Total Joint Arthroplasty Complications in Solid Organ Transplant Patients

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INTRODUCTION: Patients with solid organ transplant (SOT) are at increased risk for complications following total joint arthroplasty (TJA). This study reports on medical and surgical complications in patients with a history of SOT who subsequently underwent primary TJA.

METHODS: Retrospective review of all patients with SOT who underwent primary TJA at a single institution from 2013-2023. SOTs included renal (RT), liver (LiT), heart (HT) and lung (LuT). Post-operative complications including mortality, reoperation, periprosthetic joint infection (PJI), or unplanned readmissions were identified.Fisher's exact test was used to compare unplanned 90-day readmissions, two-year mortality, and PJI between groups.

RESULTS: In total, 79 patients with 99 TJAs (35 knee and 64 hip) were included (22 RT, 37 LiT, 8 HT, and 12 LuT). Mean age was 61.5±12.8 and 39.2% female, with mean follow-up of 1.7±2.5years. There were no significant differences in age or gender between groups ($p>0.05$). Overall two-year mortality rate was 8.9% (7/79); ninety-day mortality rate was 0% (0/79). Two-year mortality was 25% in LuT, 25% in HT, 2.7% in LiT, and 4.5% in RT ($p<0.05$). Four patients underwent revision surgery for any cause (1/22 RT, 2/37 LiT, 0/8 HT, 1/12 LuT), including 3 for instability (2 hip, 1 knee). Fifteen percent had unplanned readmissions within ninety days following TJA (4/22 RT, 6/37 LiT, 1/8 HL, 1/12 LuT), with no significant difference by transplant type ($p>0.05$). Approximately 1.3% of patients developed PJI (0/22 RT, 1/37 LiT, 0/8 HT, 0/12 LuT), with no significant difference by transplant type ($p>0.05$).

DISCUSSION AND CONCLUSION: The findings of this study show that certain SOT groups, LuT and HT, are at higher risk of mortality following TJA than others. These findings are important for patient selection and education, as they show all transplants patients are not at equal risk for mortality. The difference in two-year mortality rates is likely attributed to the risk profiles of the transplants themselves. The overall rate for re-operation, PJI, and 90-day unplanned readmission was found to be similar to those reported in the literature for non-SOT patients. These findings emphasize the importance of tailored perioperative and postoperative strategies to address the unique risks associated with SOT patients undergoing total joint arthroplasty.