



Effectiveness of Erector Spinae Plane Block (ESPB) for Idiopathic Scoliosis Surgery in Pediatric Patients: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

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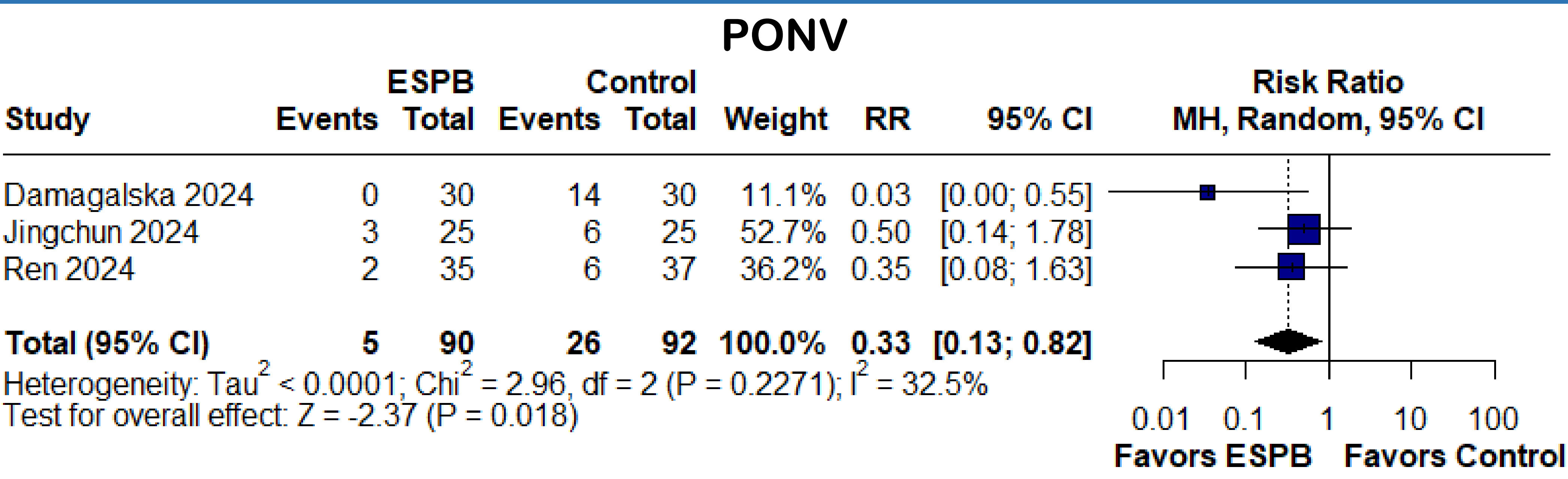
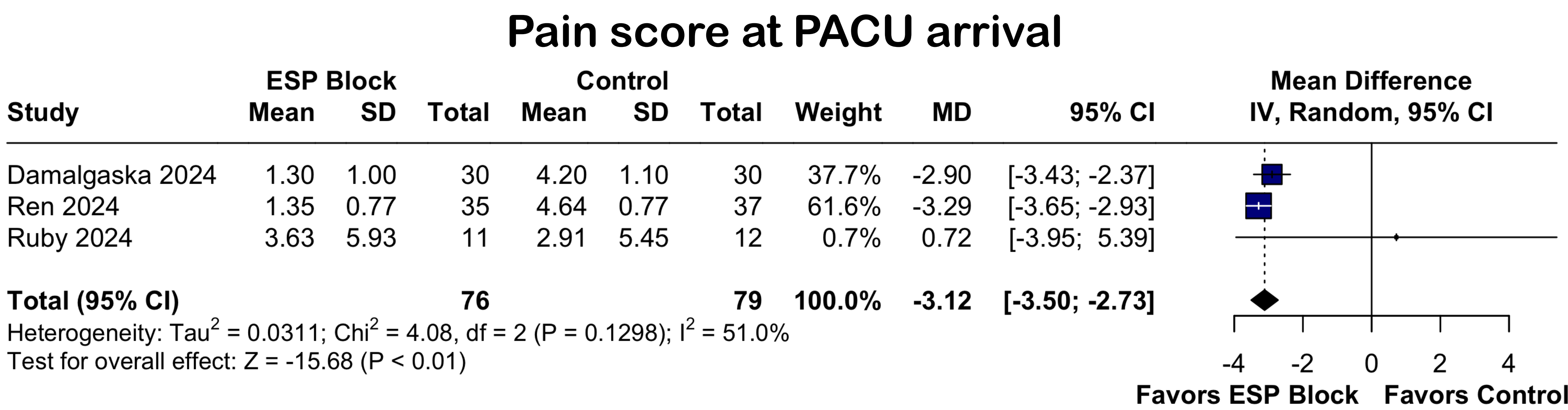
Introduction

- The ESPB has become a widely used regional anesthesia technique due to its simplicity, safety, and versatility.
- Spinal surgeries are often associated with significant postoperative pain, which can delay recovery and increase opioid requirements.
- Multimodal analgesia, including regional blocks such as ESPB, plays an important role in optimizing pain control, enhancing recovery, and minimizing opioid use in pediatric patients.
- We conduct a meta-analysis to evaluate the effect of ESPB for idiopathic scoliosis surgery in pediatric patients.

Methods

- PubMed, Cochrane and Embase were systematically searched for randomized control trials comparing ESPB to No block or Sham block.
- Outcomes analyzed: opioid consumption, pain scores and PONV.
- Analyses used R4.4.1 with a random-effects model, heterogeneity with Cochran's Q and I².

ESPB may decrease pain score at PACU arrival and PONV in pediatric patients undergoing idiopathic scoliosis surgery!



Results

- 5 RCTs with 249 patients were included; 123 (49%) received the ESP block.
- ESPB may reduce Pain score at PACU arrival and PONV.
- No statistical difference was seen on opioid consumption, static pain score at 12h and 24h, and dynamic pain score at 24h.

Conclusion

- Variations in fascial plane anatomy and elasticity in pediatric patients may lead to inconsistent anesthetic spread, explaining the variability in pain scores and opioid consumption.
- Pain reduction at PACU arrival is important as it can reduce the need for rescue opioids, lower the risk of postoperative nausea and vomiting, and enhance patient comfort.
- PONV are among the most distressing postoperative complications, especially in children, as they can impair comfort, prolong PACU stay, increase the risk of dehydration, delay oral intake, and decrease patient and caregiver satisfaction.



References available via QR code.



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