

Tracheal intubation in operating room in adult patients at risk for cervical spinal cord injury: a systematic review and meta-analysis of randomized trials.

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Argomento: Neuroanestesia e neuroranimazione

Background Tracheal intubation in patients with known or suspected cervical spine instability is considered at risk for secondary spinal cord injury. We performed a systematic review and meta-analysis of randomized controlled trials (RCTs) comparing techniques to perform tracheal intubation in operating room in adult patients at risk for secondary cervical spinal cord injury.

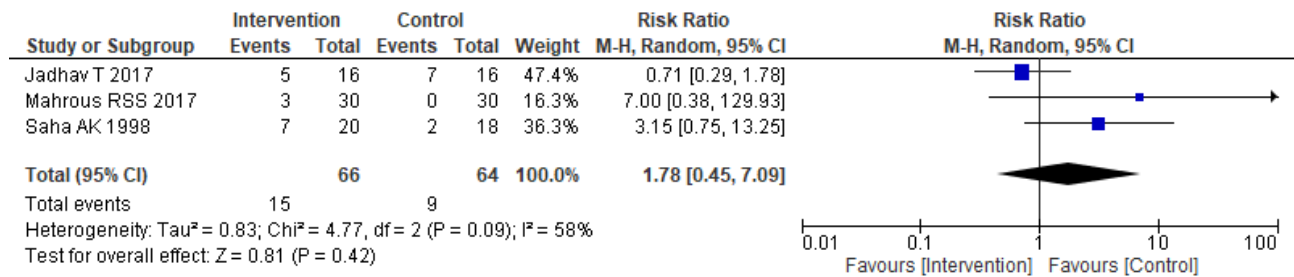
Methods Through several databases, we identified RCTs: a) comparing different tracheal intubation techniques; b) enrolling adult patients at risk for cervical spine cord injury; c) published in the last 20 years. We excluded studies performed outside the operating room and simulation studies. The primary outcome was first-attempt failure rate; secondary outcomes were time to successful intubation and procedure complications.

Results We identified 16 RCTs enrolling 1874 patients. In three RCTs an “awake” approach was used: fiberoptic bronchoscopy (FOB) was similar than comparators but required more time. No study compared awake versus non-awake techniques. In remaining 13 RCTs, intubation was performed under general anesthesia: first-attempt failure rate was similar when comparing direct laryngoscopy versus other techniques (3 RCTs) and videolaryngoscopy versus other techniques (3 RCTs). Videolaryngoscopy was faster than other techniques. Postoperative neurological complications rate was 0.5% (no significant difference among techniques). No life-threatening adverse event was reported, while mild local complications were common (incidence rate: 20%).

Conclusions No single technique performed significantly better than others in terms of first attempt failure rate and procedural complications.

Figure 1: meta-analysis of awake techniques (intervention: other techniques; control: fiberoptic bronchoscopy)

A. First-attempt intubation failure rate



B. Time to intubation

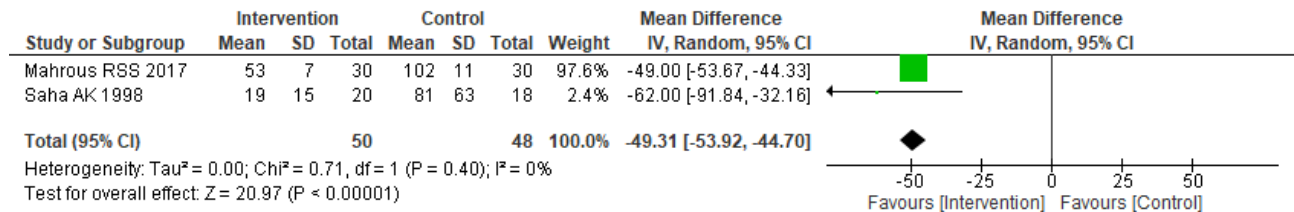
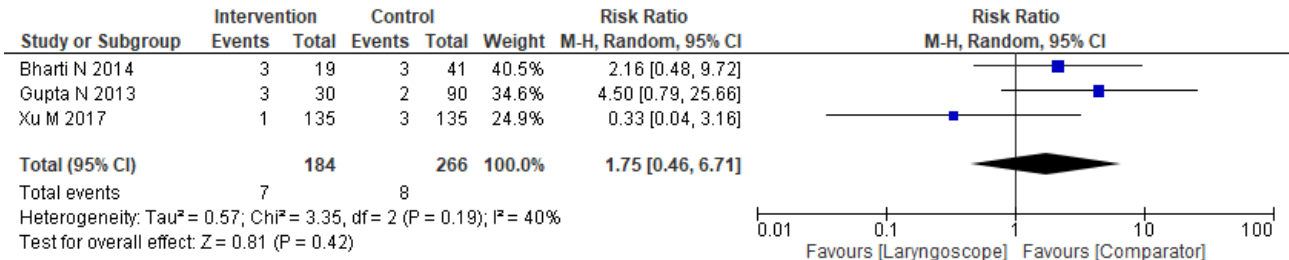


Figure 2: meta-analysis of Macintosh (intervention) vs control

A. First-attempt intubation failure rate



B. Time to intubation

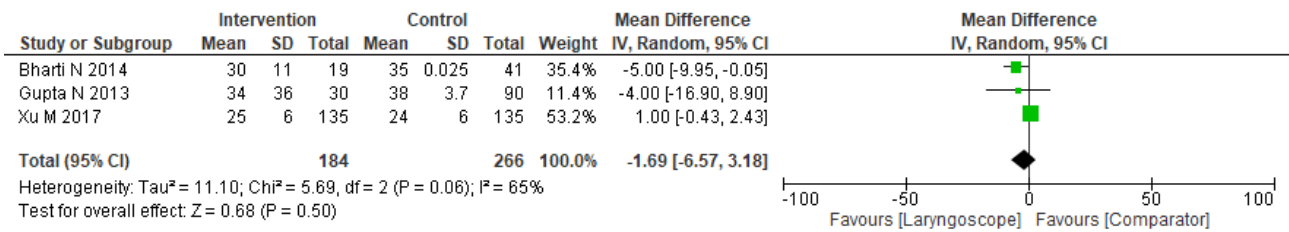
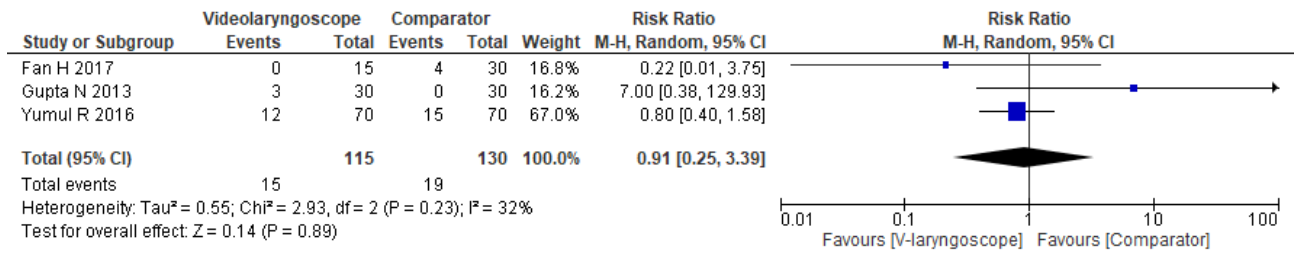


Figure 3: meta-analysis of videolaryngoscopy (intervention) vs control

A. First-attempt intubation failure rate



B. Time to intubation

