

How should clinical outcomes factor into purchasing decisions about Macintosh-style laryngoscopes?

Sita Saunders¹, Ubong Silas¹, Rhodri Saunders¹, Alistair McNarry²

MT14

(1) Coreva Scientific GmbH & Co. KG; (2) Department of Anaesthesia, NHS Lothian

Objective

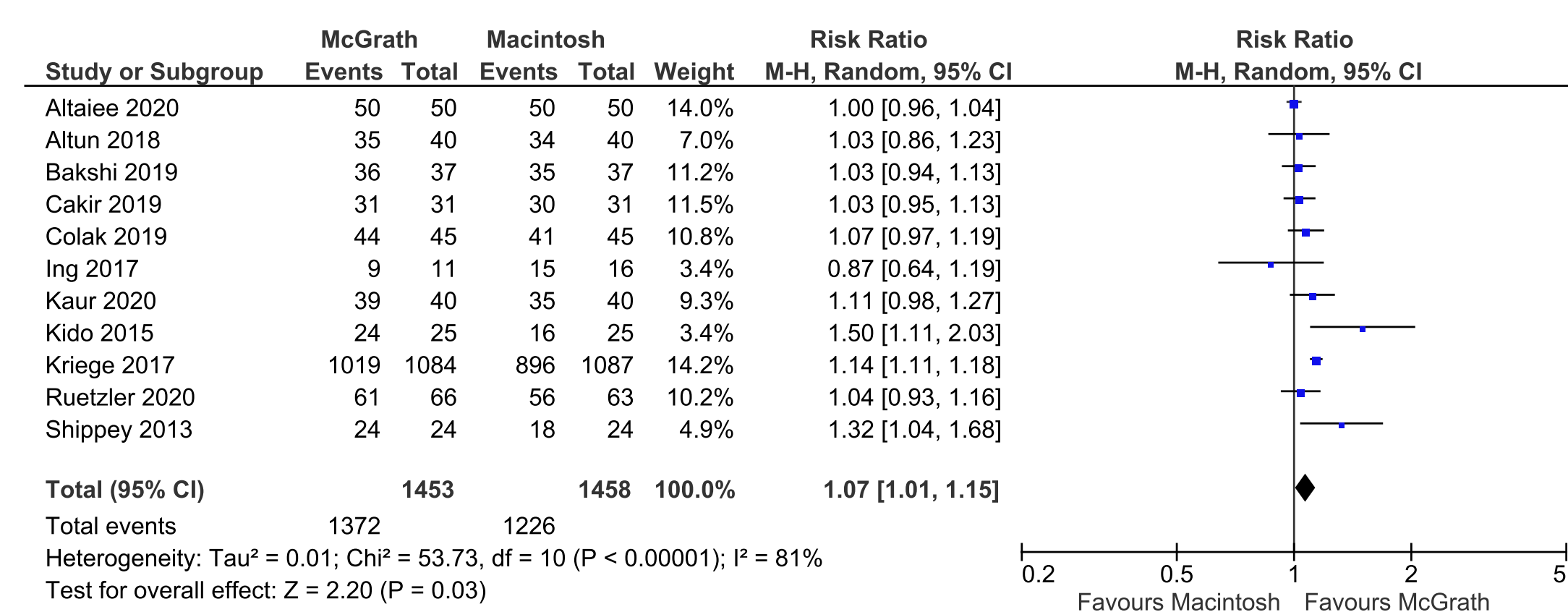
- Intubation with a Macintosh blade is a routine procedure in perioperative care and evidence demonstrates that video laryngoscopy (VL) improves intubation success versus direct laryngoscopy (DL).¹
- We wish to understand the type of health-economic analysis required to inform purchasing decisions between the two common VL devices, C-MAC* and McGrath MAC*.

Conclusions

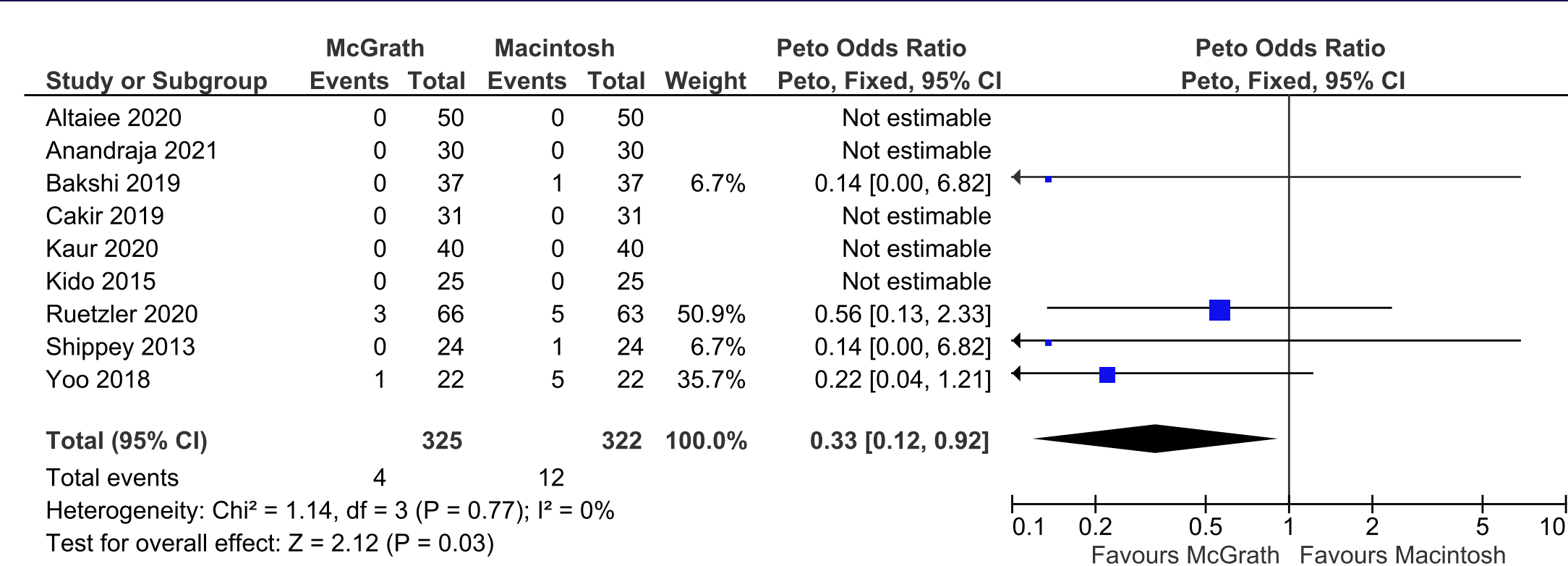
- No difference in clinical efficacy was determined between McGrath MAC* and C-MAC* although their superiority to DL was confirmed.
- A cost-minimization analysis is likely sufficient to inform purchasing decisions.
- The purchase cost could present a key factor when choosing a device without compromising patient safety.

First-pass success

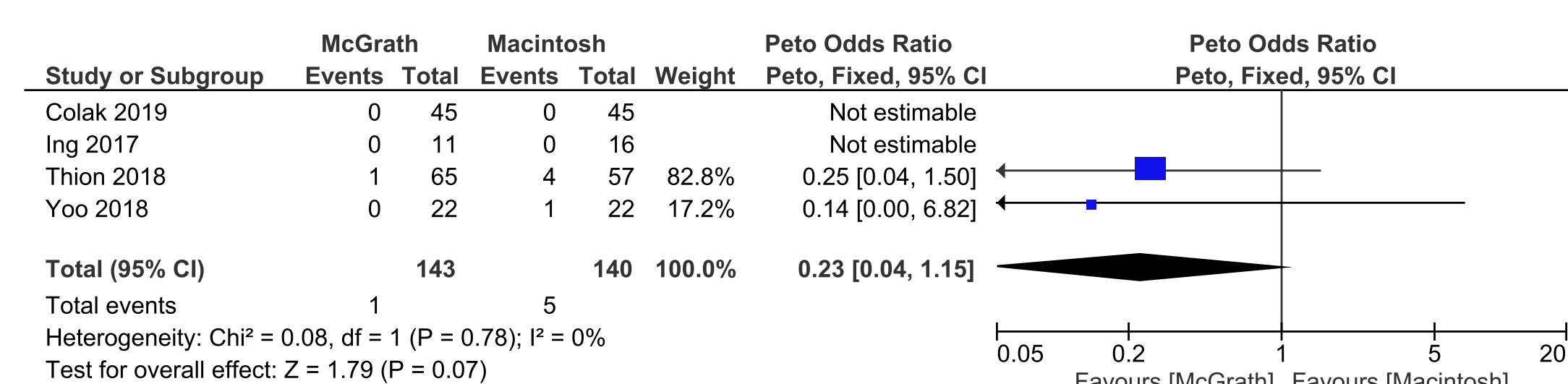
McGrath Mac* VL vs. Macintosh* DL



Failed intubation



Esophageal intubation



C-MAC* VL vs. Macintosh* DL

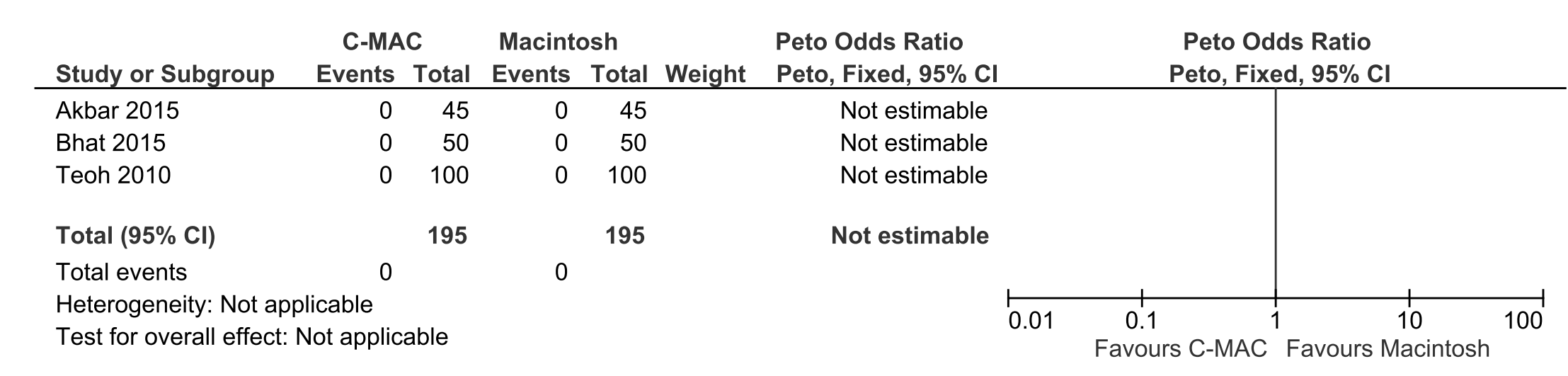
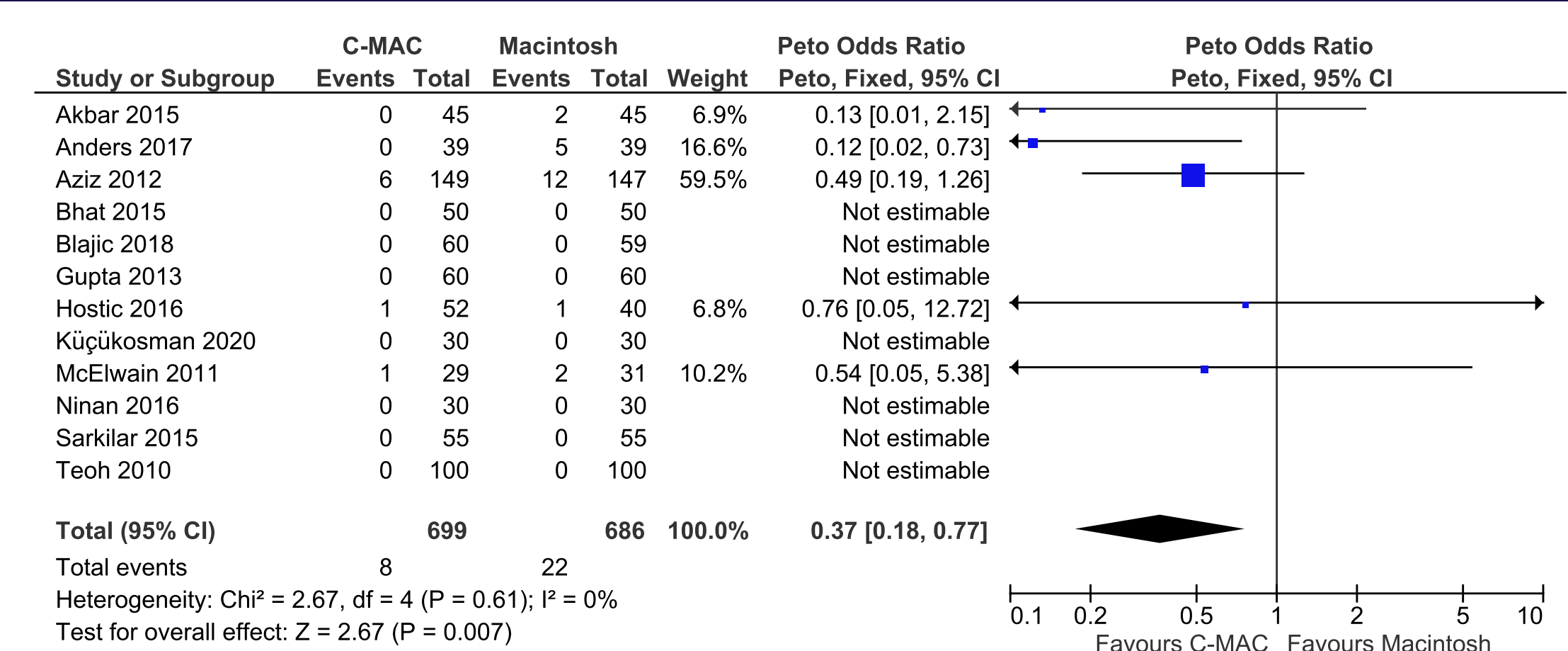
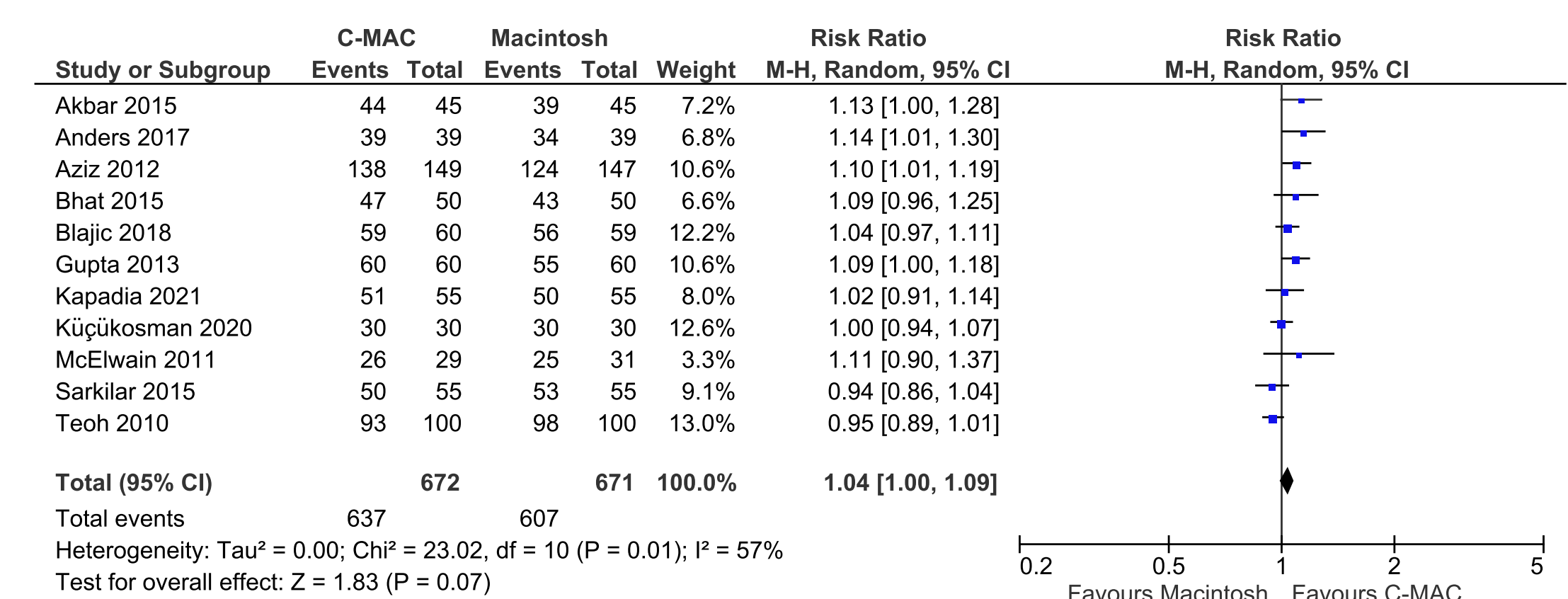


Figure 1 Evaluation of clinical outcomes for Macintosh* DL compared to McGrath MAC* VL and C-MAC* VL respectively.

Methodology

- We reviewed the studies included in a 2022 Cochrane review comparing VL versus DL.¹
- Only studies that compared McGrath MAC* VL or C-MAC* VL with Macintosh* DL in perioperative care were selected.
- Outcomes assessed were:
 - First-pass success
 - Failed intubation
 - Esophageal intubation
- Meta-analyses were performed using RevMan 5.4.
- Failed and esophageal intubations as rare events were assessed using the Peto odds ratio (OR).
- The risk ratio (RR) was used for first-pass success.
- The Metafor R package for comparing estimates of independent meta-analyses was used to assess whether the outcomes for McGrath MAC* and C-MAC* were statistically different.

Results

- First-pass success was significantly improved using either VL in comparison to DL:
 - McGrath MAC*: RR 1.07 [1.01, 1.15]
 - C-MAC*: RR 1.04 [1.00, 1.09]
- Failed intubations were significantly decreased:
 - McGrath MAC*: OR 0.33 [0.12, 0.92]
 - C-MAC*: OR 0.37 [0.18, 0.77]
- There was no significant difference between meta-analyses for McGrath MAC* and C-MAC* for both outcomes.
- A non-significant reduction for esophageal intubation was identified for McGrath MAC* with OR 0.23 [0.04, 1.15], however, no overall effect could be estimated for C-MAC*.

*Risk statement

For trained personnel only. For specific indications and instructions for use, please refer to the product manual.

Disclosures

This research was funded by Medtronic™.

US and SS are employees and RS is the owner of Coreva Scientific, who received consultancy fees for this research.

AM is a consultant anaesthetist in Edinburgh and has received honoraria from Medtronic™ for lectures on videolaryngoscopy.

References

1. Hansel, J., Rogers, A. M., Lewis, S. R., Cook, T. M., & Smith, A. F. (2022). Videolaryngoscopy versus direct laryngoscopy for adults undergoing tracheal intubation. The Cochrane database of systematic reviews, 4(4), CD011136.

Reference number: US-RE-2200583