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# Erector spinae plane block versus intercostal nerve block in thoracoscopic surgery : An updated meta-analysis of randomized trials

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## WHY THIS MATTERS

Both blocks are used for analgesia after Video-assisted thoracoscopic surgery (VATS) and it is unclear which is better. A 2023 meta-analysis of four trials hinted that ESPB reduced late postoperative pain with substantial heterogeneity; larger trials have appeared since.

## METHODS

**1.** Searched PubMed, Embase, CENTRAL and Web of Science to March 2026 for randomized trials of ESPB versus ICNB in adults having thoracoscopic surgery.

**2.** Two reviewers screened, extracted data and rated risk of bias (RoB 2). Registered on PROSPERO, reported per PRISMA 2020.

**3.** Pooled six trials (403 patients) with random-effects models, 95% prediction intervals and leave-one-out sensitivity analysis.

## RESULTS

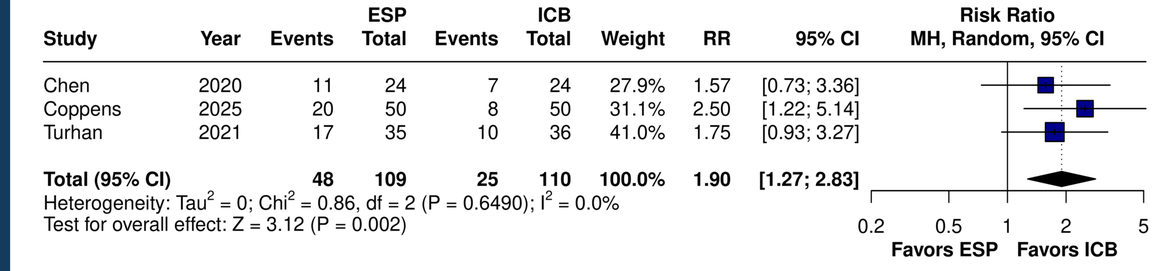
- **24-h opioid use** +1.99 MME with ESPB (0.19 to 3.80), $I^2$ = 61%
- **Pain** no difference at any timepoint (on movement at 24 h: 0.02, −0.40 to 0.45)
- **Rescue analgesia** RR 1.90 (1.27 to 2.83), $I^2$ = 0%
- **Risk of bias**: 2 low, 3 some concerns, 1 high

## DISCUSSION

Two MME is not a clinically meaningful difference, and it does not survive sensitivity analysis. ICNB is placed by the surgeon under direct vision, with no extra equipment or staff.

# Equal pain relief - but patients given ESPB needed rescue analgesia twice as often

Six randomized trials · 403 adults after video-assisted thoracoscopic surgery




Rescue analgesia: risk ratio >1 favors intercostal nerve block. Three trials, 219 patients, $I^2$ = 0%.

**Scan for the registered protocol**

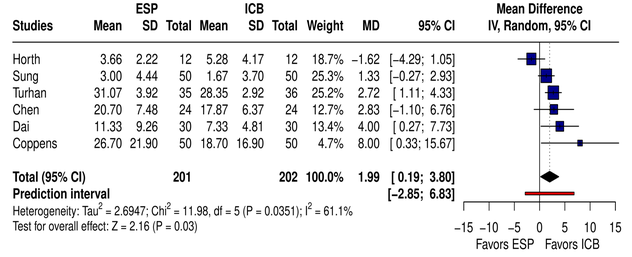
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## THE DETAILS

### Is the opioid difference real?




- Prediction interval −2.85 to 6.83 crosses zero
- Significance lost when any of five trials is dropped
- $I^2$ = 61%, and 2 MME is clinically negligible

### All outcomes

**Table 2.** Pooled outcomes, erector spinae plane block versus intercostal nerve block.

| Outcome | Trials (patients) | Effect estimate (95% CI) | $I^2$ (%) |
|---|---|---|---|
| 24-h opioid consumption, MME (primary) | 6 (403) | 1.99 (0.19 to 3.80) | 61 |
| 48-h opioid consumption, MME | 3 (172) | 0.62 (−0.84 to 2.09) | 0 |
| Pain at rest, 24 h | 3 (155) | 0.84 (0.45 to 1.24) | 0 |
| Pain at rest, 48 h | 3 (145) | 0.01 (−0.28 to 0.29) | 0 |
| Pain on movement, 24 h | 4 (255) | 0.02 (−0.40 to 0.45) | 0 |
| Pain on movement, 48 h | 4 (245) | −0.10 (−0.51 to 0.30) | 7 |
| Rescue analgesia required | 3 (219) | 1.90 (1.27 to 2.83) | 0 |

Continuous outcomes are mean differences; rescue analgesia is a risk ratio. Positive values and risk ratios >1 favour intercostal nerve block. Random-effects models, restricted maximum likelihood. $I^2$, proportion of variability across trials attributable to heterogeneity rather than chance. MME, morphine milligram equivalents; CI, confidence interval.

### Limitations

- 403 patients in total, across small trials
- ESPB technique varied; one trial used a continuous catheter
- Rescue analgesia reported by only three trials
- Hartung-Knapp correction not applied

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