

Uniport Versus Multiport Epidural Catheters for Laboring Patients: A Systematic Review and Meta-Analysis.

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BACKGROUND

Epidural analgesia is widely used for labor. It involves two catheter types: uniport (one end hole) and multiport (three lateral holes). Flexible catheters lower intravenous cannulation and paresthesia risks, albeit sometimes complicating placement. Studies on uniport versus multiport catheters yield mixed results. This meta-analysis compares uniport versus multiport epidural catheters for laboring patients.

METHODS

We conducted a systematic review across PubMed, Embase, Scopus, and Cochrane Library, comparing Uniport and Multiport epidural catheters for labor analgesia, using Rstudio 4.2.3 for statistical analysis. Heterogeneity was evaluated with Cochran Q and I2, bias with RoB-2 and ROBINS-I tools. Publication bias was checked via funnel plot and Egger's test, with a leave-one-out approach to verify result robustness.

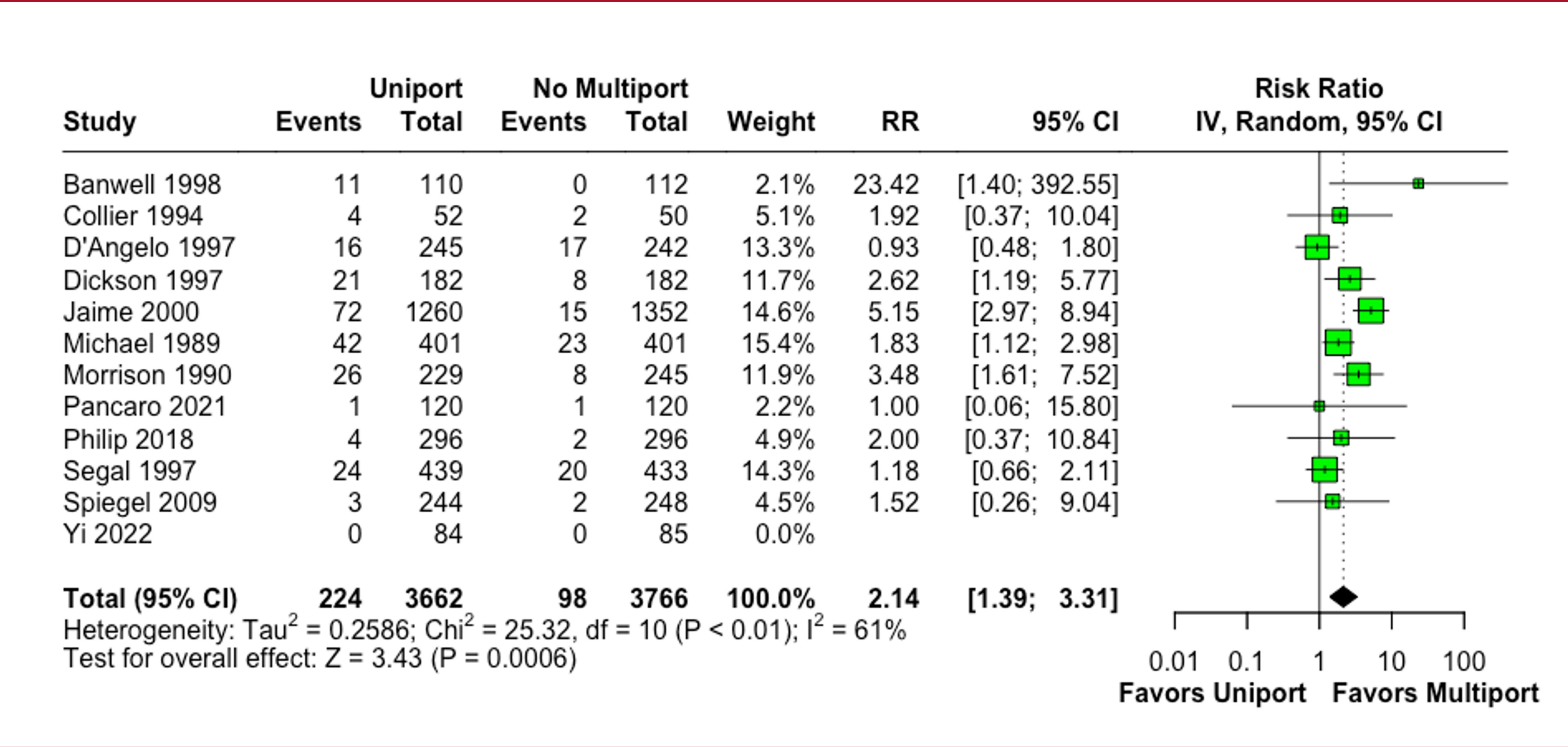


Conclusion

Uniport catheters might decrease the incidence of accidental intravascular catheter placement compared to multiport catheters, potentially due to the former's more pliable tip.

This flexibility could facilitate deflection away from vascular structures.

Such design distinctions, rather than the number of ports, may significantly influence the disparate results in our meta-analysis.



Intravascular placement



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RESULTS

Ten randomized trials and two observational studies, comprising 7428 patients, were included. We had 3662 (49%) patients assigned to the multiport group. Despite the observational studies, baseline characteristics were similar between groups. There was a statistically significant difference regarding intravascular catheter placement favoring uniport catheter (RR 2.14; 95% CI 1.39 to 3.31; p=0.0006, 12 studies, 7428 patients). There were no statistically significant differences between groups in the other outcomes.

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