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

Ibikiri Okoye

United Lincolnshire Hospitals NHS Trust, Lincoln

Introduction: 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

Objectives: 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.

Methods: 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.

Results: 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: 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.

DOI: 10.21467/abstracts.8.2 ISBN: 978-81-989164-1-9 (eBook)