

00348 Laminar Flow Does Not Affect Risk of Prosthetic Joint Infection After Primary Total Knee Replacement in Asian Patients

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Aims: The use of laminar flow was first advocated in 1969 after a reported reduction in post-total hip arthroplasty infections. However, this became contentious in recent literature with several recent prospective trials and retrospective analyses failing to demonstrate a significant risk reduction. We aim to analyse the use of laminar flow and the incidence of prosthetic joint infections (PJI) in Asian patients undergoing total knee replacement (TKR).

Methodology: We reviewed a prospectively collected single-surgeon database to identify patients with knee osteoarthritis who underwent TKR from 2004 to 2014. We included patients who underwent standard cemented posterior-stabilized TKR and excluded revision, traumatic and/or inflammatory cases. The operating theatre (OT) setup in each surgery was identified from the operative records.

The technique and surgical protocol used for all procedures were similar. We routinely used tourniquets perioperatively and inserted drains (removed on either postoperative day 3 or when the drainage was less than 70mL, whichever occurred earlier). Upon discharge, patients were followed up at the outpatient clinics at 2-weeks, 2-months, 6-months, 1-year and 2-years, and were assessed for symptoms and signs and/or the occurrence of PJI at each visit.

Result: Among the 1028 procedures identified, 453 (44.1%) were performed in a laminar flow OT while 575 (55.9%) were performed in a non-laminar flow OT. There were no significant differences between the two groups in terms of age, gender or side of procedure.

The overall incidence of PJI was 0.5% (N = 5). 2 (40%) occurred in a laminar OT while 3 (60%) occurred in a non-laminar OT. This was not statistically significant (p=1.00).

Conclusion: Laminar flow systems constitute a significant portion of the operational and maintenance cost of running the OT. With modern aseptic techniques, patient optimization and use of prophylactic antibiotics, laminar flow does not appear to confer additional risk reduction in PJI.