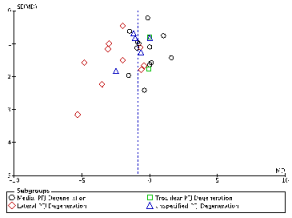
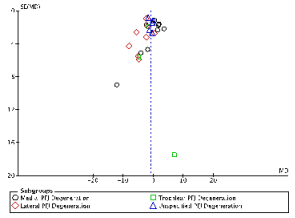
# Supplementary Material

## The Influence of Patellofemoral Joint Degeneration on Clinical Outcomes after Medial Unicompartmental Knee Arthroplasty

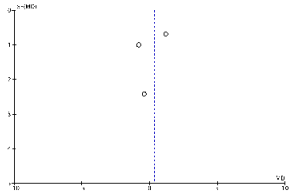
## Table of Contents



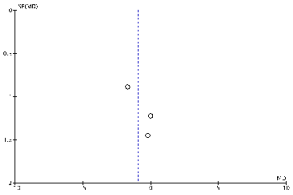
**eFig.1a** Funnel plot of OKS, being stratified by PFJ degenerative facets



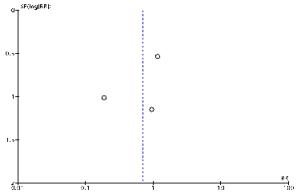
**eFig.1b** Funnel plot of KSS, being stratified by PFJ degenerative facets



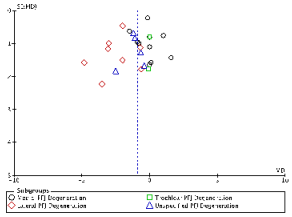
**eFig.1c** Funnel plot of OKS, being stratified by severe PFJ degeneration



**eFig.1f** Funnel plot of KKS, being stratified by severe PFJ degeneration

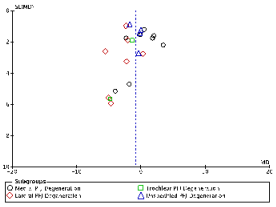


**eFig.1g** Funnel plot of revision rates, being stratified by severe PFJ degeneration

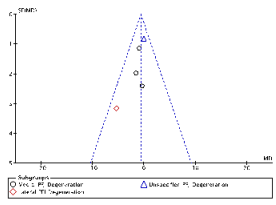


**eFig.1h** Funnel plot of OKS in medial mobile-bearing UKA

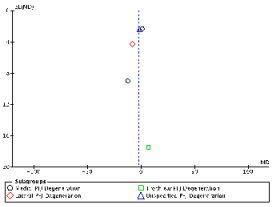
## eFigure 1. Funnel plots of meta-analyses (a-h).



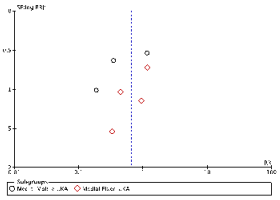
**eFig.1i** Funnel plot of KKS in medial mobile-bearing UKA



**eFig.1j** Funnel plot of OKS in medial fixed-bearing UKA

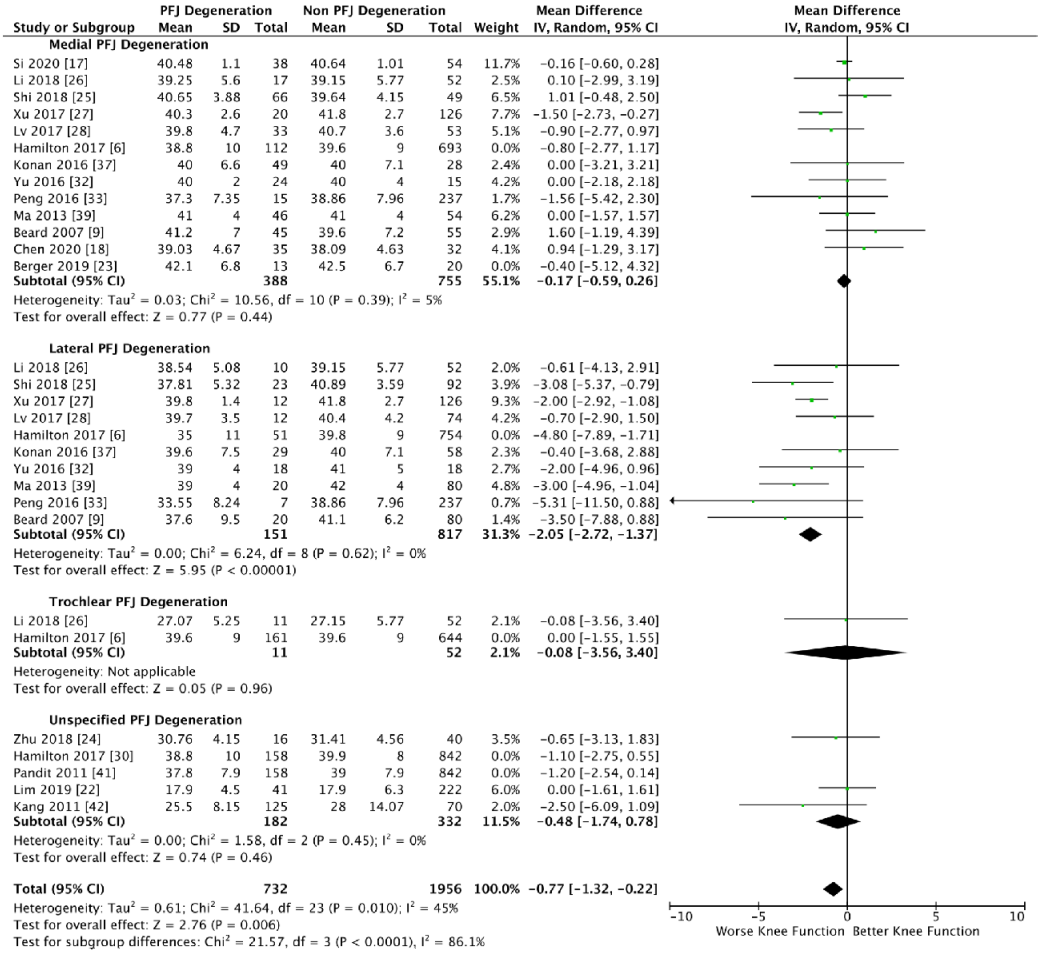


**eFig.1k** Funnel plot of KSS in medial fixed-bearing UKA

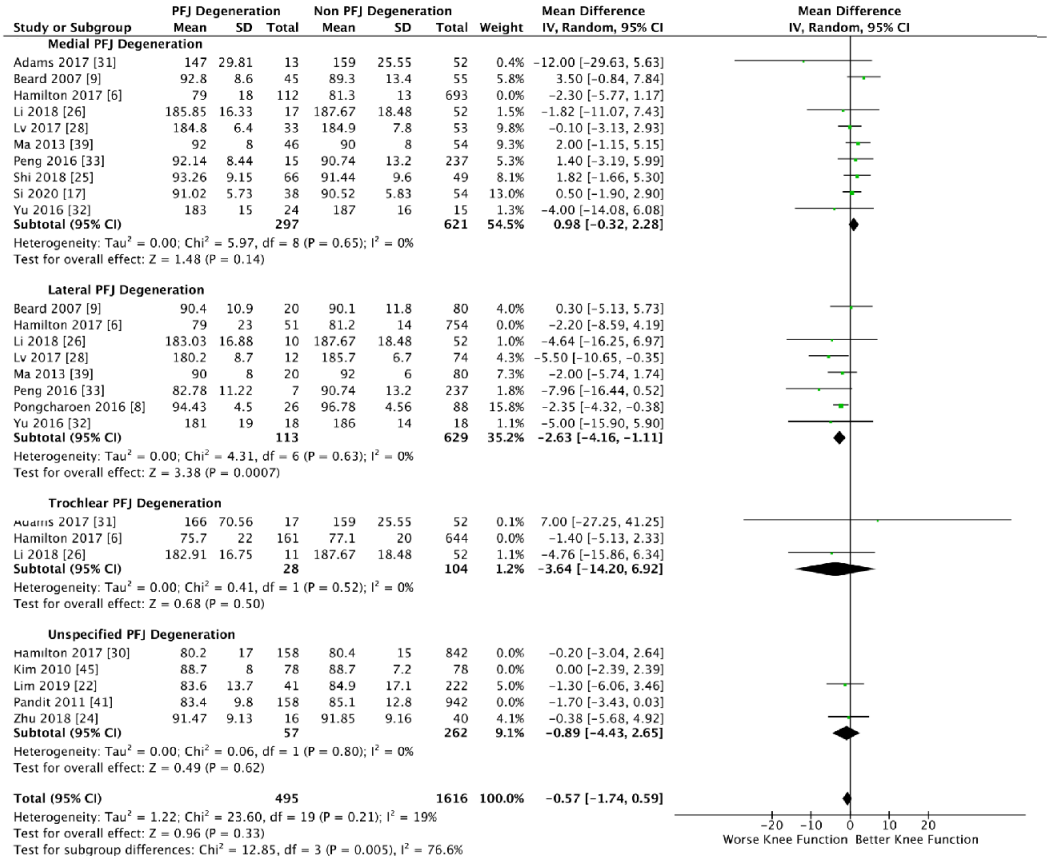


**eFig.1l** Funnel plot of revision rates, being stratified by bearing type for UKA

eFigure 1. Funnel plots of meta-analyses (i-l).

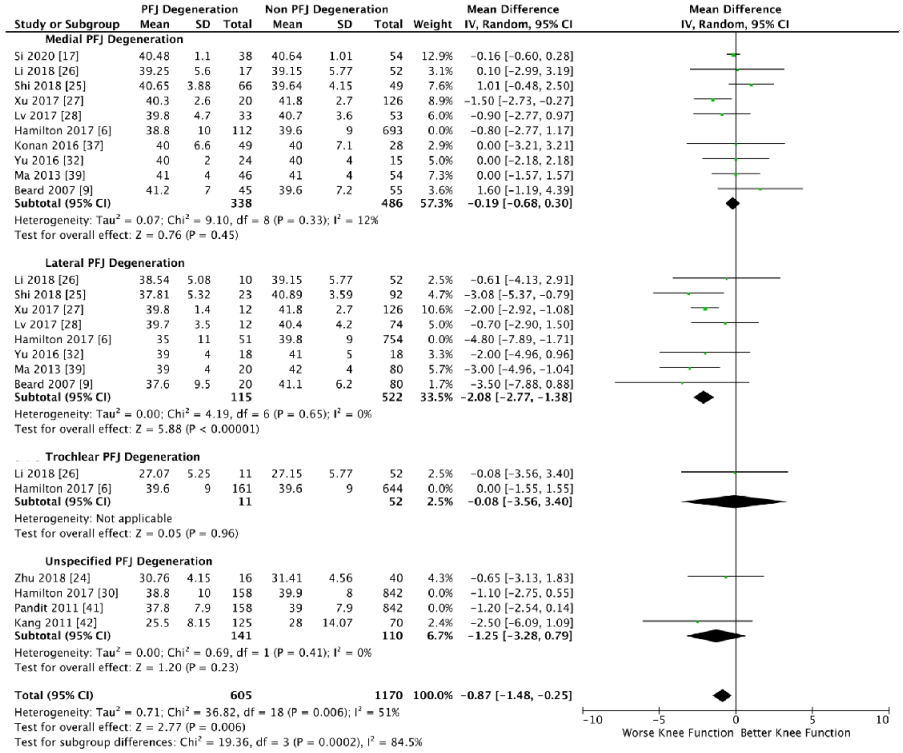



**eFigure 2. Sensitivity analyses for excluding studies with severe PFJ degeneration; the effects of PFJ degenerative facets on OKS. PFJ: Patellofemoral joint; OKS: Oxford knee score.**

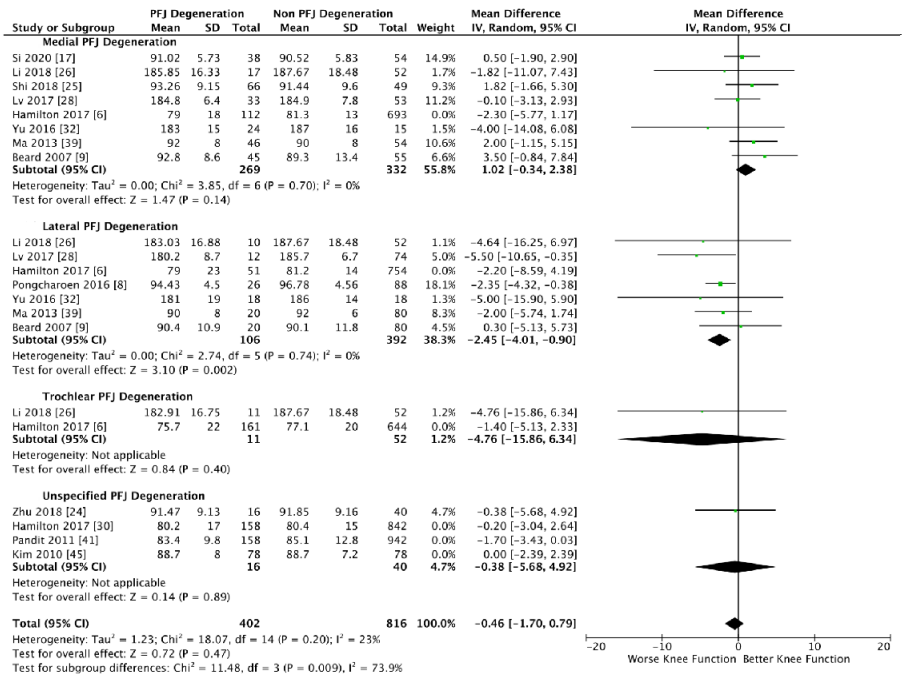



**eFigure 3. Sensitivity analyses for excluding studies with severe PFJ degeneration; the effects of PFJ degenerative facets on KSS. KSS: Knee society score; PFJ: Patellofemoral joint.**

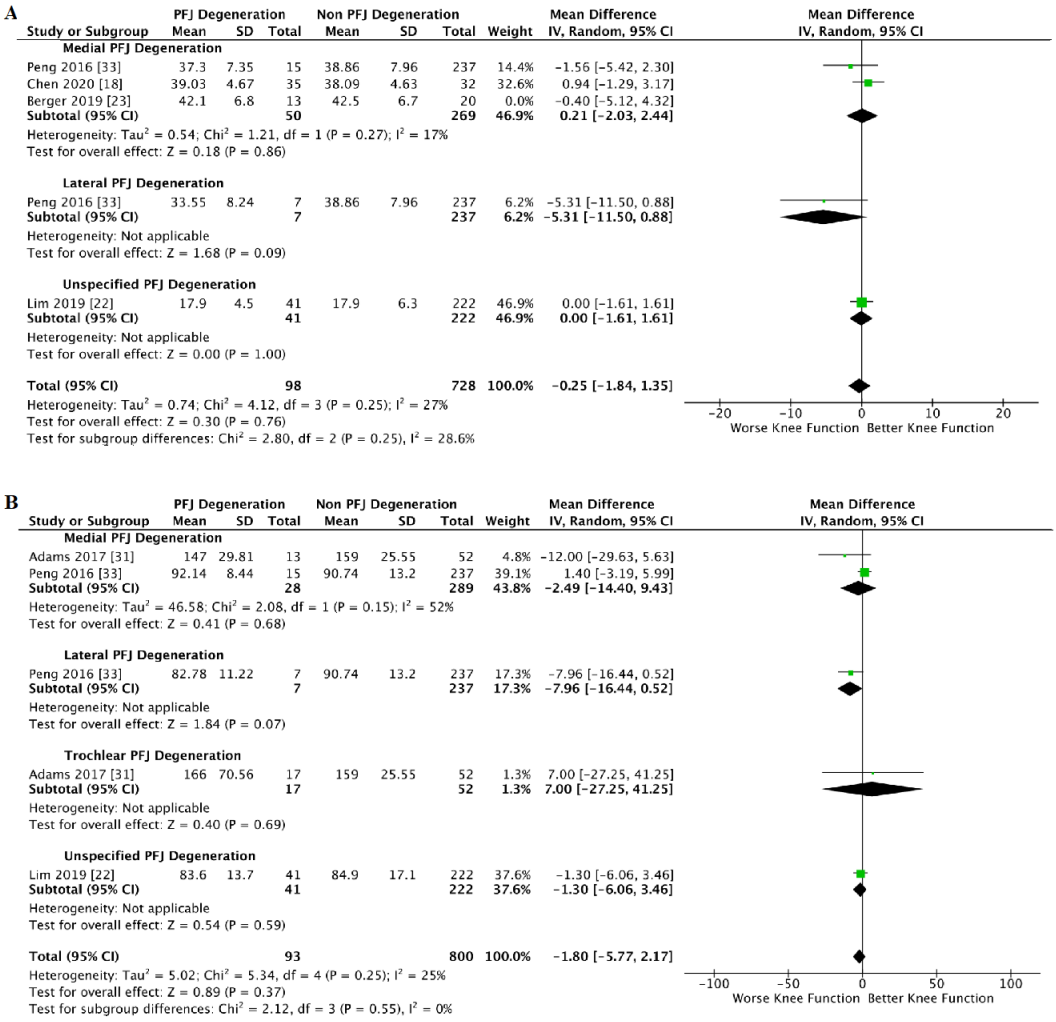
**A**


PFJ Degeneration
Non PFJ Degeneration
Mean Difference
Mean Difference
Study or Subgroup Mean SD Total Mean SD Total Weight IV, Random, 95% CI
IV, Random, 95% CI
Medial PFJ Degeneration
Si 2020 [17] 40.48 1.1 38 40.64 1.01 54 12.9% −0.16 [−0.60, 0.28]
Li 2018 [26] 39.25 5.6 17 39.15 5.77 52 3.1% 0.10 [−2.99, 3.19]
Shi 2018 [25] 40.65 3.88 66 39.64 4.15 49 7.6% 1.01 [−0.48, 2.50]
Xu 2017 [27] 40.3 2.6 20 41.8 2.7 126 8.9% −1.50 [−2.73, −0.27]
Lv 2017 [28] 39.8 4.7 33 40.7 3.6 53 6.0% −0.90 [−2.77, 0.97]
Hamilton 2017 [6] 38.8 10 112 39.6 9 693 0.0% −0.80 [−2.77, 1.17]
Konan 2016 [37] 40 6.6 49 40 7.1 28 2.9% 0.00 [−3.21, 3.21]
Yu 2016 [32] 40 2 24 40 4 15 5.0% 0.00 [−2.18, 2.18]
Ma 2013 [39] 41 4 46 41 4 54 7.3% 0.00 [−1.57, 1.57]
Beard 2007 [9] 41.2 7 45 39.6 7.2 55 3.6% 1.60 [−1.19, 4.39]
Subtotal (95% CI) 338 486 57.3% −0.19 [−0.68, 0.30]
Heterogeneity: Tau² = 0.07; Chi² = 9.10, df = 8 (P = 0.33); I² = 12%
Test for overall effect: Z = 0.76 (P = 0.45)
Lateral PFJ Degeneration
Li 2018 [26] 38.54 5.08 10 39.15 5.77 52 2.5% −0.61 [−4.13, 2.91]
Shi 2018 [25] 37.81 5.32 23 40.89 3.59 92 4.7% −3.08 [−5.37, −0.79]
Xu 2017 [27] 39.8 1.4 12 41.8 2.7 126 10.6% −2.00 [−2.92, −1.08]
Lv 2017 [28] 39.7 3.5 12 40.4 4.2 74 5.0% −0.70 [−2.90, 1.50]
Hamilton 2017 [6] 35 11 51 39.8 9 754 0.0% −4.80 [−7.89, −1.71]
Yu 2016 [32] 39 4 18 41 5 18 3.3% −2.00 [−4.96, 0.96]
Ma 2013 [39] 39 4 20 42 4 80 5.7% −3.00 [−4.96, −1.04]
Beard 2007 [9] 37.6 9.5 20 41.1 6.2 80 1.7% −3.50 [−7.88, 0.88]
Subtotal (95% CI) 115 522 33.5% −2.08 [−2.77, −1.38]
Heterogeneity: Tau² = 0.00; Chi² = 4.19, df = 6 (P = 0.65); I² = 0%
Test for overall effect: Z = 5.88 (P < 0.00001)
Trochlear PFJ Degeneration
Li 2018 [26] 27.07 5.25 11 27.15 5.77 52 2.5% −0.08 [−3.56, 3.40]
Hamilton 2017 [6] 39.6 9 161 39.6 9 644 0.0% 0.00 [−1.55, 1.55]
Subtotal (95% CI) 11 52 2.5% −0.08 [−3.56, 3.40]
Heterogeneity: Not applicable
Test for overall effect: Z = 0.05 (P = 0.96)
Unspecified PFJ Degeneration
Zhu 2018 [24] 30.76 4.15 16 31.41 4.56 40 4.3% −0.65 [−3.13, 1.83]
Hamilton 2017 [30] 38.8 10 158 39.9 8 842 0.0% −1.10 [−2.75, 0.55]
Pandit 2011 [41] 37.8 7.9 158 39 7.9 842 0.0% −1.20 [−2.54, 0.14]
Kang 2011 [42] 25.5 8.15 125 28 14.07 70 2.4% −2.50 [−6.09, 1.09]
Subtotal (95% CI) 141 110 6.7% −1.25 [−3.28, 0.79]
Heterogeneity: Tau² = 0.00; Chi² = 0.69, df = 1 (P = 0.41); I² = 0%
Test for overall effect: Z = 1.20 (P = 0.23)
Total (95% CI) 605 1170 100.0% −0.87 [−1.48, −0.25]
Heterogeneity: Tau² = 0.71; Chi² = 36.82, df = 18 (P = 0.006); I² = 51%
Test for overall effect: Z = 2.77 (P = 0.006)
Test for subgroup differences: Chi² = 19.36, df = 3 (P = 0.0002), I² = 84.5%
−10 −5 0 5 10
Worse Knee Function Better Knee Function

**B**


PFJ Degeneration
Non PFJ Degeneration
Mean Difference
Mean Difference
Study or Subgroup Mean SD Total Mean SD Total Weight IV, Random, 95% CI
IV, Random, 95% CI
Medial PFJ Degeneration
Si 2020 [17] 91.02 5.73 38 90.52 5.83 54 14.9% 0.50 [−1.90, 2.90]
Li 2018 [26] 185.85 16.33 17 187.67 18.48 52 1.7% −1.82 [−11.07, 7.43]
Shi 2018 [25] 93.26 9.15 66 91.44 9.6 49 9.3% 1.82 [−1.66, 5.30]
Lv 2017 [28] 184.8 6.4 33 184.9 7.8 53 11.2% −0.10 [−3.13, 2.93]
Hamilton 2017 [6] 79 18 112 81.3 13 693 0.0% −2.30 [−5.77, 1.17]
Yu 2016 [32] 183 15 24 187 16 15 1.5% −4.00 [−14.08, 6.08]
Ma 2013 [39] 92 8 46 90 8 54 10.6% 2.00 [−1.15, 5.15]
Beard 2007 [9] 92.8 8.6 45 89.3 13.4 55 6.6% 3.50 [−0.84, 7.84]
Subtotal (95% CI) 269 332 55.8% 1.02 [−0.34, 2.38]
Heterogeneity: Tau² = 0.00; Chi² = 3.85, df = 6 (P = 0.70); I² = 0%
Test for overall effect: Z = 1.47 (P = 0.14)
Lateral PFJ Degeneration
Li 2018 [26] 183.03 16.88 10 187.67 18.48 52 1.1% −4.64 [−16.25, 6.97]
Lv 2017 [28] 180.2 8.7 12 185.7 6.7 74 5.0% −5.50 [−10.65, −0.35]
Hamilton 2017 [6] 79 23 51 81.2 14 754 0.0% −2.20 [−8.59, 4.19]
Pongcharoen 2016 [8] 94.43 4.5 26 96.78 4.56 88 18.1% −2.35 [−4.32, −0.38]
Yu 2016 [32] 181 19 18 186 14 18 1.3% −5.00 [−15.90, 5.90]
Ma 2013 [39] 90 8 20 92 6 80 8.3% −2.00 [−5.74, 1.74]
Beard 2007 [9] 90.4 10.9 20 90.1 11.8 80 4.5% 0.30 [−5.13, 5.73]
Subtotal (95% CI) 106 392 38.3% −2.45 [−4.01, −0.90]
Heterogeneity: Tau² = 0.00; Chi² = 2.74, df = 5 (P = 0.74); I² = 0%
Test for overall effect: Z = 3.10 (P = 0.002)
Trochlear PFJ Degeneration
Li 2018 [26] 182.91 16.75 11 187.67 18.48 52 1.2% −4.76 [−15.86, 6.34]
Hamilton 2017 [6] 75.7 22 161 77.1 20 644 0.0% −1.40 [−5.13, 2.33]
Subtotal (95% CI) 11 52 1.2% −4.76 [−15.86, 6.34]
Heterogeneity: Not applicable
Test for overall effect: Z = 0.84 (P = 0.40)
Unspecified PFJ Degeneration
Zhu 2018 [24] 91.47 9.13 16 91.85 9.16 40 4.7% −0.38 [−5.68, 4.92]
Hamilton 2017 [30] 80.2 17 158 80.4 15 842 0.0% −0.20 [−3.04, 2.64]
Pandit 2011 [41] 83.4 9.8 158 85.1 12.8 942 0.0% −1.70 [−3.43, 0.03]
Kim 2010 [45] 88.7 8 78 88.7 7.2 78 0.0% 0.00 [−2.39, 2.39]
Subtotal (95% CI) 16 40 4.7% −0.38 [−5.68, 4.92]
Heterogeneity: Not applicable
Test for overall effect: Z = 0.14 (P = 0.89)
Total (95% CI) 402 816 100.0% −0.46 [−1.70, 0.79]
Heterogeneity: Tau² = 1.23; Chi² = 18.07, df = 14 (P = 0.20); I² = 23%
Test for overall effect: Z = 0.72 (P = 0.47)
Test for subgroup differences: Chi² = 11.48, df = 3 (P = 0.009), I² = 73.9%
−20 −10 0 10 20
Worse Knee Function Better Knee Function

**eFigure 4. Sensitivity analyses for excluding studies with severe PFJ degeneration; the effects of PFJ degeneration on OKS (A) and KSS (B) in medial mobile-bearing UKA, being stratified by PFJ degenerative facets. PFJ: Patellofemoral joint; OKS: Oxford knee score; KSS: Knee society score; UKA: Unicompartmental knee arthroplasty.**




**eFigure 5. Sensitivity analyses for excluding studies with severe PFJ degeneration; the effects of PFJ degeneration on OKS (A) and KSS (B) in medial fixed-bearing UKA, being stratified by PFJ degenerative facets. PFJ: Patellofemoral joint; OKS: Oxford knee score; KSS: Knee society score; UKA: Unicompartmental knee arthroplasty.**

**eTable 1. PRISMA 2009 Checklist.**

| Section/topic | # | Checklist item | Reported on page # |
|---|---|---|---|
| **TITLE** | | | |
| Title | 1 | Identify the report as a systematic review, meta-analysis, or both. | 1 |
| **ABSTRACT** | | | |
| Structured summary | 2 | Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number. | 1 |
| **INTRODUCTION** | | | |
| Rationale | 3 | Describe the rationale for the review in the context of what is already known. | 2 |
| Objectives | 4 | Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS). | 2 |
| **METHODS** | | | |
| Protocol and registration | 5 | Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number. | None |
| Eligibility criteria | 6 | Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale. | 3 |
| Information sources | 7 | Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched. | 3 |

| | | | |
|---|---|---|---|
| Search | 8 | Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated. | 3 and eTable2 |
| Study selection | 9 | State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis). | 3 |
| Data collection process | 10 | Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators. | 3 |
| Data items | 11 | List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made. | 3 |
| Risk of bias in individual studies | 12 | Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis. | 3-4 |
| Summary measures | 13 | State the principal summary measures (e.g., risk ratio, difference in means). | 4 |
| Synthesis of results | 14 | Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., $I^2$) for each meta-analysis. | 4-5 |
| Section/topic | # | Checklist item | Reported on page # |
| Risk of bias across studies | 15 | Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies). | 4 |
| Additional analyses | 16 | Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified. | 4-5 |
| **RESULTS** | | | |
| Study selection | 17 | Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram. | 5 and Figure 1 |

| | | | |
|---|---|---|---|
| Study characteristics | 18 | For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations. | 6-7 and Table 1 |
| Risk of bias within studies | 19 | Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12). | 5-6 and Figure 2 |
| Results of individual studies | 20 | For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot. | Table 1 |
| Synthesis of results | 21 | Present results of each meta-analysis done, including confidence intervals and measures of consistency. | 7-13 and Figure 3-4 and 6-9 |
| Risk of bias across studies | 22 | Present results of any assessment of risk of bias across studies (see Item 15). | 13, eFigure 1 and eTable3 |
| Additional analysis | 23 | Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]). | 9 and Figure 5 |
| **DISCUSSION** | | | |
| Summary of evidence | 24 | Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers). | 13 |
| Limitations | 25 | Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias). | 16 |
| Conclusions | 26 | Provide a general interpretation of the results in the context of other evidence, and implications for future research. | 16 |
| **FUNDING** | | | |
| Funding | 27 | Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review. | 17-18 |

**eTable 2. in the Supplement, Search Strategy.**

**Searching on PubMed: 292 records**

#1. "Patellofemoral" [Title/Abstract] OR "Femoropatellar" [Title/Abstract]
#2. "Knee" [Title/Abstract] OR "Genicular" [Title/Abstract]
#3. "Unicondylar" [Title/Abstract] OR "Unicompartmental" [Title/Abstract] OR "Partial" [Title/Abstract] OR "UKA" [Title/Abstract] OR "UKR" [Title/Abstract]
#4. "Replacement" [Title/Abstract] OR "Arthroplasty" [Title/Abstract]
#5. #1 AND #2 AND #3 AND #4

**Searching on Web of Science: 359 records**

#1. "Patellofemoral" [Topic] OR "Femoropatellar" [Topic]
#2. "Knee" [Topic] OR "Genicular" [Topic]
#3. "Unicondylar" [Topic] OR "Unicompartmental" [Topic] OR "Partial" [Topic] OR "UKA" [Topic] OR "UKR" [Topic]
#4. "Replacement" [Topic] OR "Arthroplasty" [Topic]
#5. #1 AND #2 AND #3 AND #4

**Searching on the Cochrane Library: 9 records**

#1. "Patellofemoral" [Title Abstract Keyword] OR "Femoropatellar" [Title Abstract Keyword]
#2. "Knee" [Title Abstract Keyword] OR "Genicular" [Title Abstract Keyword]
#3. "Unicondylar" [Title Abstract Keyword] OR "Unicompartmental" [Title Abstract Keyword] OR "Partial" [Title Abstract Keyword] OR "UKA" [Title Abstract Keyword] OR "UKR" [Title Abstract Keyword]
#4. "Replacement" [Title Abstract Keyword] OR "Arthroplasty" [Title Abstract Keyword]
#5. #1 AND #2 AND #3 AND #4

**Searching on OVID: 59 records**

#1. "Patellofemoral" [Abstract] OR "Femoropatellar" [Abstract]
#2. "Knee" [Abstract] OR "Genicular" [Abstract]
#3. "Unicondylar" [Abstract] OR "Unicompartmental" [Abstract] OR "Partial" [Abstract] OR "UKA" [Abstract] OR "UKR" [Abstract]
#4. "Replacement" [Abstract] OR "Arthroplasty" [Abstract]
#5. #1 AND #2 AND #3 AND #4

**Searching on MEDLINE: 426 records**

#1. "Patellofemoral" [Abstract] OR "Femoropatellar" [Abstract]
#2. "Knee" [Abstract] OR "Genicular" [Abstract]
#3. "Unicondylar" [Abstract] OR "Unicompartmental" [Abstract] OR "Partial" [Abstract] OR "UKA" [Abstract] OR "UKR" [Abstract]
#4. "Replacement" [Abstract] OR "Arthroplasty" [Abstract]
#5. #1 AND #2 AND #3 AND #4

**Searching on EMBASE: 354 records**

#1. "Patellofemoral" [Abstract] OR "Femoropatellar" [Abstract]

#2. "Knee" [Abstract] OR "Genicular" [Abstract]

#3. "Unicondylar" [Abstract] OR "Unicompartmental" [Abstract] OR "Partial" [Abstract] OR "UKA" [Abstract] OR "UKR" [Abstract]

#4. "Replacement" [Abstract] OR "Arthroplasty" [Abstract]

#5. #1 AND #2 AND #3 AND #4

**Searching on China Science and Technology Journal Database: 25 records**

#1. "Patellofemoral" [Title/Abstract] OR "Femoropatellar" [Title/Abstract]

#2. "Knee" [Title/Abstract] OR "Genicular" [Title/Abstract]

#3. "Unicondylar" [Title/Abstract] OR "Unicompartmental" [Title/Abstract] OR "Partial" [Title/Abstract] OR "UKA" [Title/Abstract] OR "UKR" [Title/Abstract]

#4. "Replacement" [Title/Abstract] OR "Arthroplasty" [Title/Abstract]

#5. #1 AND #2 AND #3 AND #4

**Searching on China National Knowledge Infrastructure: 75 records**

#1. "Patellofemoral" [Abstract] OR "Femoropatellar" [Abstract]

#2. "Knee" [Abstract] OR "Genicular" [Abstract]

#3. "Unicondylar" [Abstract] OR "Unicompartmental" [Abstract] OR "Partial" [Abstract] OR "UKA" [Abstract] OR "UKR" [Abstract]

#4. "Replacement" [Abstract] OR "Arthroplasty" [Abstract]

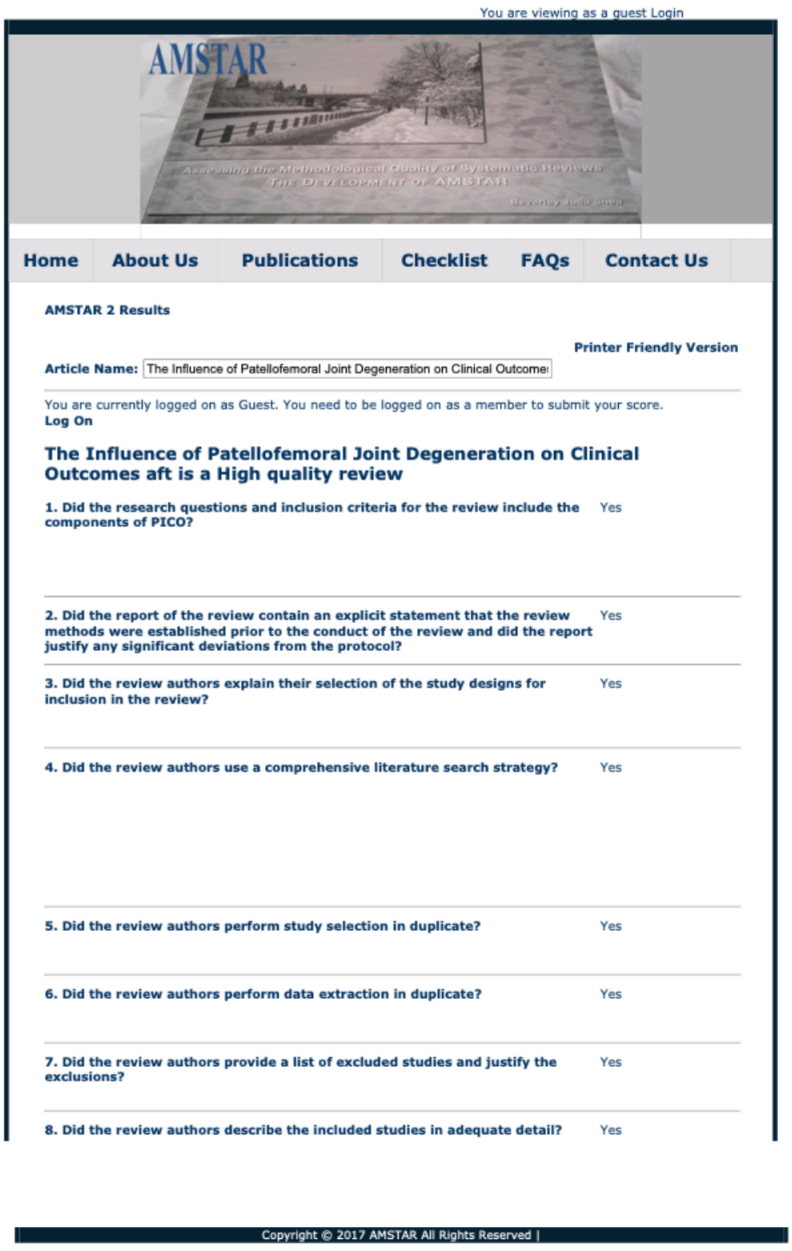
#5. #1 AND #2 AND #3 AND #4

**eTable 3. Egger's test for the risk of bias.**

| Stratified analysis factors | No. of Studies | Egger's test (P value) |
|---|---|---|
| **PFJ degenerative facets** | | |
| ***OKS*** | | |
| Medial PFJ | 13 | 0.830 |
| Lateral PFJ | 10 | 0.374 |
| Trochlear PFJ | 2 | - |
| ***KSS*** | | |
| Medial PFJ | 10 | 0.232 |
| Lateral PFJ | 8 | 0.290 |
| Trochlear PFJ | 3 | 0.663 |
| **Severe PFJ degeneration** | | |
| ***OKS*** | 3 | 0.609 |
| ***KSS*** | 3 | 0.275 |
| ***Revision rates*** | 3 | 0.498 |
| **Bearing type for UKA** | | |
| ***OKS*** | | |
| Medial mobile-bearing UKA | 14 | 0.458 |
| Medial fixed-bearing UKA | 4 | 0.891 |
| ***KSS*** | | |
| Medial mobile-bearing UKA | 13 | 0.780 |
| Medial fixed-bearing UKA | 3 | 0.696 |
| ***Revision rates*** | | |
| Medial mobile-bearing UKA | 3 | 0.187 |
| Medial fixed-bearing UKA | 4 | 0.212 |

**Abbreviation:** OKS, Oxford knee score; KSS, Knee Society Score; PFJ, Patellofemoral joint; OA, Osteoarthritis; UKA, Unicompartmental knee arthroplasty.

**eTable4. in the Supplement, AMSTAR.**



| | |
|---|---|
| **9. Did the review authors use a satisfactory technique for assessing the risk of bias (RoB) in individual studies that were included in the review?** | |
| **RCT** | 0 |
| **NRSI** | Yes |
| **10. Did the review authors report on the sources of funding for the studies included in the review?** | Yes |
| **11. If meta-analysis was performed did the review authors use appropriate methods for statistical combination of results?** | |
| **RCT** | 0 |
| **NRSI** | Yes |
| **12. If meta-analysis was performed, did the review authors assess the potential impact of RoB in individual studies on the results of the meta-analysis or other evidence synthesis?** | Yes |
| **13. Did the review authors account for RoB in individual studies when interpreting/ discussing the results of the review?** | Yes |
| **14. Did the review authors provide a satisfactory explanation for, and discussion of, any heterogeneity observed in the results of the review?** | Yes |
| **15. If they performed quantitative synthesis did the review authors carry out an adequate investigation of publication bias (small study bias) and discuss its likely impact on the results of the review?** | Yes |
| **16. Did the review authors report any potential sources of conflict of interest, including any funding they received for conducting the review?** | Yes |

To cite this tool: Shea BJ, Reeves BC, Wells G, Thuku M, Hamel C, Moran J, Moher D, Tugwell P, Welch V, Kristjansson E, Henry DA. AMSTAR 2: a critical appraisal tool for systematic reviews that include randomised or non-randomised studies of healthcare interventions, or both. BMJ. 2017 Sep 21;358:j4008.

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**eTable 5. Review evidence certainty assessment (GRADE).**

| Certainty assessment | | | | | | | Number of patients | | Effect estimate (95% CI) | Certainty |
|---|---|---|---|---|---|---|---|---|---|---|
| **Number of studies** | **Study design** | **Risk of bias** | **Inconsistency** | **Indirectness** | **Imprecision** | **Other** | **PFJ Degeneration** | **Non PFJ Degeneration** | | |
| ***PFJ degenerative facets on OKS*** | | | | | | | | | | |
| **Medial** | | | | | | | | | | |
| 13 | Observational | Not serious | Not serious | Not serious | Not serious | None | 513 | 1468 | MD -0.24 (-0.59 to 0.11) | ⨁⨁◻◻ LOW |
| **Lateral** | | | | | | | | | | |
| 10 | Observational | Not serious | Not serious | Not serious | Not serious | None | 202 | 1571 | MD -2.18 (-2.86 to -1.50) | ⨁⨁◻◻ LOW |
| **Trochlear** | | | | | | | | | | |
| 2 | Observational | Serious[c] | Not serious | Not serious | Not serious | None | 172 | 696 | MD -0.01 (-1.43 to 1.41) | ⨁◻◻◻ VERY LOW |
| **Unspecified** | | | | | | | | | | |
| 5 | Observational | Not serious | Not serious | Not serious | Not serious | None | 498 | 2016 | MD -0.88 (-1.69 to -0.08) | ⨁⨁◻◻ LOW |
| ***PFJ degenerative facets on KSS*** | | | | | | | | | | |
| **Medial** | | | | | | | | | | |
| 10 | Observational | Not | Not serious | Not serious | Not serious | None | 409 | 1314 | MD 0.58 | ⨁⨁◻◻ |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | serious | | | | | | | (-0.64 to 1.80) | LOW |
| **Lateral** | | | | | | | | | | |
| 8 | Observational | Not serious | Not serious | Not serious | Not serious | None | 164 | 1383 | MD -2.61 (-4.09 to -1.12) | ⨁⨁◻◻ LOW |
| **Trochlear** | | | | | | | | | | |
| 3 | Observational | Not serious | Not serious | Not serious | Not serious | None | 189 | 748 | MD -1.65 (-5.17 to 1.87) | ⨁⨁◻◻ LOW |
| **Unspecified** | | | | | | | | | | |
| 5 | Observational | Not serious | Not serious | Not serious | Not serious | None | 451 | 2124 | MD -0.93 (-2.11 to 0.26) | ⨁⨁◻◻ LOW |
| ***Severe PFJ degeneration*** | | | | | | | | | | |
| **OKS** | | | | | | | | | | |
| 3 | Observational | Not serious | Not serious | Not serious | Not serious | None | 283 | 1555 | MD 0.34 (-1.12 to 1.80) | ⨁⨁◻◻ LOW |
| **KSS** | | | | | | | | | | |
| 3 | Observational | Not serious | Not serious | Not serious | Not serious | None | 394 | 1862 | MD -0.93 (-2.19 to 0.32) | ⨁⨁◻◻ LOW |
| **Revision rates** | | | | | | | | | | |
| 3 | Observational | Not serious | Not serious | Not serious | Not serious | None | 338 | 1170 | RR 0.71 (0.23 to 2.23) | ⨁⨁◻◻ LOW |
| ***PFJ degenerative facets in medial mobile-bearing UKA*** | | | | | | | | | | |
| ***OKS*** | | | | | | | | | | |
| **Medial** | | | | | | | | | | |
| 10 | Observational | Not serious | Not serious | Not serious | Not serious | None | 450 | 1179 | MD -0.22 (-0.63 to 0.20) | ⨁⨁◻◻ LOW |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Lateral** | | | | | | | | | | |
| 8 | Observational | Not serious | Not serious | Not serious | Not serious | None | 166 | 1276 | MD -2.21 (-2.89 to -1.53) | ⨁⨁◻◻ LOW |
| **Trochlear** | | | | | | | | | | |
| 2 | Observational | Serious[c] | Not serious | Not serious | Not serious | None | 172 | 696 | MD -0.01 (-1.43 to 1.41) | ⨁◻◻◻ VERY LOW |
| **Unspecified** | | | | | | | | | | |
| 5 | Observational | Not serious | Not serious | Not serious | Not serious | None | 486 | 1852 | MD -0.88 (-1.69 to -0.08) | ⨁⨁◻◻ LOW |
| ***KSS*** | | | | | | | | | | |
| **Medial** | | | | | | | | | | |
| 8 | Observational | Not serious | Not serious | Not serious | Not serious | None | 381 | 1025 | MD 0.58 (-0.68 to 1.85) | |
| **Lateral** | | | | | | | | | | |
| 7 | Observational | Not serious | Not serious | Not serious | Not serious | None | 157 | 1146 | MD -2.44 (-3.95 to -0.93) | |
| **Trochlear** | | | | | | | | | | |
| 2 | Observational | Serious[c] | Not serious | Not serious | Not serious | None | 172 | 696 | MD -1.74 (-5.28 to 1.80) | ⨁◻◻◻ VERY LOW |
| **Unspecified** | | | | | | | | | | |
| 4 | Observational | Not serious | Not serious | Not serious | Not serious | None | 410 | 1902 | MD -0.90 (-2.13 to 0.32) | |
| ***PFJ degenerative facets in medial fixed-bearing UKA*** | | | | | | | | | | |
| ***OKS*** | | | | | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Medial** | | | | | | | | | | |
| 3 | Observational | Not serious | Not serious | Not serious | Not serious | None | 63 | 289 | MD -1.00 (-2.78 to 0.79) | ⨁⨁◻◻ LOW |
| **Lateral** | | | | | | | | | | |
| 1 | Observational | Serious[c] | Not serious | Not serious | Serious[b] | None | 7 | 237 | MD -5.31 (-11.50 to 0.88) | ⨁◻◻◻ VERY LOW |
| **Unspecified** | | | | | | | | | | |
| 1 | Observational | Serious[c] | Not serious | Not serious | Not serious | None | 41 | 222 | MD 0.00 (-1.61 to 1.61) | ⨁◻◻◻ VERY LOW |
| ***KSS*** | | | | | | | | | | |
| **Medial** | | | | | | | | | | |
| 2 | Observational | Serious[c] | Not serious | Not serious | Not serious | None | 381 | 1025 | MD 0.58 (-0.68 to 1.85) | ⨁◻◻◻ VERY LOW |
| **Lateral** | | | | | | | | | | |
| 1 | Observational | Serious[c] | Not serious | Not serious | Not serious | None | 157 | 1146 | MD -2.44 (-3.95 to -0.93) | ⨁◻◻◻ VERY LOW |
| **Trochlear** | | | | | | | | | | |
| 1 | Observational | Serious[c] | Not serious | Not serious | Not serious | None | 172 | 696 | MD -1.74 (-5.28 to 1.80) | ⨁◻◻◻ VERY LOW |
| **Unspecified** | | | | | | | | | | |
| 1 | Observational | Serious[c] | Not serious | Not serious | Not serious | None | 410 | 1902 | MD -0.90 | ⨁◻◻◻ |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | (-2.13 to 0.32) | VERY LOW |
| ***PFJ degeneration on revision rates*** | | | | | | | | | | |
| **Medial mobile-bearing UKA** | | | | | | | | | | |
| 3 | Observational | Not serious | Not serious | Not serious | Not serious | None | 500 | 1338 | RR 0.51 (0.18 to 1.51) | ⨁⨁◻◻ LOW |
| **Medial mobile-bearing UKA** | | | | | | | | | | |
| 4 | Observational | Not serious | Not serious | Not serious | Not serious | None | 177 | 739 | RR 0.79 (0.30 to 2.10) | ⨁⨁◻◻ LOW |

**Abbreviation:** OKS, Oxford knee score; KSS, Knee Society Score; PFJ, Patellofemoral joint; OA, Osteoarthritis; UKA, Unicompartmental knee arthroplasty.

[a]Included cohort studies that that have methodological concerns or been rated as high risk using the Newcastle–Ottawa Scale (NOS).

[b]Few studies contributing to outcome, with wide CI.

[c]Too few studies to assess publication bias.

**eTable 6. in Supplement (The abstracts, baseline tables and result tables of Chinese studies were translated into English)**

**16. Y. Wang, Y. Jiaji, Y. Xichun, Effect of bone marrow edema on medial unicondylar replacement in patellofemoral arthritis patients. Chinese Journal of Joint Surgery (Electronic Edition). 14 (2020) 46-51. [Chinese]**

## Abstract

**Objective** To compare the difference of clinical outcomes after unicompartmental knee arthroplasty (UKA) between medial compartmental osteoarthris patients with and without bone marrow edema (BME) in the patella and to evaluate the effect of patellofemoral osteoarthritis (PFOA) on postoperative function after UKA. **Methods** A total of 141 patients (146 knees) undergone medial UKA were selected in Shanghai Tenth Hospital. Inclusion criteria: intact anterior cruciate ligament; varus deformity within 15° which can be corrected under valgus stress; flexion contracture within 15° and flexion over 90°. Exclusion criteria: previous fracture or operation history of lower limb on the operative side; postoperative complications; inflammatory osteoarthritis; anterior cruciate ligament injury. According to the Kellgren Lawrence (K-L) scale and bone marrow edema (BMEP) pattern grade of patellofemoral joints, patients were divided into three groups: Group A, non-PFOA (K-L = 0); group B, PFOA without BME (K-L≥1, BMEP = 0); group C, PFOA with BME (K-L≥1, BMEP≥1). The visual analog scale (VAS) scores, Hospital for Special Surgery (HSS) scores, and range of motions (ROMs) were used to assess the clinical outcomes at the postoperative follow-up of three months and two years. The data comparison was performed with the analysis of variance, LSD test and chi-square test. **Results** BME was highly correlated to poor outcome in patients with UKA. At follow-up of three months, group A was worse than the others in terms of knee pain VAS scores and active ROMs ($F=30.\ 767, 92.269$, $P<0.05$). At follow-up of two years, the anterior knee pain VAS scores and active ROMs were still worse than that of patients without BME ($F=3.\ 268, 10.220$, $P<0.05$). **Conclusions** Clinical outcomes in patients without BME are no difference whether combining PF OA or not. The condition of BME in the patella should be taken serious consideration due to the adverse effect on the outcome after UKA.

**Baseline Table:**

| Group | No. of patients | No. of knees | Sex (Male/Female) | Age (years) | Follow-up (years) | BMI（kg/m²） |
|---|---|---|---|---|---|---|
| **Non PFJ degeneration** | 80 | 80 | 14/62 | 65.6±9.0 | 2.9±0.9 | 23.4±1.6 |
| **PFJ degeneration without bone marrow edema** | 51 | 51 | 11/39 | 66.8±8.4 | 2.9±0.8 | 23.1±1.7 |
| **PFJ degeneration with bone marrow edema** | 15 | 15 | 6/9 | 67.5±6.5 | 2.9±1.1 | 23.2±1.5 |

**Outcome Table 1: Comparison of preoperative clinical scores (Mean ± SD)**

| Group | No. of patients | VAS score of anterior knee pain | VAS score of posterior knee pain | HSS | Active ROM under load (°) | Passive ROM (°) |
|---|---|---|---|---|---|---|
| **Non PFJ degeneration** | 80 | 5.6±1.2 | 4.8±0.9 | 51.1±7.1 | 97.6±8.1 | 133.5±7.2 |
| **PFJ degeneration without bone marrow edema** | 51 | 5.9±0.8 | 5.1±1.1 | 53.9±9.1 | 100.9±10.0 | 133.3±7.3 |
| **PFJ degeneration with bone marrow edema** | 15 | 6.6±0.9 | 5.3±0.9 | 52.5±7.4 | 88.0±8.2 | 132.3±6.2 |

**Outcome Table 2: Comparison of clinical scores at 2-year follow-up after UKA (Mean ± SD)**

| Group | No. of patients | VAS score of anterior knee pain | VAS score of posterior knee pain | HSS | Active ROM under load (°) | Passive ROM (°) |
|---|---|---|---|---|---|---|
| **Non PFJ degeneration** | 80 | 2.3±0.8 | 2.3±0.9 | 87.8±6.1 | 125.9±7.4 | 131.8±8.8 |
| **PFJ degeneration without bone marrow edema** | 51 | 2.2±0.8 | 2.2±0.7 | 87.0±7.5 | 127.5±8.5 | 134.0±10.5 |
| **PFJ degeneration with bone marrow edema** | 15 | 2.3±0.7 | 2.3±0.8 | 85.8±6.4 | 117.3±5.9 | 130.3±9.2 |

**17. W. Si, C. Bing, Z. Yu, The effect of anterior knee pain and patellofemoral joint degeneration on the efficacy of knee unicondylar replacement. Rheumatism and Arthritis. 9 (2020) 32-33+45. [Chinese]**


## Abstract:

**Objective:** To observe the effect of anterior knee pain and patellofemoral degeneration on the outcome of unicompartmental knee arthroplasty. **Methods:** 92 patients with unicompartmental knee arthroplasty in Zhengzhou orthopedic hospital from February 2010 to February 2019 were selected and divided into anterior knee pain group and non-anterior knee pain group according to the presence or absence of anterior knee pain, Oxford knee score (AKS score), American Knee association score (AKS score), Western Ontario and McMaster University Osteoarthritis Index (WOMAC score) before and after operation were collected. **Results:** there were no significant differences in AKS score, AKS knee score, AKS knee function score and WOMAC score between the two groups ($P > 0.05$); However, there was a significant difference in the scores before and 12 months after operation ($P < 0.01$). There was no significant difference in AKS score, AKS knee score, AKS knee function score and WOMAC score between medial normal group and medial injury group before and 12 months after operation ($P > 0.05$); However, there were statistically significant differences in the scores before and 12 months after operation ($P < 0.01$). There were no significant differences in preoperative scores, postoperative AKS scores and WOMAC scores between the lateral normal group and the lateral injury group ($P > 0.05$); However, the AKS knee score and AKS knee function score in the lateral normal group were higher than those in the lateral injured group 12 months after operation ($P < 0.01$). **Conclusion:** anterior knee pain and medial patellofemoral joint degeneration have no significant effect on the curative effect of unicompartmental knee arthroplasty, but lateral patellofemoral joint degeneration has a certain impact on the curative effect of the operation. Clinicians can reasonably choose the operation mode according to the specific situation of patients.

**Baseline Table:**

| Demographic Parameter | |
|---|---|
| **Number of patients enrolled** | 92 |
| **Female-male ratio** | 50:43 |
| **Age, range (Mean ± SD)** | 64-83(71.12±3.10) |
| **BMI, range (Mean ± SD)** | 22.3-28.6(25.63±1.02) |
| **Follow-up time** | 1, 3, 6, 12 months |

**Outcome Table 1: Preoperative and postoperative clinical scores were compared between two groups (Mean±SD)**

| Group | No of patients | Time point | OKS score | AKS knee score | AKS knee function score | WOMAC score |
|---|---|---|---|---|---|---|
| **Medial PFJ Normal** | 54 | Pre-operation | 43.73±3.81 | 54.75±4.73 | 52.32±5.57 | 48.50±4.22 |
| | | Post-operation 12 months | 19.36±1.01 | 90.52±5.83 | 91.72±6.07 | 7.81±0.62 |
| **Medial PFJ Degeneration** | 38 | Pre-operation | 44.02±4.06 | 55.41±4.63 | 52.76±5.72 | 48.78±4.61 |
| | | Post-operation 12 months | 19.52±1.10 | 91.02±5.73 | 92.06±6.31 | 8.05±0.54 |

**18. K. Chen, Z. Yuming, Z. Dengjun, H. Yongzhuang, H. Angyang, Y. Yunpeng, The effect of patellofemoral articular cartilage injury on Oxford unicondyle replacement. Journal of Practical Orthopaedics. v.26 (2020) 21-25. [Chinese]**

## Abstract:

**Objective:** To investigate the effect of single iliac replacement on the postoperative outcome of patients with anterior medial osteoarthritis complicated with patellofemoral articular cartilage injury. **Methods**: From March 2016 to August 2018, 67 cases of single sacral replacement were performed in our department. All cases were treated with unilateral knee osteoarthritis. All cases were unilateral knee replacement, including 19 males and 48females; aged 51~84years with an average of (64.67±8.37) years, including 41 cases of left knee, 26 cases of right knee; BMI range from 19.56 to 30.47 (mean ± SD: 25.27±2.56). Duration of disease was 0.5~20.0years(mean:5.08±4.83) years. Intraoperative patellofemoral articular cartilage injury was recorded by Outerbridge grading and grouped. The postoperative follow-up was evaluated by Oxford knee joint score (AKS score) and Lonner patellofemoral joint score to evaluate postoperative outcome and patellofemoral joint pain and functional improvement. The scores of preoperative and postoperative follow-up were statistically analyzed, and the difference was statistically significant, $P < 0.05$. **Results** All patients were followed up for 12~25 months with an average of (18.12±3.68) months. The AKS score was reduced from the preoperative average (44.42±4.86)to the postoperative average (21.46±4.64), $P < 0.01$; Lonner pain The score increased from the preoperative average (29.91±2.48)points to the postoperative average (49.54±2.42)points, $P < 0.01$; the Lonner functional score increased from the preoperative average (23.17±1.40) points to the postoperative average (38.89 ± 1.41), $P < 0.01$; intraoperative observation revealed that 35 knees (52%) with medial patellofemoral articular cartilage injury, compared with no patellofemoral joint cartilage injury (32 knees), postoperative patellofemoral joint pain and function were obtained Improvement, comparison of AKS score Lonner pain and functional scores at 1, 3, 6 and 12 months after surgery had no significant difference. **Conclusion:** The intraoperative medial patellofemoral articular cartilage injury does not affect the short-term efficacy of Oxford monoterpene replacement. UKA can be used as a treatment for patients with anterior knee osteoarthritis with medial patellofemoral articular cartilage injury.

## Baseline Table:

| Demographic Parameter |
|---|

| | |
|---|---|
| **Number of patients enrolled** | 67 |
| **Female-male ratio** | 48:19 |
| **Age, range (Mean ± SD)** | 51-84(64.67±8.37) |
| **BMI, range (Mean ± SD)** | 19.56-30.47(25.27±2.56) |
| **Follow-up time, range (Mean ± SD)** | 0.5-20(5.08±4.83) year |

**Outcome Table 1: Preoperative and postoperative OKS scores were compared between two groups (Mean±SD)**

| Group | Pre-operation | Post-operation 1 month | Post-operation 3 months | Post-operation 6 months | Post-operation 12 months | P value |
|---|---|---|---|---|---|---|
| **PFJ injury** | 43.31±4.43 | 37.50±4.90 | 27.28±5.03 | 23.63±4.83 | 20.97±4.67 | <0.01 |
| **Non PFJ injury** | 45.43±5.07 | 38.71±5.49 | 28.71±4.84 | 25.03±4.59 | 21.91±4.63 | <0.01 |
| **P value** | 0.075 | 0.345 | 0.239 | 0.227 | 0.409 | <0.01 |

**Outcome Table 2: Preoperative and postoperative Lonner pain scores were compared between two groups (Mean±SD)**

| Group | Pre-operation | Post-operation 1 month | Post-operation 3 months | Post-operation 6 months | Post-operation 12 months | P value |
|---|---|---|---|---|---|---|
| **PFJ injury** | 29.91±2.48 | 42.29±2.46 | 46.29±2.23 | 48.66±2.06 | 49.54±2.42 | <0.01 |
| **Non PFJ injury** | 31.59±1.58 | 42.94±1.54 | 46.75±1.30 | 49.19±1.20 | 49.97±1.51 | <0.01 |
| **P value** | 0.002 | 0.203 | 0.307 | 0.208 | 0.396 | <0.01 |

**Outcome Table 3: Preoperative and postoperative Lonner function scores were compared between two groups (Mean±SD)**

| Group | Pre-operation | Post-operation 1 month | Post-operation 3 months | Post-operation 6 months | Post-operation 12 months | P value |
|---|---|---|---|---|---|---|
| **PFJ injury** | 23.17±1.40 | 33.57±1.50 | 37.00±1.48 | 38.23±1.14 | 38.89±1.41 | <0.01 |
| **Non PFJ injury** | 24.09±0.93 | 34.06±1.11 | 37.34±0.79 | 38.69±0.90 | 39.22±1.29 | <0.01 |
| **P value** | 0.003 | 0.135 | 0.245 | 0.073 | 0.318 | <0.01 |

**19. S. An, F. Mingli, L. Zheng, C. Guanglei, W. Shuai, Y. Guangzhong, et al., Effect of lateral patellofemoral joint degeneration on the efficacy of medial unicondyle replacement with Oxford mobile bearing. Chinese Journal of Surgery. 58 (2020) 441-446. [Chinese]**

## Abstract

**Objective:** To explore the influence of lateral patellofemoral joint degeneration on the treatment of anteromedial osteoarthritis of knee joint by Oxford medial unicompartmental knee arthroplasty. **Methods** The clinical data of 73 patients (73 knees) with knee osteoarthritis underwent unicompartmental knee arthroplasty at Department of Orthopaedic Surgery, Xuanwu Hospital, Capital Medical University from March 2016 to December 2017 were analyzed respectively. There were 18 males and 55 females, aged (68.6±7.5) years (range:53 to 89 years). The lateral patellofemoral joints of patients were evaluated by Ahlback grading system. Ahlback 0 and 1 patients were in the non-degenerative group (37 cases), and those in Ahlback II and above were in the degenerative group (36 cases). MRI scores, Hospital for special surgery knee score (HSS) and the Western Ontario and McMaster Universities (WOMAC) osteoarthritis index, as well as the condition of kneeling, sit to stand movement, up stair and down stair were recorded. The data before and after operation were compared by paired sample t test, and the data between groups were compared by independent sample t test. $\chi 2$ test was used for counting data. Pearson correlation analysis was used to compare the correlation between Ahlback score, HSS and WOMAC osteoarthritis index. **Results** The follow-up time was (35.1±6.6) months (range:25 to 47 months). The knee function of the patients improved significantly after operation. The HSS score increased from 57.7±11.8 preoperative to 81.8±7.8 postoperative (t=16.64, P=0.00) and WOMAC osteoarthritis index decreased from 48.9± 13.4 preoperative to 15.6±8.8 postoperative (t=20.48, P=0.00). There was no statistical difference in the change of HSS between the degenerative group and the non-degenerative group before and after surgery (24.7±11.6 vs. 23.6±13.2, t=-1.65, P=0.10) as well as the change of WOMAC osteoarthritis index(31.8±14.0 vs. 36.4±13.7, t=-1.35, P=0.18), but the lateral patellofemoral joint degeneration was related to inability to complete squats ($\chi 2$=5.17, P=0.04) and sitting up ($\chi 2$=7.22, P=0.01).**Conclusions** The degeneration of lateral patellofemoral joint has no effect on the early functional recovery of patients with anteromedial knee osteoarthritis after Oxford medial unicompartmental knee arthroplasty.

**Baseline Table: Comparison of the general information between lateral patellofemoral joint degeneration and non-degeneration after medial Oxford platform unicompartmental knee arthroplasty**

| Group | No. of patients | Sex (n) | | Age (Mean ± SD) | BMI (Mean ± SD) | Comorbidity | | Surgical site | |
|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | | | Hypertension | Diabetes | Left | Right |
| **Non lateral PFJ degeneration** | 49 | 13 | 36 | 68.9±7.8 | 26.6±3.6 | 23 | 11 | 27 | 22 |
| **PFJ lateral degeneration** | 24 | 5 | 19 | 67.8±6.9 | 28.1±4.1 | 12 | 7 | 12 | 12 |

| Group | HSS (Mean ± SD) | WOMAC (Mean ± SD) | Medial PFJ | |
|---|---|---|---|---|
| | | | Non degeneration | Degeneration |
| **Non lateral PFJ degeneration** | 57.2±11.8 | 49.2±11.8 | 26 | 23 |
| **PFJ lateral degeneration** | 58.7±12.1 | 48.3±12.1 | 10 | 14 |

**Outcome Table 1: Postoperative WOMAC scores were compared between two groups (Mean ± SD)**

| Group | Post-operation 1 month | Post-operation 3 months | Post-operation 6 months | Post-operation 12 months | Post-operation 24 months |
|---|---|---|---|---|---|
| **Non PFJ degeneration** | 47.16±14.35 | 33.83±13.65 | 24.86±16.35 | 19.21±13.89 | 16.35±11.94 |
| **PFJ degeneration** | 43.67±15.56 | 36.25±15.64 | 25.58±12.72 | 14.14±3.67 | 14.00±3.61 |

**21. Z. Hu. Analysis of the effect of patellofemoral joint degeneration on the early curative effect of unicondyle replacement [Master]: Guangzhou University of Chinese Medicine. 2019. [Chinese]**


**Abstract:**

**Objective:** the purpose of this study is to investigate the effect of patellofemoral joint degeneration on the early effect of single condyle replacement. **Methods:** from January 2014 to October 2018, the patients who underwent the first single condylar arthroplasty from Guangdong Academy of traditional Chinese medicine were selected. The follow-up time was 3-58 months, with an average follow-up time of 20.84 ± October 16; According to the inclusion criteria and exclusion criteria, 100 patients were included in the data of patients for systematic review. According to the preoperative imaging data and the operation conditions, the patients with knee osteoarthritis who underwent UKA replacement were divided into 27 cases in the medial patellofemoral joint degeneration group in group A, 21 in group B, 24 in group C and 28 in group D (control group). 22 females and 5 men in the medial patellofemoral joint degeneration group, with an average age of 65.33 ± 6.95 years old; The average age of the lateral patellofemoral joint degeneration group was 66.81 in 16 females and 5 males ± 7.67 years old; 17 women and 7 men in the bilateral patellofemoral joint degeneration group, with an average age of 68.08 ± 6.28 years old; The average age of 21 females and 7 males in the patellofemoral joint normal group was 66.79 ± 6.28 years old; The baseline data, evaluation index and imaging data of patients after 1 month follow-up were collected. The short-term effect of single condyle replacement on knee osteoarthritis with patellofemoral joint degeneration was obtained by statistical method. **Results:** there was no significant difference in preoperative gender, age, height, weight, body mass index, hospitalization time, HSS score and VAS score in the four groups. The score of HSS in group A, B, C and D was 61.33 respectively ± 12.08、59.33 ± 11.00、61.75 ± 11.73、60.86 ± The score of HSS was 86.81 in 3 months after operation ± 7.81、88.14 ± 6.27、86.96 ± 7.42、87.18 ± 5.89, the score of HSS in 6 months after operation was 91.25, respectively ± 5.31、90.1 ± 4.66、90.62 ± 6.89、90.14 ± 4.35, the score of HSS in 1 year after operation was 92.64, respectively ± 4.74、92.22 ± 3.96、92.57 ± 6.82、92.42 ± 4.13。 The VAS score of the last postoperative time was 1.33, respectively ± 0.96、1.19 ± 0.98、1.21 ± 1.32、1.04 ± 0.84, the difference is 4.51, respectively ± 1.19、4.43 ± 1.12、4.67 ± 1.24、4.93 ± 1.12。 The hospitalization time was 10.59, 2.00 days and 11.28 days ± 2.89 days, 9.91 ± 1.86 days, 11.14 ± 3.13 days. The difference between the score of HSS and vas before and after operation was statistically significant ($P<0.01$); No deep vein thrombosis or pulmonary embolism occurred in the four groups; There were no significant differences between group A and group B, 5 in group C and 4 in group D ($P < 0.05$). **Conclusion:** the treatment of knee osteoarthritis with patellofemoral joint degeneration is simple and clear in the early stage. There is no significant difference between the two groups. The HSS score of bilateral patellofemoral joint

degeneration group and normal group is slightly lower than that of the normal group, but it is not of clinical significance. It is necessary to choose carefully when the patients with knee osteoarthritis with bilateral patellofemoral joint degeneration are replaced with single condyle, The early effect of UKA in the treatment of knee osteoarthritis with lateral patellofemoral joint degeneration was not significantly affected. The early effect of UKA in the treatment of medial patellofemoral joint degeneration was stable.

**Baseline Table:**

| Demographic Parameter | Medial PFJ degeneration | Lateral PFJ degeneration | Bilateral PFJ degeneration | Non PFJ degeneration |
|---|---|---|---|---|
| **No. of patients** | 27 | 21 | 24 | 27 |
| **Age (years)** | 65.33±6.95 | 66.81±7.67 | 68.08±6.28 | 66.79±6.28 |
| **Male/Female** | 5/22 | 5/16 | 7/17 | 7/21 |
| **BMI (kg/m²)** | 26.90±3.34 | 25.04±3.33 | 25.76±3.36 | 26.98±4.72 |
| **Length of stay (day)** | 10.59±2.00 | 11.28±2.89 | 9.91±1.86 | 11.14±3.13 |

**Outcome Table: Postoperative HSS scores were compared between two groups at 1-year follow-up after UKA (Mean ± SD)**

| Index | Medial PFJ degeneration | Lateral PFJ degeneration | Bilateral PFJ degeneration | Non PFJ degeneration |
|---|---|---|---|---|
| **Preoperative HSS** | 47.63±9.64 | 49.23±10.61 | 47.75±10.66 | 44.32±9.78 |
| **Postoperative HSS at 1-year** | 92.64±4.74 | 92.22±3.96 | 68.08±6.82 | 92.42±4.13 |

**24. R. Zhu, W. Zhidong, C. Guangdong, G. Jifeng, S. Wieidong, X. Yaozeng, The effect of patellofemoral joint degeneration on the effect of medial unicondyle knee replacement. Orthopedic Journal of China. 26 (2018) 2215-2219. [Chinese]**


## Abstract:

**Objective:** To investigate the effect of patellofemoral degeneration on the clinical outcomes of Oxford medial unicondylar knee arthroplasty (UKA). **Methods:** A retrospective study was conducted on 56 patients (56 knees) who underwent UKA for medial compartment osteoarthritis from June 2012 to June 2017. Of them, 16 males and 40 females aged from 50 to 82 years with an average of (63.68±8.23) years and had body mass index (BMI) ranged from 21 to 30 kg/m2 with an average of (25.81±4.52) kg/m2. Before operation, 16 patients suffered from anterior knee pain (AKP group), while the remaining 40 patients were of no anterior knee pain (non-AKP group). The Oxford knee joint score (AKS), American Knee Society Score including clinical and functional AKSS, WOMAC osteoarthritis index score and patellofemoral joint score (PF total score) were used for comparison between the two group. **Results:** All patients were followed up for 12 to 60 months with an average of (35.47±8.96) months. No serious complication, such as infection, fat embolism and deep vein thrombosis of lower extremity, poor prosthesis placed, dislocation and prosthesis loosening were found in anyone of them. Compared with those preoperatively, the AKS and WOMAC significantly decreased, while the clinical AKSS, functional AKSS and PF scores significantly increased at the last follow-up in both the AKP group and non-AKP group ($P<0.05$). However, compared the scores between the AKP group and the non-AKS group, no statistically significant difference was proved in any aforesaid score at corresponding time point ($P>0.05$). **Conclusion:** Anterior knee pain and patellofemoral joint degeneration do not influence the outcome of UKA. There- fore, preoperative imaging findings of patellofemoral joint degeneration should not be an absolute contraindication of UKA.


## Baseline Table:

| Demographic Parameter | |
|---|---|
| **Number of patients enrolled** | 56 |
| **Female-male ratio** | 40:16 |
| **Age, range (Mean ± SD)** | 50-82(63.68±8.23) |

| | |
|---|---|
| **BMI, range (Mean ± SD)** | 21-30(25.81±4.52) |
| **Follow-up time, range (Mean ± SD)** | 12-60(35.47±8.96) month |

**Outcome Table: Preoperative and postoperative clinical scores were compared between two groups (Mean ± SD)**

| Clinical scores | Time point | PFJ OA (n=16) | Non PFJ OA (n=40) | t value | P value |
|---|---|---|---|---|---|
| **OKS** | Pre-operation | 37.68±7.12 | 37.29±7.13 | 0.365 | 0.715 |
| | Last follow-up | 19.24±4.15 | 18.59±4.56 | 0.127 | 0.907 |
| | T value | 16.461 | 18.794 | | |
| | P value | <0.001 | <0.001 | | |
| **AKSS clinical scores** | Pre-operation | 54.65±7.90 | 54.84±7.98 | 0.850 | 0.330 |
| | Last follow-up | 91.47±9.13 | 91.85±9.16 | 1.023 | 0.236 |
| | T value | 27.561 | 24.463 | | |
| | P value | <0.001 | <0.001 | | |
| **AKSS function scores** | Pre-operation | 55.64±5.93 | 56.33±5.93 | 0.386 | 0.305 |
| | Last follow-up | 86.26±8.17 | 87.79±8.20 | 0.225 | 0.838 |
| | T value | 28.709 | 29.488 | | |
| | P value | <0.001 | <0.001 | | |
| **WOMAC scores** | Pre-operation | 56.42±4.39 | 54.46±5.24 | 0.963 | 0.464 |
| | Last follow-up | 9.53±2.13 | 8.28±1.98 | 1.350 | 0.193 |
| | T value | 40.074 | 44.936 | | |
| | P value | <0.001 | <0.001 | | |

**25. Y. Shi, X. Yuan, C. Fayi, L. Jianghua, Q. Bo, The effect of anterior knee pain and patellofemoral joint degeneration on the effect of unicondylar knee replacement. Modern Instruments & Medical Treatment. 24 (2018) 89-91. [Chinese]**


## Abstract:

**Objective**: to analyze the influence of anterior knee pain and patellofemoral degeneration on the curative effect of unicompartmental knee arthroplasty (UKA) and summarize the contraindications of UKA. **Methods:** 115 patients (115 knees) with medial compartment arthritis of knee joint treated by UKA in our hospital were included in this prospective control study. According to the Altman classification of patellofemoral joint degeneration, the patients were divided into medial normal group, medial injury group, lateral normal group, and lateral injury group. The Oxford knee score (AKS), American Knee association score (AKS), AKS knee function score and Osteoarthritis Index (WOMAC) were compared before operation and at the last follow-up, and the effects of anterior knee pain and patellofemoral joint degeneration on the efficacy of UKA were summarized. **Results:** among 115 patients, 49 patients had anterior knee pain before operation; Patellofemoral joint degeneration: 53 cases of medial injury, 62 cases of medial normal, 23 cases of lateral injury, 92 cases of lateral normal. At the last follow-up, AKS score and WOMAC index decreased, while AKS knee score and AKS knee function score increased in the two groups ($P < 0.05$); There was no significant difference between the two groups at the same time ($P > 0.05$). The AKS score and WOMAC index of the medial normal group, medial injury group, lateral normal group and lateral injury group at the last follow-up were lower than those before operation, and the AKS knee score and AKS knee function score were higher than those before operation, the difference was statistically significant ($P < 0.05$); At the last follow-up, the AKS knee score and AKS knee function score of the lateral injury group were lower than those of the lateral normal group, and the difference was statistically significant ($P < 0.05$). **Conclusion:** anterior knee pain and medial patellofemoral joint degeneration have no significant effect on the efficacy of UKA, while lateral patellofemoral joint degeneration can affect the recovery of knee joint function.


## Baseline Table:

| Demographic Parameter | |
|---|---|
| **Number of patients enrolled** | 115 |

| | |
|---|---|
| **Female-male ratio** | 41:74 |
| **Age, range (Mean±SD)** | 54-85 (67.29±11.83) |
| **BMI, range (Mean±SD)** | 22.59-28.63 (24.25±2.88) |
| **Follow-up time** | 24 months |

**Outcome Table 1: Preoperative and postoperative knee function were compared between different groups (Mean ± SD)**

| **Clinical scores** | **Medial PFJ non-degeneration** | | **Medial PFJ degneration** | | **Lateral PFJ non-degeneration** | | **Lateral PFJ degeneration** | |
|---|---|---|---|---|---|---|---|---|
| | Preoperation | Postoperation | Preoperation | Postoperation | Preoperation | Postoperation | Preoperation | Postoperation |
| **OKS** | 39.91±6.34 | 20.36±4.15 | 39.63±6.52 | 19.35±3.88 | 40.38±6.42 | 19.11±3.59 | 43.26±7.04 | 22.19±5.32 |
| **AKS** | 56.92±9.87 | 91.44±9.60 | 56.85±8.43 | 93.26±9.15 | 57.18±9.62 | 93.48±9.91 | 55.26±8.03 | 81.25±7.14 |
| **AKS Function** | 49.82±8.43 | 86.17±7.66 | 49.33±6.05 | 85.29±7.91 | 49.36±7.11 | 86.95±7.33 | 39.91±7.26 | 73.08±7.29 |
| **WOMAC** | 50.39±8.13 | 7.56±2.08 | 50.83±7.99 | 7.91±1.93 | 50.63±7.61 | 7.32±1.88 | 50.81±7.33 | 7.95±1.63 |

**26. W. Li, L. Zhaohui, C. LInjian, Efficacy analysis of knee unicondylar replacement combined with patellofemoral joint degeneration.**

**Jilin Medical Journal. (2018) 1480-1482. [Chinese]**


## Abstract:

**Objective:** To evaluate the effect of patellofemoral osteoarthritis (PFOA) on outcomes after medial unicompartmental knee arthroplasty (UKA). **Methods:** 78 consecutive patients with unicompartmental knee osteoarthritis were undergone UKA. Recorded data of the patients at the time of preoperative and postoperative follow - up of knee joint and patellofemoral joint pain and function change and evaluate the degeneration of patellofemoral joint by imaging methods before operation. **Results:** The results were significantly improved compared with preoperation regardless of whether degeneration of the patellofemoral joint. There was no statistically significant difference in outcome between patients with evidence of degeneration in the medial patellofemoral joint and those without ($P<0.05$). Patients with lateral PFOA and those whose patellofemoral joint normal had a similar result in the scoring of knee joint, but they had a worse score postoperative one month, three months, six months and one year than those without in the scoring of patellofemoral joint ($P < 0.05$). The severity of both medial and lateral PFOA was found to be unrelated to outcome in patients that underwent medial UKA. **Conclusion:** The medial PFOA has no effect on the outcome of UKA; the results that achieved from the data of who with lateral PFOA are not stable, so about such patients we should be caution when selecting operation.


## Baseline Table:

| Demographic Parameter | |
|---|---|
| **Number of patients enrolled** | 90 |
| **Female-male ratio** | 47:43 |
| **Age, range (Mean ± SD)** | 50-80 (64±6) |
| **BMI, range (Mean ± SD)** | 22-30 (26±2) |

**Outcome Table 1: Preoperative and postoperative knee function were compared between different groups (Mean ± SD)**

| Group | n | OKS | | AKS | | WOMAC | |
|---|---|---|---|---|---|---|---|
| | | Preoperation | Postoperation | Preoperation | Postoperation | Preoperation | Postoperation |
| **PFJ Degeneration** | 38 | 40.86±9.57 | 21.08±5.45 | 104.49±16.84 | 183.73±16.57 | 49.63±7.97 | 7.46±1.84 |
| **Non PFJ Degeneration** | 52 | 40.91±9.62 | 20.85±5.77 | 104.80±16.53 | 187.62±18.48 | 49.52±8.06 | 7.30±1.77 |

**Outcome Table 2: Preoperative and postoperative knee function were compared between different PFJ degeneration groups (Mean±SD)**

| Group | n | OKS | | AKS | | WOMAC | |
|---|---|---|---|---|---|---|---|
| | | Preoperation | Postoperation | Preoperation | Postoperation | Preoperation | Postoperation |
| **Medial PFJ Degeneration** | 17 | 39.26±9.33 | 20.75±5.60 | 106.26±15.97 | 185.85±16.33 | 48.26±8.03 | 7.33±1.79 |
| **Lateral PFJ Degeneration** | 10 | 40.11±9.62 | 21.46±5.08 | 104.15±16.95 | 183.03±16.88 | 49.17±8.01 | 7.48±1.88 |
| **Unspecified PFJ Degeneration** | 11 | 41.17±9.39 | 20.93±5.25 | 103.33±17.03 | 182.91±16.75 | 50.08±7.66 | 7.49±1.80 |

**27. B. Xu, B. Ji, W. Guo, W. Mu, L. Cao, Effect of preoperative patellofemoral joint degeneration on the curative effect of Oxford medial unicondyle replacement. Chinese Journal of Surgery. (2017). [Chinese]**


**Abstract:**

**Objective:** To evaluate the influence of patellofemoral joint degeneration and pre-operative pain location on the outcome of medial Oxford unicompartmental knee arthroplasty (UKA). **Methods**: A total of 58 patients (58 knees) with medial Oxford UKA had been performed for medial osteoarthritis from March 2013 to July 2014 in Department of Orthopaedic Surgery at First Teaching Hospital of Xinjiang Medical University were retrospective reviewed. There were 24 males and 34 females, the age from 43 to 87 years with the mean age was 68.5 years. The mean body mass index was 25.2 kg/m2 ranging from 19.7 to 31.5 kg/m2. Patients were divided into anterior-medial pain group (35 knees), anterior knee pain group (17 knees) and general knee pain group (6 knees) according to pre-operative pain location. Pre-operative radiological statuses of the patellofemoral joint were defined by Ahlback system and divided into patellofemoral joint degeneration group (16 knees) and normal group (42 knees). Patients were also divided into medial patellofemoral degeneration group (20 knees), lateral patellofemoral degeneration group (12 knees) and normal group (26 knees) according to Altman scoring system. Outerbridge system was used intraoperatively, and the patients were divided into patellofemoral joint degeneration group (21 knees) and normal group (37 knees). Pre-and post-operative outcomes were evaluated with Oxford Knee Score (AKS), Western Ontario and MacMaster (WOMAC) and patellofemoral score system of Lonner. T test and ANOVA were used to analyze the data. **Results:** The average duration of follow-up was 33 months (from 26 to 42 months). There were no patients had complications of infection, deep vein thrombosis, dislocation or loosing at the last follow-up. Compared to pre-operation, AKS (18.9±3.5 vs.38.9±4.7, 19.3±4.2 vs. 39.6±4.6, 18.1±3.2 vs. 38.1±3.7)(t=5.64 to 7.08, all P<0.01) and WOMAC (10.9±2.3 vs.53.2±4.5, 10.4±2.1 vs.54.6±3.4, 11.7±1.8 vs.52.8±3.7)(t=14.50 to 19.16, all P<0.01) decreased, and the Lonner score (88.9±3.4 vs.38.6±2.8, 87.5±4.1 vs.38.2±2.3, 88.2±3.2 vs. 37.6±3.5)(t=-19.78 to -18.16, all P<0.01) increased significantly in anterior-medial pain group, anterior knee pain group and general knee pain group. According to Ahlback scoring system, compared to pre-operation, AKS (18.3±2.4 vs. 38.7±4.4,19.6±1.8 vs. 38.4±3.1)(t=7.05,9.08,both P<0.01) and WOMAC (10.6 ±2.6 vs.53.2±4.5,12.1±1.4 vs.52.4±3.3)(t=14.21,19.52,both P<0.01) decreased, the Lonner score (88.1±3.1 vs.38.3±3.3,86.9±2.6 vs.39.1±2.4)(t=-18.90,-23.40,both P<0.01) increased significantly in patellofemoral joint degeneration group and normal group, the outcomes were the same

according to Altman and Outerbridge scoring system. There was no significant difference between patellofemoral joint degeneration group and normal group based on Ahlback grading system. According to Altman classification, compared to normal group, there was no statistically differences in AKS, WOMAC and Lonner scoring system between patients with degeneration in the medial patellofemoral joint group, AKS and WOMAC increased (20.2±1.4 vs.18.2±2.7,12.5±1.7 vs.10.5±2.5) (t=-4.30,P=0.03;t=-4.80,P=0.02), the Lonner score decreased (84.3±2.8 vs.87.4±3.2) (t=-6.20,P=0.01) in lateral patellofemoral degeneration group. According to Outerbridge scoring system, there were no statistically differences in patients in patellofemoral joint degeneration group and normal group.
**Conclusions:** There is a good evidence that neither mild to moderate degree of patellofemoral joint degeneration nor pre-operative pain location will compromise the short-term outcome of medial Oxford UKA and should not be considered as contraindications. The situation is less clear for lateral patellofemoral degeneration, and more cautious option is advised.

## Baseline Table:

| Demographic Parameter | |
|---|---|
| **Number of patients enrolled** | 58 |
| **Female-male ratio** | 24:34 |
| **Age, range (Mean)** | 43-87 (68.5) |
| **BMI, range (Mean)** | 19.7-31.5 (25.2) |
| **Follow-up time** | 24 months |

## Outcome Table 1: Preoperative and postoperative knee function were compared between patellofemoral joint degeneration and non-degeneration groups according to Ahlback classification (Mean ± SD)

| Group | Knee number | OKS | | WOMAC | | Lonner | |
|---|---|---|---|---|---|---|---|
| | | Preoperation | Last follow-up | Preoperation | Last follow-up | Preoperation | Last follow-up |
| **PFJ Degeneration** | 16 | 38.4±3.1 | 19.6±1.8 | 52.4±3.3 | 12.1±1.4 | 39.1±2.4 | 86.9±2.6 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Non PFJ Degeneration** | 42 | 38.7±4.4 | 18.3±2.4 | 53.2±4.5 | 10.6±2.5 | 38.8±3.3 | 88.1±3.1 |

**Outcome Table 2: Preoperative and postoperative knee function were compared between patellofemoral joint degeneration and non-degeneration groups according to Altman classification (Mean ± SD)**

| **Group** | **Knee number** | **OKS** | | **WOMAC** | | **Lonner** | |
|---|---|---|---|---|---|---|---|
| | | Preoperation | Last follow-up | Preoperation | Last follow-up | Preoperation | Last follow-up |
| **Non PFJ degeneration** | 26 | 37.3±4.9 | 18.2±2.7 | 53.1±5.1 | 10.5±5.1 | 38.7±3.4 | 87.4±3.2 |
| **Medial PFJ degeneration** | 20 | 38.3±4.2 | 19.7±2.6 | 52.8±5.3 | 11.7±5.3 | 39.7±2.4 | 88.2±2.8 |
| **Lateral PFJ degeneration** | 12 | 36.2±3.7 | 20.2±1.4 | 51.0±3.7 | 12.5±1.7 | 37.7±3.6 | 84.3±2.8 |

**Outcome Table 3: Preoperative and postoperative knee function were compared between patellofemoral joint degeneration and non-degeneration groups according to Outerbridge classification during operation (Mean ± SD)**

| **Group** | **Knee number** | **OKS** | | **WOMAC** | | **Lonner** | |
|---|---|---|---|---|---|---|---|
| | | Preoperation | Last follow-up | Preoperation | Last follow-up | Preoperation | Last follow-up |
| **Non PFJ Degeneration** | 37 | 38.1±2.4 | 19.1±2.0 | 54.8±3.7 | 10.9±2.3 | 38.3±2.6 | 88.2±3.3 |
| **PFJ Degeneration** | 21 | 37.6±2.2 | 19.5±2.2 | 53.7±3.7 | 11.3±2.1 | 37.3±2.2 | 87.1±2.1 |

**28. H. Lv. The effect of anterior knee pain and patellofemoral joint degeneration on the treatment effect of medial unicompartmental knee arthroplasty [Master]: Dalian Medical University. 2017. [Chinese]**


## Abstract

**Background:** with the continuous changes of human living environment and habits, the incidence rate of osteoarthritis of the knee in middle-aged and elderly people is second only to those common diseases of the middle and old aged people, such as diabetes and hypertension. However, over half of the lesions of the knee osteoarthritis are mostly confined to the medial compartment of the knee. At present, unicondylar knee arthroplasty (UKA) is considered to be the best choice for the treatment of medial compartment lesions in elderly patients with knee osteoarthritis, especially minimally invasive unicompartmental knee arthroplasty. Because compared with TKA (total knee arthroplasty), UKA has the advantages of small trauma, low mortality and low incidence of complications, can reduce the pain of patients, and is closer to the physiological and anatomical structure of knee joint [1-4]. However, the indication of UKA is not very clear, many studies think that patellofemoral arthritis should be the contraindication of UKA, and many scholars think that this view is wrong. It has been reported that patellofemoral arthritis is the most common cause of UKA revision [5-8]. In addition, some scholars have shown that whether there is patellofemoral joint degeneration before operation does not affect the curative effect after UKA. Therefore, they believe that the patellofemoral joint degeneration can be ignored when UKA treatment is performed, especially when the prosthesis with movable platform is used [9-11]. Objective: To study the effect of anterior knee pain and patellofemoral joint degeneration on the treatment of medial knee arthritis after medial compartment unicompartmental replacement (UKA). **Methods:** from July 2013 to July 2015, 86 patients (83 knees) underwent medial unicompartmental knee arthroplasty (UKA) in the Department of joint surgery, the Second Affiliated Hospital of Dalian Medical University. There were 15 males and 71 females; The average age was 66.3 years (range, 42-81 years). Body mass index (BMI) ranged from 23 to 27 kg / m2, with an average of 25.3 kg / m2. According to whether there is anterior knee pain before operation, the patients were divided into anterior knee pain group and no anterior knee pain group. Before operation, Altman grade and ahlback score were used to evaluate the imaging

degeneration of patellofemoral joint in 86 cases. The affected knees were divided into medial normal group, medial degeneration group, lateral normal group and lateral degeneration group. Oxford knee score (AKS score) and American Knee Society score (AKS score) were used to evaluate the preoperative and postoperative knee pain and function. SPSS software was used to analyze the scores of knee AKS and AKS before and after the operation. The results were analyzed by t-test with the mean ± sd. **Results:** all patients were followed up for 12-24 months (average 15.6 months). There were no postoperative complications such as infection, dislocation of polyethylene liner, poor position or loosening of prosthesis, periprosthetic fracture and so on. The scores of AKS and AKS at the last follow-up were significantly improved in all patients ($P < 0.01$). There were 42 cases in the anterior knee pain group and 44 cases in the non-anterior knee pain group. There were no significant differences in the preoperative AKS and AKS scores between the two groups ($P > 0.05$); There was no significant difference in the scores of AKS and AKS between the two groups at the last follow-up ($P > 0.05$). According to ahlback and Altman evaluation of patellofemoral joint degeneration, the selected patients were divided into groups. The medial patellofemoral joint was normal in 53 cases and medial patellofemoral joint degeneration in 33 cases; There were 74 cases with normal lateral patellofemoral joint and 12 cases with degenerative lateral patellofemoral joint (according to Altman score). The medial patellofemoral joint was normal in 77 cases and medial patellofemoral joint degeneration in 9 cases; Lateral patellofemoral joint was normal in 80 cases and lateral patellofemoral joint degeneration in 6 cases (according to ahlback classification). According to ahlback and Altman evaluation, the scores of AKS and AKS were significantly improved at the last follow-up ($P < 0.01$) in patients with or without medial patellofemoral degeneration before operation, and there was no significant difference between the two groups at the last follow-up ($P > 0.05$). According to ahlback classification, there was no significant difference between the preoperative AKS and AKS scores of the two groups with or without lateral patellofemoral degeneration, and between the postoperative AKS and AKS scores at the last follow-up; According to Altman score, there was no significant difference in the preoperative AKS and AKS scores between the two groups; At the last follow-up, there was no significant difference in AKS score between the two groups, but the AKS score of patients with lateral patellofemoral degeneration was lower than that of patients without lateral patellofemoral degeneration at the last follow-up, and the difference was statistically significant (- 2.47, - 2.06, $P = 0.02 < 0.05$). **Conclusion:** anterior knee pain and medial patellofemoral degeneration do not affect the therapeutic effect of medial compartment unicompartmental knee arthroplasty, while the therapeutic effect of medial compartment unicompartmental knee arthroplasty in patients with lateral patellofemoral degeneration is worse than that in patients with normal lateral patellofemoral joint.

**Baseline Table:**

| Demographic Parameter | |
|---|---|
| **Number of patients enrolled** | 83 |
| **Female-male ratio** | 15:71 |
| **Age, range (Mean)** | 42-81 (66.3) |
| **BMI, range (Mean)** | 23-27 (25.3) |
| **Follow-up time (Mean±SD)** | 15.6±3.0 months |

**Outcome Table 1: Preoperative and postoperative clinical scores were compared between patellofemoral joint degeneration and non-degeneration groups according to Altman classification (Mean ± SD)**

| Group | n | AKS | | OKS | |
|---|---|---|---|---|---|
| | | Preoperation | Last follow-up | Preoperation | Last follow-up |
| **Medial PFJ non-degeneration** | 53 | 110.4±9.7 | 184.9±7.8 | 39.9±6.4 | 19.3±3.6 |
| **Medial PFJ degeneration** | 33 | 111.9±10.3 | 184.8±6.4 | 41.1±6.5 | 20.2±4.7 |
| **Lateral PFJ non-degeneration** | 74 | 111.0±10.2 | 185.7±6.7 | 40.5±6.4 | 19.6±4.2 |
| **Lateral PFJ degeneration** | 12 | 110.7±8.4 | 180.2±8.7 | 42.0±7.2 | 20.3±3.5 |

**32. X. Yu, The effect of patellofemoral joint degeneration on the curative effect of unicondylar arthroplasty for the elderly. Shenzhen Journal of Integrated Traditional Chinese and Western Medicine. 26 (2016) 19-21. [Chinese]**

**Abstract:**

**Objective:** To investigate the effect of patellar degeneration on the clinical efficacy of elderly patients with unicompartmental knee arthroplasty. **Methods:** 92 elderly patients with unicompartmental knee arthroplasty were selected in our hospital, including 46 patients with anterior knee pain and 46 patients without anterior knee pain. **Results:** compared with the preoperative and postoperative knee function of the two groups, AKS, AKS, WOMAC scores of the two groups were significantly improved (P 0.05), and there was no significant difference between the two groups (P<0.05), The Altman scores of the patients in each group were significantly improved, while the AKS and WOMAC scores of the lateral injury group were significantly higher than those of the normal group (P<0.05). There was no significant difference in the other final follow-up scores between the ipsilateral and preoperative (P<0.05). **Conclusion:** anterior knee pain and medial patellar degeneration have no significant effect on the clinical efficacy of elderly patients undergoing unicompartmental knee replacement, However, the degeneration of the external patella has a negative effect on the clinical outcome of elderly patients with unicompartmental knee arthroplasty.

**Baseline Table:**

| Demographic Parameter | |
|---|---|
| **Number of patients enrolled** | 92 |
| **Female-male ratio** | 47:45 |
| **Age, range (Mean ± SD)** | 55-81 (68.2±5.1) |
| **BMI, range (Mean)** | 23-27 (26.5) |

| | |
|---|---|
| **Follow-up time, range** | 24 months |

**Outcome Table 1: Preoperative and postoperative clinical scores were compared between patellofemoral joint degeneration and non-degeneration groups according to Altman classification (Mean ± SD)**

| **Group** | **n** | **OKS** | | **AKS** | | **WOMAC** | |
|---|---|---|---|---|---|---|---|
| | | Preoperation | Last follow-up | Preoperation | Last follow-up | Preoperation | Last follow-up |
| **Medial PFJ non-degeneration** | 15 | 41±7 | 20±4 | 105±18 | 187±16 | 50±8 | 7±2 |
| **Medial PFJ degeneration** | 24 | 41±7 | 20±2 | 105±14 | 183±15 | 50±7 | 7±1 |
| **Lateral PFJ degeneration** | 18 | 40±5 | 19±4 | 104±15 | 181±19 | 50±7 | 7±1 |
| **Lateral PFJ non-degeneration** | 17 | 42±5 | 21±5 | 104±16 | 186±14 | 50±7 | 9±2 |

**33. S. Peng. The effect of anterior cruciate ligament defect and patellofemoral joint degeneration on the effect of fixed-bearing unicondyle replacement [Master]: The Second Military Medical University. 2016. [Chinese]**


**Abstract:**

**Objective:** To explore the influence of anterior cruciate ligament (ACL) defect and patellofemoral joint degeneration on the postoperative efficacy and prosthesis survival rate of unicondylar knee arthroplasty (UKA), and to explore whether ACL defect and patellofemoral joint degeneration are contraindications of UKA. **Methods:** 1. The patients who underwent UKA in our department from January 2012 to June 2014 were followed up for 1 to 2.5 years (average 1.6 years). The patients were divided into ACL defect group and control group according to whether there were defects in preoperative MRI or intraoperative ACL. During the follow-up, the Oxford knee score (OKS score), American Knee association score (AKS score), osteoarthritis index score (WOMAC score) and other clinical effects were evaluated. After follow-up, the clinical efficacy score of ACL defect group was compared with that of the control group, and the revision rate and reasons were compared between the two groups; 2： From January 2012 to April 2015, patients with unicondylar knee arthroplasty (UKA) in our department were followed up for 1 to 3 years (average 2 years); The cartilage and bone loss of the patellofemoral joint were evaluated by ahlback classification. The patients were divided into patellofemoral joint degeneration group and control group; The degree of patellofemoral arthritis was evaluated by Altman score. UKA patients were divided into patellofemoral arthritis group and control group; During the follow-up, the Oxford knee score (OKS score), American Knee association score (AKS score), osteoarthritis index score (WOMAC score) and other clinical effects were evaluated. After the follow-up, the clinical efficacy scores of the two groups were compared with those of the control group, and the revision rate and reasons were compared between the two groups. **Results:** 1. The clinical efficacy scores of ACL defect group and control group were OKS scores at the last follow-up (t = 22.63) ± 82 8 ± 57), OKS score difference before and after UKA (t = 17. 47) ± 73 7 ± 32), AKS knee score (t = 91. 16 9 ± 66 10 ± 71), AKS functions score (t = 87. 28 2 ± 61 and 88. 55 7 ± 57), WOMAC score (t = 8. 59 10 ± 94 and 8. 52 2 ± 77), and there was no significant difference between the two groups (P > 0.05). At the end of follow-up, the revision rate of ACL defect group was 5.9%, and that of control group was 6.2%. The comparison of the two groups was performed by x2 test, and the results showed that there was no significant difference between the two groups (P > 0.05). The causes of revision were the same in the two groups, which were persistent postoperative pain and progress of lateral compartment osteoarthritis; 2： For anterior knee pain, the postoperative clinical efficacy scores of the two groups were OKS score at the last follow-up (t = 21.88) ± 59 7 ± 73), OKS score difference

before and after UKA (t = 16. 60 8 ± 32 and 17. 29 respectively ± 52), AKS knee score (t = 92. 12 8 ± 57 9 ± 02), AKS functions score (t = 87. 52 2 ± 29 6 ± 62), WOMAC score (t = 8. 59) ± 52 3 ± There was no significant difference in the clinical efficacy scores between the two groups (P > 0.05); According to ahlback classification and Altman score, the postoperative clinical efficacy score of medial patellofemoral joint group was OKS score at the last follow-up (t = 22.70) ± 7.35、t=21.38 ± 41), OKS score difference before and after UKA (t = 18. 27 7 ± 9.18、t=17.77 ± 26), AKS knee score (t = 97. 14 9 ± 8.44、t=93.29 ± 52), AKS functions score (t = 84. 09) ± 15.31、t=89.38 ± 30), WOMAC score (t = 9. 09) ± 1.09、t=8.51 ± There was no significant difference between the two groups (P > 0.05); The clinical efficacy scores of the lateral patellofemoral joint group were OKS scores at the last follow-up (t = 26.45) ± 8.24、t=26.31 ± 35), OKS score difference before and after UKA (t = 14. 27 9 ± 3.62、t=13.59 ± 06), AKS knee score (t = 89. 27 8 ± 11.22、t=90.41 ± 38), AKS functions score (t = 80. 64 9 ± 10.28、t=84.47 ± 60), WOMAC score (t = 8. 81 1 ± 2.15、t=8.94 ± 51), and the clinical efficacy scores of the two groups were significantly lower than those of the control group (P < 0.05). According to ahlback classification, the revision rate was 8.0% in the patellofemoral degeneration group and 6.8% in the control group; According to the Altman score, the revision rate was 7.2% in the patellofemoral arthritis group and 6.5% in the control group. There was no significant difference between the two groups (P > 0.05). The causes of revision in the two groups were the same, including the progress of lateral compartment osteoarthritis and aseptic loosening. **Conclusion:** 1. For patients with ACL defect found on MRI or intraoperative, if there is no anterior posterior instability of knee joint, ACL defect does not affect the clinical efficacy of UKA, so it should not be used as a contraindication of fixed platform UKA; 2. The medial patellofemoral joint degeneration does not affect the clinical efficacy scores of the fixed platform UKA, and it is not a contraindication of the fixed platform UKA. The lateral patellofemoral joint degeneration will lead to a slightly worse curative effect than the normal cases, but still achieved excellent curative effect, It should be considered as a relative contraindication of fixed platform UKA.

## Baseline Table:

| **Demographic Parameter** | |
|---|---|
| **Number of patients enrolled** | 276 |
| **Female-male ratio** | 119:157 |
| **Age, range (Mean)** | 48-70 (680.4) |
| **BMI, range (Mean)** | 17.54-28.61 (22.24) |
| **Follow-up time (Mean ± SD)** | 2.9±0.75 years |

**Outcome Table 1: The post-operative clinical outcomes of the groups by the Ahlback grading system (Mean ± SD)**

| Group | n | OKS | AKS KNEE | AKS FUNCTION |
|---|---|---|---|---|
| **Medial PFJ degeneration** | 15 | 22.70±7.35 | 92.14±8.44 | 84.09±15.31 |
| **Lateral PFJ degeneration** | 7 | 26.45±8.24 | 82.78±11.22 | 80.64±10.28 |
| **Bilateral PFJ degeneration** | 3 | 27.25±1.04 | 88.50±1.40 | 80.25±1.28 |
| **Non PFJ degeneration** | 237 | 21.14±7.96 | 90.74±13.20 | 87.57±11.30 |

**Outcome Table 2: The post-operative clinical outcomes of the groups by the Altman grading system (Mean ± SD)**

| Group | n | OKS | AKS KNEE | AKS FUNCTION |
|---|---|---|---|---|
| **Medial PFJ degeneration** | 86 | 21.38±7.41 | 93.29±8.52 | 89.38±14.30 |
| **Lateral PFJ degeneration** | 21 | 26.31±9.35 | 89.41±9.38 | 84.47±13.60 |
| **Bilateral PFJ degeneration** | 32 | 27.85±8.23 | 89.57±9.29 | 83.98±12.98 |
| **Non PFJ degeneration** | 123 | 21.54±7.66 | 93.69±9.12 | 90.11±15.28 |

**34. J. Li, B. Ding, D. Niu, Y. Liang, B. Kou, J. Ma, The effect of patellofemoral joint degeneration on the early and mid-term efficacy of unicondylar knee replacement. Ningxia Medical Journal. (2016) 623-625. [Chinese]**

## Abstract

**Objective:** To evaluate the effect of patellofemoral osteoarthritis (PFOA) on outcomes after medial unicompartmental knee arthroplasty (UKA). **Methods:** 78 consecutive patients with unicompartmental knee osteoarthritis were undergone UKA. Recorded data of the patients at the time of preoperative and postoperative follow - up of knee joint and patellofemoral joint pain and function change and evaluate the degeneration of patellofemoral joint by imaging methods before operation. **Results:** The results were significantly improved compared with preoperation regardless of whether degeneration of the patellofemoral joint. There was no statistically significant difference in outcome between patients with evidence of degeneration in the medial patellofemoral joint and those without ($P<0.05$). Patients with lateral PFOA and those whose patellofemoral joint normal had a similar result in the scoring of knee joint, but they had a worse score postoperative one month, three months, six months and one year than those without in the scoring of patellofemoral joint ($P<0.05$). The severity of both medial and lateral PFOA was found to be unrelated to outcome in patients that underwent medial UKA. **Conclusion:** The medial PFOA has no effect on the outcome of UKA; the results that achieved from the data of who with lateral PFOA are not stable, so about such patients we should be caution when selecting operation.

## Baseline Table:

| Demographic Parameter | |
|---|---|
| **Number of patients enrolled** | 78 |
| **Female-male ratio** | 60:18 |
| **Age, range (Mean)** | 50-79 (66.4) |
| **BMI, range (Mean)** | 21.1-29.6 (26.6) |

| | |
|---|---|
| **Follow-up time** | 1, 3, 6, 12, 24 months |

**Outcome Table: Preoperative and postoperative OKS scores were compared between two groups (Mean ± SD)**

| Group | n | Pre-operation | Post-operation 1 month | Post-operation 3 months | Post-operation 6 months | Post-operation 12 months | Post-operation 24 months |
|---|---|---|---|---|---|---|---|
| **PFJ degeneration** | 41 | 43.66±4.70 | 37.83±4.50 | 26.50±5.86 | 24.34±4.47 | 20.93±4.48 | 19.39±4.33 |
| **Medial PFJ degeneration** | 21 | 42.24±4.39 | 37.14±4.07 | 29.43±4.62 | 24.38±4.55 | 20.33±4.61 | 19.29±4.55 |
| **Lateral PFJ degeneration** | 8 | 45.75±5.04 | 40.38±5.26 | 28.13±4.99 | 23.63±4.67 | 21.25±4.43 | 19.25±4.43 |
| **Bilateral PFJ degeneration** | 12 | 44.75±4.58 | 37.33±4.48 | 28.13±5.00 | 24.75±4.39 | 21.75±4.52 | 19.67±4.23 |

**35. S. Chen. Clinical study of the effect of unicondyle replacement on the status of the patellofemoral joint [Master]: Zhengzhou University. 2016. [Chinese]**

## Abstract

**Background and objective** unicompartmental knee replacement (UKA) is a kind of surgical method for single compartment (mainly medial compartment) osteoarthritis. It has definite curative effect for osteoarthritis patients whose lesions are limited to unilateral compartment. Although compared with total knee arthroplasty, it has many advantages, such as small surgical trauma, less intraoperative blood loss, fast postoperative recovery, more human biological functions, and patients feel good after surgery [1-2]. But in the early stage, due to the unreasonable choice of patients, prosthesis design and surgical technology problems, postoperative complications are far more than total knee arthroplasty, which limits its development and application. However, for patients in Asia, preserving more knee flexion after surgery can bring a lot of direct convenience to their daily life. This makes UKA have better market demand and development space in Asia. At present, the understanding of single compartment osteoarthritis has been greatly improved, and the corresponding UKA prosthesis, surgical instruments, and surgical techniques have also made great progress in the early years, and the surgical indications have been correspondingly widened. However, for some patients with knee joint single compartment osteoarthritis with patellofemoral joint symptoms, when choosing the UKA surgical method, we should pay attention to the following aspects, there are still many controversies on the choice of total knee replacement (TKA). There are few reports about patellofemoral joint before and after UKA. The purpose of this study was to investigate the changes of patellofemoral joint status in patients with medial compartment osteoarthritis (OA) with patellofemoral symptoms after knee UKA, and to analyze the influencing factors of the treatment effect of UKA; Objective to investigate the feasibility of UKA in the treatment of medial compartment OA with patellofemoral degeneration. Materials and methods this study retrospectively analyzed 25 patients (33 knees) with medial compartment OA of knee joint with patellofemoral symptoms in our hospital. All patients were able to squat and stand up, and were given UKA treatment. X-ray films were taken before and after the operation to measure and compare the changes of tibiofemoral angle. The

patellofemoral joint state was recorded by Outerbridge grading system. The pain and functional changes of patellofemoral joint before and after operation were evaluated by lonner patellofemoral joint scoring system. The patients were followed up for 3 months, 6 months and 1 year respectively to evaluate and analyze the changes of patellofemoral joint: pain and function score. Results and conclusion before operation, the total scores of patellofemoral joints of 33 knees were very poor, but one year later, the total scores increased to excellent in 11 cases (33%), good in 14 cases (41%), fair in 8 cases (26%), and none of them had poor scores. The final results showed that the patellofemoral joint pain score, functional score and total score were satisfactory. The results showed that within one year after UKA, the original patellofemoral joint symptoms of the patients were not aggravated but improved. Therefore, we believe that UKA is feasible in the treatment of medial compartment OA patients with patellofemoral joint degeneration or medial compartment OA patients with patellofemoral joint clinical manifestation, and the effect is satisfactory at least in the short term.

**Baseline Table:**

| **Demographic Parameter** | |
|---|---|
| **Number of patients enrolled** | 25 |
| **Female-male ratio** | 17:8 |
| **Age, range (Mean)** | 50-81 (65.4) |
| **BMI, range (Mean)** | 19.1-37.4 (25.6) |
| **Follow-up time (Range, months)** | 12-24 |

**Outcome Table: Preoperative and postoperative Lonner patellofemoral joint scores (Mean ± SD)**

| **Index** | **No. of knees** | **Pain score** | **Function score** | **Total score** |
|---|---|---|---|---|
| **Preoperative Lonner** | 33 | 20.42±5.16 | 14.94±4.05 | 35.36±8.91 |
| **Postoperative Lonner at 3 months** | 33 | 32.79±5.12 | 26.15±4.22 | 58.94±9.01 |
| **Postoperative Lonner at 6 months** | 33 | 34.76±5.06 | 28.12±4.22 | 62.88±8.95 |

| | | | | |
|---|---|---|---|---|
| **Postoperative Lonner at 1-year** | 33 | 43.38±4.26 | 34.48±2.96 | 77.97±6.64 |

**38. C. He, Y. Yan, J. Feng, Z. Liu, Y. Wang, Q. Yang, The effect of lateral patellofemoral joint degeneration on the curative effect of medial unicondyle knee replacement. Orthopaedic Biomechanics Materials and Clinical Study. (2015) 29-32. [Chinese]**

## Abstract

**Objective** Degeneration of lateral patellofemoral joint is considered be contraindications to medial unicompartmental knee replacement. We therefore examined the validity of this preconception using information gathered prospectively before surgery and on the intra-operative status of the patellofemoral joint in Chinese patients who underwent Oxford unicondylar knee replacement for anteromedial osteoarthritis. **Methods** The study group comprised 126 consecutive knees (108 patients). All operations were performed between August 2009 and December 2013. Location of preoperative knee pain was recorded, and the radiological status of the patellofemoral joint were defined using the Ahlback systems. The Weidow five-point grading system classified degeneration of the patellofemoral joint from none to full-thickness cartilage loss according to intra-operative observation. The location of cartilage loss was recorded and based on that the affected knees were divided into three groups, central-medial cartilage loss group (M group), lateral cartilage loss group (L group) and none cartilage loss group (N group). Outcome was evaluated at one years with Hospital for Special Surgery knee score and ability of deep squat. And the complications were collected respectively. **Results** 118 knees (98 patients) were included in the analysis. Cartilage loss on the trochlear surface was observed in 81 knees (68.6%), on the medial trochlear in 57 knees (48.3%), on the central trochlear in 13 knees (11%) and on the lateral trochlear in 11 knees (7.6%), on both side in 2 knees (1.7%). As for the HSS score improvement, there is no difference between group M and N, as the same between group L and N. But patients in group L presented a slim better changed in HSS knee score than those in group M. The number of patients with ability to deep squat and independent rising are 28 in group N, 8 in group L, N, 1 in group L and 6 in group M). **Conclusion** Neither radiologically demonstrated lateral patellofemoral joint degeneration nor cartilage loss at lateral patellofemoral joint should be considered a contraindication to Oxford medial unicompartmental knee replacement.

**Baseline Table:**

| Demographic Parameter | |
|---|---|
| **Number of patients enrolled** | 104 |
| **Female-male ratio** | 70:34 |
| **Age, range (Mean)** | 47-90 (63.2) |
| **Follow-up time** | 12 months |

**Outcome Table: Preoperative and postoperative HSS scores were compared between two groups (Mean ± SD)**

| Group | n | Pre-operation | Post-operation 12 months |
|---|---|---|---|
| **Lateral PFJ degeneration** | 11 | 40.4±8.5 | 89.9±5.4 |
| **Medial PFJ degeneration** | 70 | 41.9±7.3 | 90.4±4.8 |
| **Non PFJ degeneration** | 37 | 42.1±6.2 | 90.8±6.6 |

**39. T. Ma, M. Cai, H. Xue, X. Liu, Y. Tu, The effect of patellofemoral joint degeneration on the effect of unicondylar knee replacement. Chinese Journal of Surgery. 51 (2013) 1010-1015. [Chinese]**


**Abstract:**

**Objective:** To investigate the influence of anterior knee pain and imaging patellofemoral degeneration on the efficacy of unicompartmental knee arthroplasty in the treatment of medial compartment osteoarthritis. **Methods** the clinical data of 95 patients (100 knees) with medial compartment osteoarthritis treated by unicompartmental knee arthroplasty from January 2006 to December 2010 were retrospectively analyzed, including 34 males and 61 females; The mean age was 68.2 years (range, 55-82 years). The body mass index (BMI) was 26.3 kg / m2 (range, 24-28 kg / m2). Forty-three knees (group with anterior knee pain) and 57 knees (group without anterior knee pain) had anterior knee pain before operation The preoperative and postoperative knee function was evaluated by the American Knee Society score (AKS) and WOMAC Osteoarthritis Index score (WOMAC). Paired t-test was used to compare the preoperative and postoperative knee function scores, and group t-test was used to compare the scores among the groups. **Results** all patients were followed up for 24-84 months, with an average of 50 months Fat embolism or deep venous thrombosis of the lower extremities were not found. The average varus angle of femoral prosthesis was - 0.7 °± 5.2 °, The average flexion and extension angle was - 0.8 °± 4.5 °； The average varus angle of tibial prosthesis was - 0.1 °± 2.2°, The average flexion and extension angle was - 0.4 °± 2.4°. The OKS score (t = 19.04 and 31.57), AKS knee score (t = 38.56 and 40.34), AKS knee function score (t = 39.29 and 43.62) and WOMAC score (t = 43.22 and 47.06) of patients with or without anterior knee pain at the last follow-up were significantly improved (P<0.01), According to ahlback grade and Altman score, all the scores of patients with patellofemoral joint injury were significantly improved at the last follow-up (P<0.01), According to Altman score, OKS score (t = 2.56, P = 0.01) and WOMAC score (t=2.20, P=0.03) of patients with lateral patellofemoral joint damage were worse than those without lateral patellofemoral joint damage; According to ahlback classification, OKS score of patients with lateral patellofemoral joint damage (t= 2.29, P = 0.02) was worse than that of patients without lateral patellofemoral joint damage; There was no significant difference in AKS score between the two groups (P>0.05). **Conclusion** anterior knee pain and medial patellofemoral joint damage do not affect the curative effect of unicompartmental knee arthroplasty. Lateral patellofemoral joint damage often indicates that the curative effect is worse than normal

**Baseline Table:**

| Demographic Parameter | |
|---|---|
| **Number of patients enrolled** | 95 |
| **Female-male ratio** | 61:34 |
| **Age, range (Mean)** | 55-82 (68.2) |
| **BMI, range (Mean)** | 24-28 (26.3) |
| **Follow-up time (Mean ± SD)** | 50±15 months |

**Outcome Table 1: Preoperative and postoperative clinical scores were compared between patellofemoral joint degeneration and non-degeneration groups according to Altman classification (Mean ± SD)**

| Group | n | OKS | | AKS Knee | | AKS Function | | WOMAC | |
|---|---|---|---|---|---|---|---|---|---|
| | | Preoperation | Last follow-up | Preoperation | Last follow-up | Preoperation | Last follow-up | Preoperation | Last follow-up |
| **Medial PFJ non-degeneration** | 54 | 39±6 | 19±4 | 55±8 | 90±8 | 50±7 | 87±8 | 52.0±8.4 | 7.4±1.8 |
| **Medial PFJ degeneration** | 46 | 41±6 | 19±4 | 55±7 | 92±8 | 50±5 | 86±9 | 52.6±8.0 | 7.8±2.1 |
| **Lateral PFJ non-degeneration** | 80 | 39±5 | 18±4 | 56±8 | 90±8 | 50±6 | 87±8 | 52.2±8.1 | 7.2±2.0 |
| **Lateral PFJ degeneration** | 20 | 42±6 | 21±4 | 54±7 | 92±6 | 50±6 | 84±8 | 52.1±8.3 | 8.6±2.5 |

**Outcome Table 2: Preoperative and postoperative clinical scores were compared between patellofemoral joint degeneration and non-degeneration groups according to Ahlback classification (Mean ± SD)**

| Group | n | OKS | | AKS Knee | | AKS Function | | WOMAC | |
|---|---|---|---|---|---|---|---|---|---|
| | | Preoperation | Last follow-up | Preoperation | Last follow-up | Preoperation | Last follow-up | Preoperation | Last follow-up |
| **Medial PFJ non-degeneration** | 91 | 40±6 | 19±4 | 55±8 | 91±8 | 50±6 | 86±9 | 52.0±8.1 | 7.5±2.0 |
| **Medial PFJ degeneration** | 9 | 41±4 | 20±4 | 52±8 | 92±7 | 49±5 | 89±9 | 55.1±9.4 | 7.3±2.3 |
| **Lateral PFJ degeneration** | 94 | 40±6 | 19±4 | 55±7 | 91±8 | 50±6 | 87±8 | 52.1±8.0 | 7.5±2.1 |
| **Lateral PFJ non-degeneration** | 6 | 43±7 | 23±4 | 54±7 | 89±8 | 52±7 | 86±8 | 55.8±10.6 | 8.2±2.9 |

**40. C. He, J. Feng, Z. Liu, Y. Wang, Q. Yang, The effect of patellofemoral joint degeneration on the effect of Oxford medial unicondyle replacement. Chinese Journal of Joint Surgery (Electronic Edition). 7 (2013) 459-463. [Chinese]**

**Abstract:**

**Objective** to collect prospective data and observe the patellofemoral joint condition in Chinese patients undergoing Oxford unicompartmental arthroplasty for anteromedial knee arthritis, and to explore the correctness of this conclusion. **Methods** 50 consecutive cases (45 patients) of unicompartmental arthroplasty from August 2009 to May 2011 were included in this study, The degeneration of patellofemoral joint was graded by ahlback system. The wear of femoral trochlear cartilage was recorded by weidow 5 grading system, one year after operation, the clinical efficacy was evaluated by the hospital for Special Surgery knee scoring system and self-satisfaction score. **Results** preoperative radiographic examination showed that 17 knees (34%) had patellofemoral degeneration. Intraoperative observation showed that 27 knees (54%) had femoral trochlear cartilage wear, among them, 19 cases (38%) were located in the medial trochlear groove, 6 cases (12%) in the middle of the trochlear groove, 1 case (2%) in the lateral trochlear groove. There were 3 cases (6%) with full-thickness cartilage wear, 2 cases (4%) in the medial trochlear groove, and 1 case (2%) in the lateral trochlear groove, there was no significant difference in clinical efficacy. **Conclusion** preoperative radiographically detected patellofemoral degeneration and intraoperative patellofemoral cartilage wear cannot be used as the counter indication of Oxford medial unicompartmental replacement. Due to the lack of relevant data on lateral patellofemoral degeneration, we should be careful when choosing unicompartmental replacement for such patients.

**Baseline Table:**

| Demographic Parameter | |
|---|---|
| **Number of patients enrolled** | 45 |
| **Female-male ratio** | 34:11 |
| **Age, range (Mean)** | 52-80 (64.7) |
| **Follow-up time** | 12 months |

**Outcome Table: Comparison of the effect of unicompartmental arthroplasty in patellofemoral joint with or without radiographic degenerative changes (Mean ± SD)**

| Group | n | Pre-operation HSS | Post-operation HSS at 12 months |
|---|---|---|---|
| **PFJ degeneration** | 11 | 42.43±7.79 | 89.59±4.29 |
| **Non PFJ degeneration** | 37 | 43.39±5.79 | 90.82±2.96 |