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ORIGINAL

PATIENT-REPORTED OUTCOMES OF UNICOMPARTMENTAL VS. TOTAL KNEE ARTHROPLASTY FOR ANTERO-MEDIAL OSTEOARTHRITIS: A RANDOMIZED CONTROLLED TRIAL

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ABSTRACT

Background: Osteoarthritis (OA) is a leading cause of disability, with isolated medial compartment knee OA being a common presentation. While total knee arthroplasty (TKA) remains the standard treatment for advanced knee OA, unicompartmental knee arthroplasty (UKA) has gained attention for its potential benefits for selected population, including faster recovery and improved patient satisfaction. **Aim:** We aimed to compared UKA and TKA in patients with anteromedial knee OA (AMOA), focusing on patient-reported outcomes (PROs), operative and postoperative outcomes. **Methods:** Eligible patients were randomized into one study group; UKA or TKA and followed for at least two years. Functional outcomes were evaluated using the Oxford Knee Score (OKS), Knee Society Score- Knee Score (KS-KS) and Functional Score (KS-FS)-, Forgotten Joint Score (FJS) and Range of Motion (ROM). Patient satisfaction was assessed at the final follow-up visit. **Results:** Forty-seven patients (53 knees) were included and randomized across study groups (UKA = 22, TKA = 31). Functional outcomes were comparable between the two groups, with no statistically significant differences in post-operative improvement of OKS (24.3 ± 10.1 vs. 21.3 ± 8.6 ; $p = 0.21$), KS-KS (39.5 ± 22.4 vs. 29.3 ± 14.4 ; $p = 0.07$), KS-FS (39.8 ± 26.9 vs. 31.8 ± 17.8 ; $p = 0.23$), and statistically significant differences in postoperative FJS (80 ± 20.1 vs. 68 ± 15.5 ; $p = 0.024$) and Postoperative ROM (132.0 ± 10.3 vs 125.0 ± 13.1 ; $p = 0.035$) .

However, UKA patients reported significantly higher satisfaction rates (86.4% "Very Satisfied" vs. 61.3% in TKA). Additionally, UKA demonstrated operative advantages, including significantly shorter operative time, reduced blood loss, shorter hospital days and wound length, and fewer overall complications. **Conclusion:** UKA offers favorable functional outcomes compared to TKA, with faster recovery, lower blood loss, greater joint "forgottenness," improved ROM, higher patient satisfaction, and fewer complications, making it a first choice for appropriately selected patients with AMOA.

KEYWORDS Anteromedial Knee OA (AMOA); Unicompartmental Arthroplasty; Patient-Reported Outcomes; Satisfaction

1. INTRODUCTION

Osteoarthritis (OA) is a leading contributor to disability among older adults, with a 50% lifetime risk of developing symptomatic knee OA. In up to 50% of OA cases, the condition primarily affects the medial compartment of the knee, while the lateral and patellofemoral compartments show milder changes (Peersman et al., 2019). Anteromedial osteoarthritis (AMOA) is a frequently observed wear pattern in knees affected by primary osteoarthritis. For patients with advanced bone-on-bone disease, optimal surgical treatment remains a topic of ongoing discussion (Mortensen et al., 2019). The number of joint replacement surgeries has risen in recent years, driven by longer life expectancy, a more active population, and increasing obesity rates (Mortensen et al., 2019). Total knee arthroplasty (TKA) remains the preferred standard treatment for advanced isolated or generalized knee OA (Blevins et al., 2020). However, issues such as postoperative pain, joint stiffness, and prolonged recovery may lead to increased patient dissatisfaction (Lum et al., 2018). Unicompartmental knee arthroplasty (UKA), which targets only the arthritic medial compartment of the joint, has been utilized to treat knee AMOA (Mikkelsen et al., 2022). With advancements in technology and surgical techniques, the success rates for medial UKA have significantly improved (Lum et al., 2018). UKA offers advantages such as minimally invasive surgery, preservation of ligaments and bone stock, faster recovery, improved kinematics, and better patient-reported outcomes, including lower mortality rates (Friesenbichler et al., 2018; Hansen et al., 2019). However, as surgical methods and implant designs have evolved, research has shown that UKA is a durable and dependable option for treating a specific group of patients with medial osteoarthritis of the knee (Pearle et al., 2017). The optimal arthroplasty for isolated medial knee OA remains debated between UKA and TKA (Casper et al., 2019). Due to the reported benefits of UKA, there is growing interest in comparing UKA and TKA, particularly regarding patient-reported functional outcomes, rather than the traditional measurements for successful joint replacement such as implant survivorship, physician-assessed metrics, complication rates, and radiological findings (Zuiderbaan et al., 2017). This

clinical trial aimed to assess and compare UKA versus TKA in patients with knee AMOA regarding the PRO and patient satisfaction after surgery, in addition to operative details and postoperative complications.

2. Patients & Methods

We conducted a randomized controlled trial on patients with isolated knee AMOA. The study protocol was approved by the local ethical committee and the Institutional Review Board (IRB) under reference no. (MD.20.08.359).

2.1 Patients' Selection & Randomization

Adult patients presented to the outpatient clinic with clinically and radiologically confirmed knee AMOA were initially evaluated to determine their eligibility. Eligible patients were randomly allocated through a computer-based number generator into 2 groups (Oxford UKA group or NexGen TKA group). Patients had to give informed written consent about the study protocol and awareness of the surgical interventions. All study participants received regular postoperative follow-up at the outpatient clinic for a minimum of two years. This included postoperative visits at 3 and 6 weeks, 3, 6, 12, and 24 months.

2.2 Eligibility Criteria

Patients were eligible for inclusion if they aged >40 years at the time of enrollment and had bone-on-bone AMOA. A functionally intact Anterior Cruciate Ligament (ACL) and Medial Collateral Ligament (MCL) should be present, in addition to a full thickness lateral knee cartilage. Reasons for Exclusion were previous complex knee surgery, history of traumatic or septic knee OA, previous high tibial osteotomy, lateral meniscectomy, history of rheumatoid arthritis or other inflammatory joint diseases.

2.3 Data Collection & Outcomes Assessment

Patients fulfilling the study inclusion criteria were recruited to take full clinical history and underwent preoperative assessments including standard knee examination, routine laboratory investigations, and preoperative radiological evaluation. Furthermore, all patients had to be scored in the following functional knee scores and surveys at baseline: Oxford Knee Score (OKS) [a 12-item patient-reported PRO specifically designed and developed to assess function and pain after arthroplasty] (Liu et al., 2020), Knee Society Score (KSS) - Functional Score (KS-FS), and Knee Score (KS-KS) [a maximum of 100 points for the evaluation of range of motion, stability, and pain with deductions for extension lag, flexion contracture and malalignment] (Kuroda et al., 2016) - , and Forgotten Joint Score (FJS) [a metric ranging from 0 to 100 points based on 12-question PRO created to measure a patient's awareness of their artificial joint] (Wang et al., 2020). The primary outcome was the difference

change in OKS from baseline to final follow-up. Secondary outcomes included differences in KS-KS and KS-FS scores, along with postoperative FJS, Postoperative ROM and patient satisfaction at the final follow-up visit. Additionally, Operative time (Mins), Estimated blood loss (mL), Postoperative Drainage (mL), Hospital staying duration (days), Wound Length (cm), postoperative complications, and revision rates were reported.

2.4 Operative Procedure

UKA patients received cemented medial compartmental mobile-bearing Oxford phase 3 prosthesis (Zimmer Biomet®, Warsaw, IN, USA), while TKA patients received a NexGen cemented posterior-stabilized TKA system (Zimmer Biomet®, Warsaw, IN, USA). Patella resurfacing was not performed in all patients. Standard preoperative protocols and surgical approaches were followed for each group (Laurencin et al., 1991). In order to maintain consistency and alleviate performance bias, a single high-volume experienced senior arthroplasty surgeon performed all surgeries. All patients had the same postoperative follow-up and rehabilitation programs.

2.5 Statistical Analysis

Data was analyzed using SPSS (*IBM SPSS Statistics, Version 26 Armonk, NY: IBM Corp., 2019*). Categorical variables were evaluated using the Chi-square test, and continuous variables were analyzed with the independent samples t-test. Normally distributed data were examined using the independent samples t-test, while non-parametric data were assessed with the Mann-Whitney U-test. Findings are presented as means $\pm$ standard deviations (SD) or median with Interquartile Range (IQR) and 95% confidence intervals (CI). A p-value <0.05 was considered statistically significant.

3. Results

One hundred and seven knees in 95 patients were consecutively enrolled and referred to the knee surgery unit to check their adherence to our preselected eligibility criteria. Twenty-two patients with 26 knees were excluded due to inability to meet inclusion criteria while 11 patients with 13 knees refused to consent and participate in the study. Sixty-eight knees were randomly allocated to the study groups (34 in each group). However, due to lack of UKA implants at our institution, 11 surgeries were declined. Figure 1 illustrates the CONSORT flow chart of the included participants.

3.1 Baseline Characteristics

The UKA group (n=22) and TKA group (n=31) were comparable in age (mean $\pm$ SD: 56.7 ± 6.2 vs. 58.3 ± 8.6 years; $p=0.43$), sex distribution (86.4% vs. 77% female), and BMI (36.6 ± 5.9 vs. 35.3 ± 6.2 kg/m²; $p=0.52$). Obesity

classifications and overall obesity prevalence (86.4% vs. 83.4%) also showed no significant differences. Comorbidities such as hypertension (0% vs. 9.7%) and diabetes mellitus (4.5% vs. 12.9%) were numerically higher in the TKA group. Glycemic control parameters differed significantly between groups with TKA patients exhibiting higher HbA1c ($6.1 \pm 0.6\%$ vs. $5.7 \pm 0.4\%$; $p=0.021$). Preoperative measures, including ROM (114.8 ± 15.6 vs. 114.7 ± 14 degrees), varus deformity (9.9 ± 4.1 vs. 9.5 ± 3.5 degrees), and OKS (11 ± 5.4 vs. 11.5 ± 5.9), were similar ($p>0.05$). Follow-up durations (4.0 ± 0.3 vs. 4.0 ± 0.8 years; $p=0.99$) did not differ between cohorts. These findings suggest balanced baseline characteristics except for glycemic markers, which were elevated in the TKA group. The baseline characteristics of study participants are summarized in Table 1.

3.2 Patients' Reported Outcomes & Satisfaction

Postoperative improvements in OKS (24.3 ± 10.1 vs. 21.3 ± 8.6 , $p=0.21$), KS-KS (39.5 ± 22.4 vs. 29.3 ± 14.4 , $p=0.07$), and KS-FS (39.8 ± 26.9 vs. 31.8 ± 17.8 , $p=0.23$) were numerically greater in the UKA group ($n=22$) compared to the TKA group ($n=31$), though these differences did not reach statistical significance. Postoperative FJS (80 ± 20.1 vs. 68 ± 15.5), $p=0.024$) and ROM (132 ± 10.3 vs. 125 ± 13.1 degrees, $p=0.035$) showed significant intergroup differences. However, patient satisfaction diverged markedly: a higher proportion of UKA patients reported being "Very Satisfied" (86.4% vs. 61.3%), whereas TKA patients were more frequently "Satisfied" (32.3% vs. 9.1%). Dissatisfaction rates were low but higher in the TKA group (6.4% vs. 4.5%). These results suggest comparable functional outcomes between groups but higher satisfaction levels among UKA recipients, particularly in the "Very Satisfied" category. Patients' reported outcomes and satisfaction are detailed in Table 2.

3.3 Operative Findings & Postoperative Complications

The UKA group ($n=22$) demonstrated significantly shorter operative time (median [IQR]: 75 [15] vs. 105 [18] minutes; $p<0.001$), lower estimated blood loss (median [IQR]: 185 [65] vs. 440 [125] mL; $p<0.001$), reduced postoperative drainage (88 [83] vs. 300 [100] mL; $p<0.001$), and shorter hospital staying (median [IQR]: 2 [1] vs. 4 [2] days; $p=0.011$), shorter wound length (median [IQR]: 10 [2] vs. 20 [3] cm, $p<0.001$) compared to the TKA group ($n=31$). Throughout the study period, no major complications were observed, and no patients required surgical revision. Two cases were complicated in the TKA group with postoperative knee stiffness and superficial wound infection, whereas none of the UKA patients reported postoperative complications. Operative findings and postoperative complications are presented in Table 3.

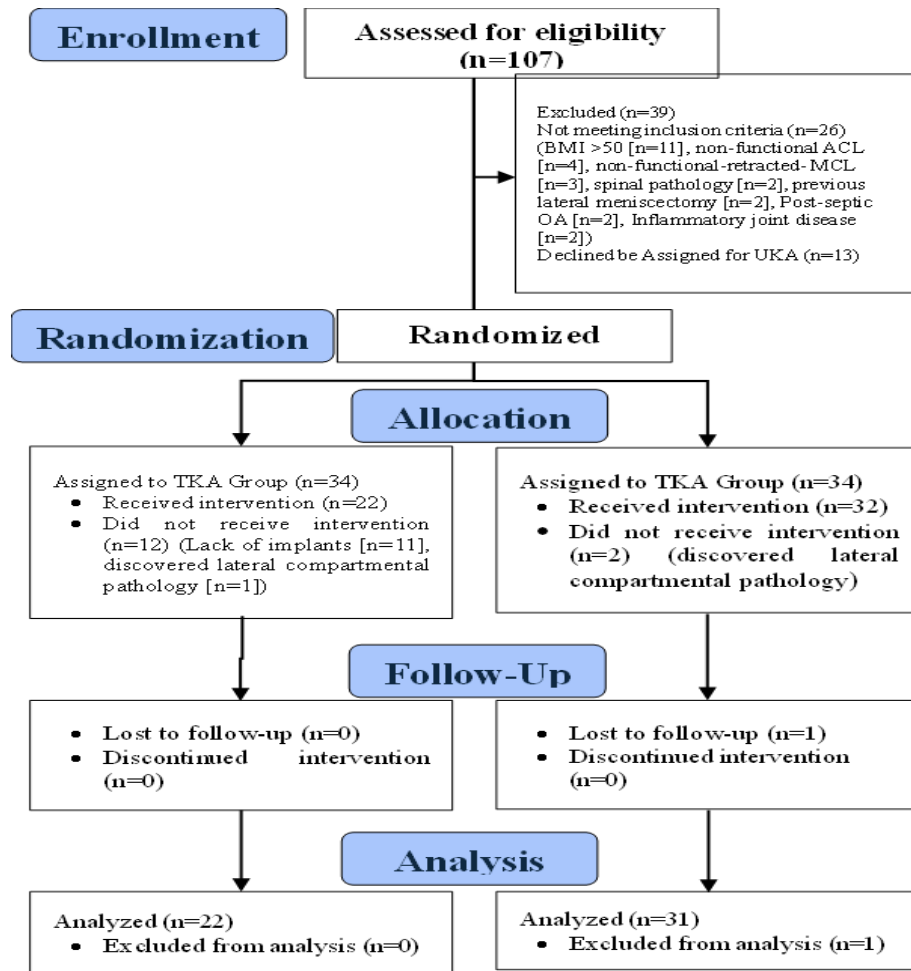


Figure 1: CONSORT Flow Chart of the included Study Participants.

Table 1: (a) Baseline Characteristics of the Study Participants

PARAMETER	UKA (N= 22)		TKA (N=31)	P-VALUE
	Mean (SD)		Mean (SD)	
AGE (YEARS)	56.7 (6.2)		58.3 (8.6)	0.431
SEX				
	Female	19 (86.4%)	24 (77%)	0.494
KNEE SIDE				
	Right	15 (68.2%)	16 (51.6%)	0.268
BMI (KG/M ²)	36.6 (5.9)		35.3 (6.2)	0.522
COMORBIDITIES				
	DM	1 (4.5%)	4 (12.9%)	0.389
	HTN	0 (0%)	3 (9.7%)	0.257
	Obesity*	19 (86.4%)	26 (83.9%)	1.000
OBESITY CLASSIFICATION				
	Class 1*	4 (18.2%)	10 (32.3%)	0.348
	Class 2*	10 (45.5%)	9 (29%)	0.256
	Class 3*	5 (22.7%)	7 (22.6%)	1.000
HBA1C (%)	5.7 (0.4)		6.1 (0.6)	0.021*

Table 1: (b) Baseline Characteristics of the Study Participants

PARAMETER	UKA (N= 22)	TKA (N=31)	P-VALUE
PREOPERATIVE ROM (DEGREES)	114.8 (15.6)	114.7 (14)	0.967
PREOPERATIVE VARUS DEFORMITY (DEGREES)	9.9 (4.1)	9.5 (3.5)	0.727
FOLLOW-UP DURATION (YEARS)	4.0 (0.3)	4.0(0.8)	0.988
PREOPERATIVE OKS	11 (5.4)	11.5 (5.9)	0.736

BMI: Body Mass Index, **UKA:** Unicompartmental Knee Arthroplasty, **TKA:** Total Knee Arthroplasty, **ROM:** Range of Motion, **OKS:** Oxford Knee Score, **SD:** Standard Deviation.

*Statistically significant p -value < 0.05. **Obesity** (BMI ≥ 30 kg/m²), **Class 1** (30.0 – 34.9), **Class 2** (35.0 – 39.9), **Class 3** (≥ 40.0).

Table 2: Patients' Reported Outcomes and Satisfaction

PARAMETER	UKA (N=22)	TKA (N=31)	P-VALUE
	Mean $\pm$ SD	Mean $\pm$ SD	
FINAL OKS (0-48)	35.6 $\pm$ 10.6	32.8 $\pm$ 11.4	0.351
OKS IMPROVEMENT (PRE/POST)	24.3 $\pm$ 10.1	21.3 $\pm$ 8.6	0.212
FINAL KS-KS (0-100)	85.0 $\pm$ 15.2	74.9 $\pm$ 12.6	0.014*
KS-KS IMPROVEMENT (PRE/POST)	39.5 $\pm$ 22.4	29.3 $\pm$ 14.4	0.070
FINAL KS-PS (0-50)	39.5 $\pm$ 13.5	34.8 $\pm$ 13.1	0.212
KS-PS IMPROVEMENT (PRE/POST)	32.5 $\pm$ 16.5	27.6 $\pm$ 13.2	0.253
FINAL KS-FS (0-100)	74.8 $\pm$ 25.9	66.3 $\pm$ 21.9	0.219
KS-FS IMPROVEMENT (PRE/POST)	39.8 $\pm$ 26.9	31.8 $\pm$ 17.8	0.231
POSTOPERATIVE FJS	80.0 $\pm$ 20.1	68.0 $\pm$ 15.5	0.024*
POSTOPERATIVE ROM (DEGREES)	132.0 $\pm$ 10.3	125.0 $\pm$ 13.1	0.035*
ROM IMPROVEMENT (PRE/POST)	17.1 $\pm$ 10.7	10.3 $\pm$ 15.5	0.064
POSTOPERATIVE CLINICAL ALIGNMENT	6.0 $\pm$ 3.5	2.4 $\pm$ 2.9	<0.001*
PATIENT SATISFACTION (N)			
VERY SATISFIED	19 (86.4%)	19 (61.3%)	0.065
SATISFIED	2 (9.1%)	10 (32.3%)	0.093
DISSATISFIED	1 (4.5%)	2 (6.4%)	1.000

UKA: Unicompartmental Knee Arthroplasty, **TKA:** Total Knee Arthroplasty, **OKS:** Oxford Knee Score, **KS-KS:** Knee Society Score – Knee, **KS-PS:** Knee Society Pain Score, **KS-FS:** Knee Society Score – functional score, **FJS:** Forgotten Joint Score, **ROM:** Range of Motion, **SD:** Standard Deviation. * Statistically significant p -value < 0.05.

Table 3: (a) Operative Findings and Postoperative Complications

PARAMETER	UKA (N=22)	TKA (N=31)	P-VALUE
	Median (IQR)	Median (IQR)	
OPERATIVE TIME (MINS)	75 (15)	105 (18)	<0.001*
ESTIMATED BLOOD LOSS (ML)	185 (65)	440 (125)	<0.001*
POSTOPERATIVE DRAINAGE (ML)	88 (83)	300 (100)	<0.001*

Table 3: (b) Operative Findings and Postoperative Complications

PARAMETER	UKA (N=22)	TKA (N=31)	P-VALUE
HOSPITAL STAYING DURATION (DAYS)	2 (1)	4 (2)	0.011*
WOUND LENGTH (CM)	10 (2)	20 (3)	<0.001*
POSTOPERATIVE COMPLICATIONS			
SUPERFICIAL WOUND INFECTION	0 (0%)	1(3.2%)	1.000
STIFFNESS	0 (0%)	1 (3.2%)	1.000
TOTAL	0 (0%)	2 (6.4%)	0.505

*UKA: Unicompartmental Knee Arthroplasty, TKA: Total Knee Arthroplasty, ROM: Range of Motion, IQR: Interquartile Range. *Statistically significant p-value < 0.05.*

4. Discussion

4.1 Findings Summary

We can summarize our findings in two main points: (1) postoperative improvements in OKS, KS-KS, KS-FS, FJS, and ROM were all numerically greater in the UKA group compared to the TKA group, but these differences were not statistically significant in OKS, KS-FS, and were statistically significant in final KS-KS, FJS-12, and ROM indicating comparable functional outcomes between the two procedures with superiority to UKA in final KS-KS, FJS-12, and ROM, (2) Patient satisfaction differed significantly. A higher proportion of UKA patients reported being "Very Satisfied" (86.4% vs. 61.3%), while TKA patients were more frequently "Satisfied" (32.3% vs. 9.1%).

4.2 Our Results in the Context of Previous Literature

A study by Casper et al. was conducted to measure PRO among patients with UKA vs TKA. They noted greater improvement in the KS-FS for the UKA group (Casper et al., 2019). However, TKA was associated with better outcomes on the KS-KS sub-score. Patient-reported satisfaction levels were comparable between the two procedures. Pongcharoen and his colleagues evaluated functional outcomes using performance-based tests and found that UKA patients recovered faster than TKA patients at the 6-month mark, though this advantage was short-lived, with no differences observed at 1- and 2-years post-surgery (Pongcharoen et al., 2023). Witjes et al. reported similar early clinical outcomes between UKA and TKA groups, with no significant differences in the Knee Injury and Osteoarthritis Outcomes Score (KOOS) or anterior knee pain scores (Witjes et al., 2020). This study was unique in highlighting differences in anterior knee pain between UKA and TKA when the patella was not resurfaced. Interestingly, both groups demonstrated comparable patellofemoral scores. Liddle et al. analyzed outcomes from a national registry-based study comparing UKA and TKA at an early follow-up of 6 months (Liddle et al., 2015). The TKA group had a higher incidence of complications, and all

PRO favored UKA over TKA in a propensity score-matched population. A study by Baker et al. using data from the National Joint Registry (NJR) found similar PRO, such as OKS, and quality-of-life outcomes between UKA and TKA (Baker et al., 2012). However, due to higher revision rates observed, the study recommended a cautious approach to adopting UKA. In contrast, Goodfellow et al. analyzed revision rates in another NJR study and identified significant measurement bias in reporting revisions after knee arthroplasty (Goodfellow, 2006). They noted that the threshold for revising a UKA with lower functional outcomes was much lower than for revising a TKA with similar outcomes, suggesting that long-term UKA revision rates may be artificially inflated. Despite these concerns, UKA has shown improved patient satisfaction and favorable outcomes, making it a promising option for AMOA with excellent functional improvement. The choice between UKA and TKA should depend on the surgeon's and center's experience, patient activity levels, and expectations. Proper patient selection is critical, as it significantly influences outcomes. While combined procedures, such as medial UKA with patellofemoral or lateral UKA, are being explored as alternatives to TKA for broader indications (e.g., advanced patellofemoral or lateral wear), long-term results for these approaches remain unclear (Gibbons et al., 2025; Koh et al., 2024). Studies have shown inferior outcomes with combined procedures for knee OA (Ten Noever de Brauw et al., 2025; Vossen et al., 2025), emphasizing the need to strictly adhere to diagnostic criteria for isolated medial OA when selecting the appropriate procedure. As the number of UKA procedures performed globally continues to rise, further research is needed to compare outcomes and patient satisfaction between UKA and TKA. Large-volume or multi-center randomized controlled trials will be essential to determine the superiority of either procedure in managing AMOA.

4.3 Clinical Implications

The findings of this randomized controlled trial have meaningful clinical implications in the surgical management of anteromedial osteoarthritis (AMOA). While Total Knee Arthroplasty (TKA) has historically been the gold standard for advanced knee OA, the study highlights the potential advantages of Unicompartmental Knee Arthroplasty (UKA) for appropriately selected patients. UKA not only achieved comparable functional outcomes to TKA but also showed significantly higher patient satisfaction, improved joint "forgottenness" as measured by the Forgotten Joint Score (FJS), better postoperative range of motion (ROM), and fewer complications.

Furthermore, UKA was associated with a less invasive procedure, resulting in shorter operative time, reduced blood loss, and decreased hospital stay. These benefits suggest that UKA can offer a superior patient-centered surgical experience and may become the first-line treatment in patients with isolated medial compartment disease.

4.4 Strengths of the Study

A major strength of this study lies in its randomized controlled trial design, which enhances the validity and reliability of the results by minimizing selection bias. The balanced baseline characteristics between the UKA and TKA groups further support the internal validity of the findings. Additionally, the study utilized a comprehensive array of validated patient-reported outcome measures (OKS, KS-KS, KS-FS, FJS), along with objective clinical outcomes such as ROM and surgical parameters, offering a holistic assessment of patient function and satisfaction. All surgeries were performed by a single high-volume orthopedic surgeon, reducing variability and performance bias. The consistent follow-up period of at least two years allowed sufficient time for post-operative stabilization and patient-reported evaluation, making the outcomes more clinically meaningful.

5. Limitations

Despite its strengths, the study has several limitations. The relatively small sample size (n=53 knees) may reduce the statistical power and limit the ability to detect smaller intergroup differences. Additionally, as a single-center study, the generalizability of the findings to broader populations or other clinical settings may be limited. Some eligible participants were excluded due to the unavailability of UKA implants, introducing a potential selection bias. Another limitation is the lack of blinding for patients and outcome assessors, which could influence subjective outcomes like satisfaction and FJS. Moreover, radiographic outcomes such as implant alignment and long-term survivorship were not included, which are important in determining the overall success of the arthroplasty. Finally, the study did not address cost-effectiveness, an essential component when evaluating two surgical options within public health systems.

6. Conclusion

This randomized controlled study demonstrates that unicompartmental knee arthroplasty (UKA) and total knee arthroplasty (TKA) yield comparable functional outcomes in patients with anteromedial osteoarthritis (AMOA), as assessed by patient-reported outcomes (PROs). However, UKA confers several distinct advantages, including lower levels of artificial joint awareness, greater improvements in range of motion (ROM), significantly higher patient satisfaction, shorter operative times, reduced intraoperative blood loss, shorter hospital stays, smaller incision lengths, and a lower overall complication rate. These findings align with previous literature, which highlights UKA as a promising option for patients with isolated medial compartment disease, particularly when proper patient selection criteria are applied. While TKA remains a reliable treatment for advanced knee OA. Based on the study

findings, it is recommended that surgeons consider Unicompartmental Knee Arthroplasty (UKA) as the first-line surgical treatment for patients with isolated anteromedial osteoarthritis, especially when patient selection criteria are strictly applied. Training programs should emphasize UKA techniques, as surgical expertise greatly impacts outcomes. Larger, multicenter randomized trials are needed to validate these results and explore long-term implant survivorship and revision rates.

6.1 Ethical Considerations

This study was conducted in full accordance with the ethical principles outlined in the Declaration of Helsinki. Ethical approval was obtained from the Institutional Review Board (IRB) of the Faculty of Medicine, Mansoura University (Reference Number: MD.20.08.359). All participants provided written informed consent after receiving detailed explanations regarding the study objectives, procedures, risks, and benefits. Participation was voluntary, and patients had the right to withdraw at any point without consequences.

6.2 Acknowledgment

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List of Abbreviations

ABBREVIATION	FULL TERM
OA	Osteoarthritis
AMOA	Anteromedial Osteoarthritis
UKA	Unicompartmental Knee Arthroplasty
TKA	Total Knee Arthroplasty
OXS	Oxford Knee Score
KS-KS	Knee Society Knee Score
KS-FS	Knee Society Functional Score
FJS	Forgotten Joint Score
ROM	Range of Motion
BMI	Body Mass Index
ACL	Anterior Cruciate Ligament
MCL	Medial Collateral Ligament
IRB	Institutional Review Board
IQR	Interquartile Range
SD	Standard Deviation
CI	Confidence Interval
DM	Diabetes Mellitus
HTN	Hypertension

Reference

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