AB130. SOH22ABS114. Intra-operative nerve monitoring and recurrent laryngeal nerve injury during thyroid surgery: a Bayesian network meta-analysis of prospective studies

Eoin Cleere[1], Matthew Davey[2], Aoife Lowery[3], Michael Kerin[3]

[1]Department of Otolaryngology, Galway University Hospital, Galway, Ireland; [2]The Lambe Institute for Translational Research, Galway University Hospital, Galway, Ireland; [3]Department of Breast and Endocrine Surgery, Galway University Hospital, Galway, Ireland

Background: Recurrent laryngeal nerve (RLN) injury leading to vocal cord palsy is a dreaded complication of thyroid surgery occurring in 1–5% of cases. The main approaches to RLN preservation are: RLN visualization without nerve monitoring (No-NM), intermittent intraoperative nerve monitoring (I-IONM) and continuous intraoperative nerve monitoring (C-IONM). At present it is unclear which of these strategies should be the preferred method of RLN preservation. We performed a systematic review and network meta-analysis (NMA) to define the optimal method of RLN preservation during thyroid surgery using only the highest levels of available evidence.

Methods: A systematic review and NMA was performed according to PRISMA guidelines. NMA was conducted using R packages netmeta. Only prospective studies were included.

Results: Eighteen studies met inclusion and exclusion criteria from 973 studies identified, including 22,080 patients and 40,642 nerves at risk (NAR). The mean age was 53.1 years (range, 28.2–57.5 years) and 15,708 (71.9%) of patients underwent total thyroidectomy. Combining direct and indirect evidence identified C-IONM as having the lowest incidence of RLN injury following thyroid surgery [C-IONM *vs.* I-IONM, odds ratio (OR) 0.24, 95% CrI: 0.02–1.60; C-IONM *vs.* No-NM, OR 0.19, 95% CrI: 0.02–1.30]. I-IONM demonstrated a protective effect over No-NM (OR 0.79, 95% CrI: 0.63–1.02).

Conclusions: This NMA incorporating only the highest level of available evidence demonstrated a benefit of IONM (both C-IONM and I-IONM) in reducing the incidence of RLN injury following thyroid surgery. C-IONM use may confer additional benefit over I-IONM but further suitably powered randomized trials are necessary to support this finding.

Keywords: Lobectomy; nerve monitoring; recurrent laryngeal nerve (RLN); thyroidectomy; vocal cord palsy

Acknowledgments

Funding: None.

Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

doi: 10.21037/map-22-ab130

Cite this abstract as: Cleere E, Davey M, Lowery A, Kerin M. AB130. SOH22ABS114. Intra-operative nerve monitoring and recurrent laryngeal nerve injury during thyroid surgery: a Bayesian network meta-analysis of prospective studies. Mesentery Peritoneum 2022;6:AB130.