## Outcomes of Regional Block in Revision Total Joint Arthroplasty for Prosthetic Joint Infection

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Infection is among the most common reasons for revision following a total joint arthroplasty (TJA) and is associated with significant morbidity and mortality rates. As the demand for TJA increases, a concurrent increase in the prevalence of periprosthetic joint infection (PJI) is also expected to rise. While previous studies have explored differences in postoperative outcomes between general and spinal anesthesia, there is limited data on the use of regional blocks in patients undergoing revision joint replacement for PJI. This study evaluated the postoperative outcomes of patients undergoing revision TJA for PJI using regional blocks.

METHODS: Data from 518 patients was retrospectively collected. Patients included in the study had undergone revision TJA due to PJI from January 2004 – January 2023 at a single institution. Patients undergoing same-day bilateral revisions, above-knee amputations, and aseptic revisions were excluded. Post-operative complications investigated included local complications, postoperative transfusion, wound complication, readmission, sepsis, systemic infection, spinal infection, death, persistent PJI, periprosthetic fracture, and unplanned reoperation. Chi-square analysis was used to compare postoperative complications between procedures that used spinal or general anesthesia with regional blocks and those with spinal or general anesthesia without regional blocks.

RESULTS: Of the 518 patients who underwent revision TJA, 63 (12.2%) utilized a regional block. After surgery, 12.7% (n=8) of regional block patients and 23.5% (n=107) of without regional block patients experienced persistent PJI (p=0.076). No significant difference in wound complication (p=0.333), readmission (p=0.998), reoperation (p=0.783), and death (p=0.588) were found between those with and without regional block use. Sepsis (p=0.224), systemic infection (p=0.220), and spinal infection (p=0.998) rates within one year following revision TJA for PJI surgery were comparable between the two groups. There were no local infections at the block site. A subanalysis comparing spinal and general anesthesia demonstrated comparable persistent PJI postoperatively and complication rates, however spinal anesthesia use was associated with shorter length of stay (p=0.003) and lower transfusion rates (p=0.002). DISCUSSION AND CONCLUSION:

The results of this study suggest that the use of regional block is not associated with an increased probability of postoperative persistent PJI, local wound complication, reoperation, spinal/systemic/other infections, death, or reoperation. Surgeons can comfortably choose regional block as a safe option for revision surgery due to PJI. Consistent with previous research, patients who received spinal anesthesia had shorter hospital stays and lower transfusion rates

anesthesia.

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