (80.25% และ 70.47% ตามลำดับ, $p\text{-value} > 0.05$.) การได้รับเลือดหลังผ่าตัดในทั้งสองกลุ่มไม่มีความแตกต่างกัน ($p\text{-value} = 0.672$) ระยะเวลาในการนอนโรงพยาบาลในกลุ่มที่ได้รับการผ่าตัดเปลี่ยนข้อเข่าเทียมแบบพร้อมกันสองข้างมากกว่ากลุ่มที่ได้รับการผ่าตัดเปลี่ยนข้อเข่าเทียมข้างเดียวแต่ไม่มีความแตกต่างกันอย่างมีนัยสำคัญทางสถิติ (8.4 และ 7.7 วัน, $p\text{-value} = 0.17$) วันที่ได้รับการทำกายภาพบำบัดหลังผ่าตัดในผู้ป่วยทั้งสองกลุ่มพบว่าไม่มีความแตกต่างกัน ($p\text{-value} = 0.465$) เช่นเดียวกับอัตราการเกิดการติดเชื้อแผลผ่าตัดพบเพียง 1 ราย ในผู้ป่วยแต่ละกลุ่ม ในผู้ป่วยทั้ง 2 กลุ่ม ไม่มีรายใดที่ต้องเข้ารับการรักษาในไอซียูหรือมีภาวะแทรกซ้อนรุนแรงหลังผ่าตัดหรือเสียชีวิตทั้งในขณะและหลังผ่าตัดเปลี่ยนข้อเข่าเทียม

สรุป: การผ่าตัดเปลี่ยนข้อเข่าเทียมแบบพร้อมกันสองข้างใน โรงพยาบาลสมเด็จพระยุพราชท่าบ่อมีความปลอดภัยและเป็นทางเลือกที่ดีในผู้ป่วยที่มีภาวะโรคข้อเข่าเสื่อมทั้งสองข้าง