✚ Evidence in focus
Publication summary

Smith+Nephew

Improved patient recovery and fewer 90-day readmissions after RI.KNEE total knee arthroplasty (TKA) on CORI◊ Surgical System versus conventional methods

Cochrane NH, Kim BI, Leal J, Hallows RK, Seyler TM. Comparing a robotic imageless second-generation system to traditional instrumentation in total knee arthroplasty: a matched cohort analysis. *J Orthop*. 2024;57:1–7.

Available at: Journal of Orthopaedics

Key points

Compared with conventional TKA, RI.KNEE TKA on CORI Surgical System resulted in:

Significantly **quicker recovery** (reduced pain in the care unit and earlier discharge; p≤0.022)

Significantly **fewer 90-day readmissions** (13.5 vs 4.2%; p=0.001)

No increase in procedure **time**

Overview

- Multi-surgeon (two), multi-centre retrospective review of 430 TKAs conducted with RI.KNEE TKA on CORI Surgical System (n=215) or conventional methods (n=215)
- Patients were propensity score matched between groups (by age, sex, BMI, American Society of Anesthesiologists [ASA] score) on a surgeon-specific basis
- Intra-, peri- and post-operative outcomes were assessed including:
  - Procedure time, blood loss, wound drain use
  - Length of stay, discharge location, readmissions (30- and 90-day)
  - Pain scores (pre-operatively, in the care unit, and at 3, 6 and 12 months post-TKA) and PROMs (KOOS JR and PROMIS Global 10; pre-operatively, at 3 months and final follow-up)
  - Survivorship to all-cause revision

Results

- Compared with conventional TKA, use of RI.KNEE TKA on CORI Surgical System resulted in:
  - Significantly lower pain scores in the post-operative care unit (3 vs 2; p=0.016) and at 1-year post-TKA (2 vs 1; p=0.022)
  - Significantly fewer patients required a post-operative drain (34.4 vs 12.6%; p<0.001)
  - Significantly earlier discharge by 12 hours on average (mean length of stay: 54 vs 42 hours; p=0.022)
  - Significantly more patients were discharged to home or self care (60.0 vs 86.5%; p<0.001)
  - Significantly fewer 90-day readmissions (Figure; p=0.001) and numerically fewer 30-day readmissions (6.5 vs 2.3%)
  - No difference in procedure time, blood loss, 3-year survivorship, improvements in PROMs and pain scores at 3 and 6 months

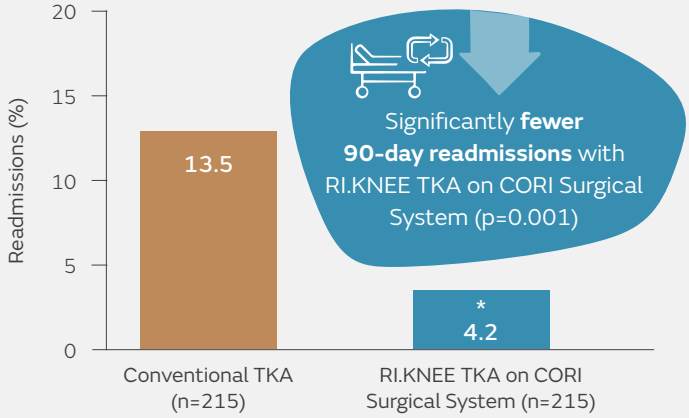

*Figure. 90-day readmissions; *p=0.001*

Conclusions

Use of RI.KNEE TKA on CORI Surgical System resulted in significantly quicker recovery (reduced pain in the care unit and earlier discharge) with significantly fewer 90-day readmissions, compared with conventional TKA. These benefits were seen without an increase in procedure time.

Abbreviations: KOOS JR = Knee Injury and Osteoarthritis Outcome Score for Joint Replacement; PROMIS = Patient-Reported Outcomes Measure Information System; PROMs = patient-reported outcome measures.

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