The Efficacy of Robotic Assisted Thoracic Surgery versus Video Assisted Thoracic Surgery in Early-stage NSCLC: A Systematic Review of Recent Randomised Controlled Trials

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Abstract

Use of robotic-assisted thoracic surgery (RATS) for lung lobectomy for non-small cell lung cancer (NSCLC) has recently increased. This relatively new procedure is often compared to its predecessor, video-assisted thoracic surgery, without any clear advantage.

This study aims to identify randomised controlled trials comparing RATS and VATS usage in NSCLC and to perform a meta-analysis comparing efficacy with regards to perioperative outcomes.

A systematic search of online databases PubMed, Embase and Cochrane Library was conducted, and meta-analysis of eligible studies was performed. Reported results include operation time, hospital stay duration, chest tube duration, conversion-to-open thoracotomy, re-admission rates <90 days and post-operative complications.

Pooled analysis of the three included studies showed no significant difference between RATS and VATS in any of the measured perioperative outcomes; operation time (MD 6.01 95% CI -16.04 to 28.06, p=0.59), chest tube duration (MD 0.00, 95% CI -0.29 to 0.29, p=1.00), total number of lymph node stations dissected (MD 1.91 95% CI -0.11 to 3.74, p=0.06), hospital stay (MD -0.12, 95% CI -1.54 to 1.31, p=0.87), conversion-to-open thoracotomy (RR 0.84 95% CI 0.37 to 1.90, p=0.68), Re-admissions <90 days (RR 0.90 95% CI 0.11 to 7.24, p=0.92), post-operative complication rate (RR 0.86, 95% CI 0.51 to 1.44, p=0.56), post-operative pneumonia (RR 2.26, 95% CI 0.69 to 7.44, p=0.18), and post-operative air leaks (RR 0.99, 95% CI 0.55 to 1.79, p=0.98).

Conclusion and significance: Comparison of recent trials shows RATS has comparable efficacy to VATS in terms of perioperative outcomes. As more trials are published, further evaluation will be needed.

Recent Publications



Biography

Ibikiri Okoye is a final year medical student at the University of Warwick. She has a BSc (Hons) in Biomedical Sciences.

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Notes/Comments: