

Combination of short and long-acting LA vs. long-acting LA for brachial plexus block: Systematic review and meta-analysis of RCTs

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INTRODUCTION

- Clinicians often combine short-acting and long-acting local anesthetics (LA), expecting a faster onset of blockade.
- A critical appraisal of the evidence of the benefits of LA combinations has not been performed.
- Primary objective: Compare mixtures of short and long-acting LAs vs. single long-acting LA for brachial plexus blocks in terms of onset, duration of block, and duration of analgesia.

METHODS

- Systematic review of literature performed primarily in Embase, PubMed and Cochrane databases.(Timeline: Inception to February 2023)
- 10 RCTs included in meta-analysis of pooled data

RESULTS

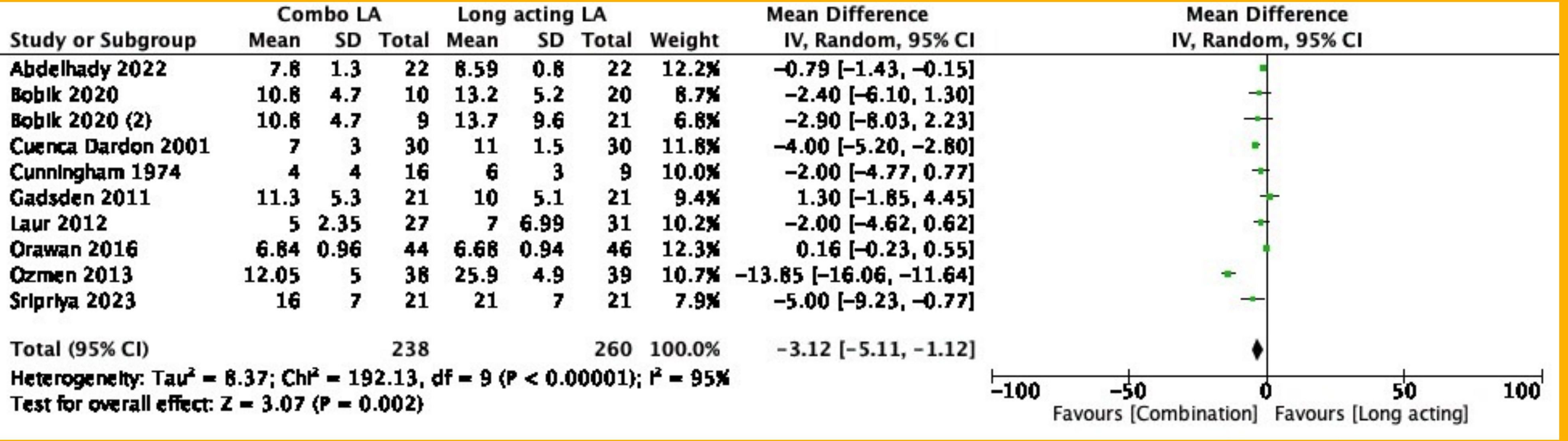
- Compared to single long-acting LA, combining LAs reduced the sensory onset time by around 3 minutes. [MD (95% CI) - 3.1 min (-5.1; -1.1)]
- No difference in onset time for motor blockade [MD (95% CI): -0.8(-2.4, 0.9) min
- Combinations of LAs decreased duration of sensory block [MD (95% CI): -2.39 (-3.79, -0.99)] and motor block [MD (95% CI):-2.53 (-4.13, -0.94)].
- No difference in the duration of analgesia [MD (95% CI): -1.51 (3.66, 0.64) or the need to convert to GA [Odds ratio (95% CI): 0.47, (0.08, 2.70)]

DISCUSSION

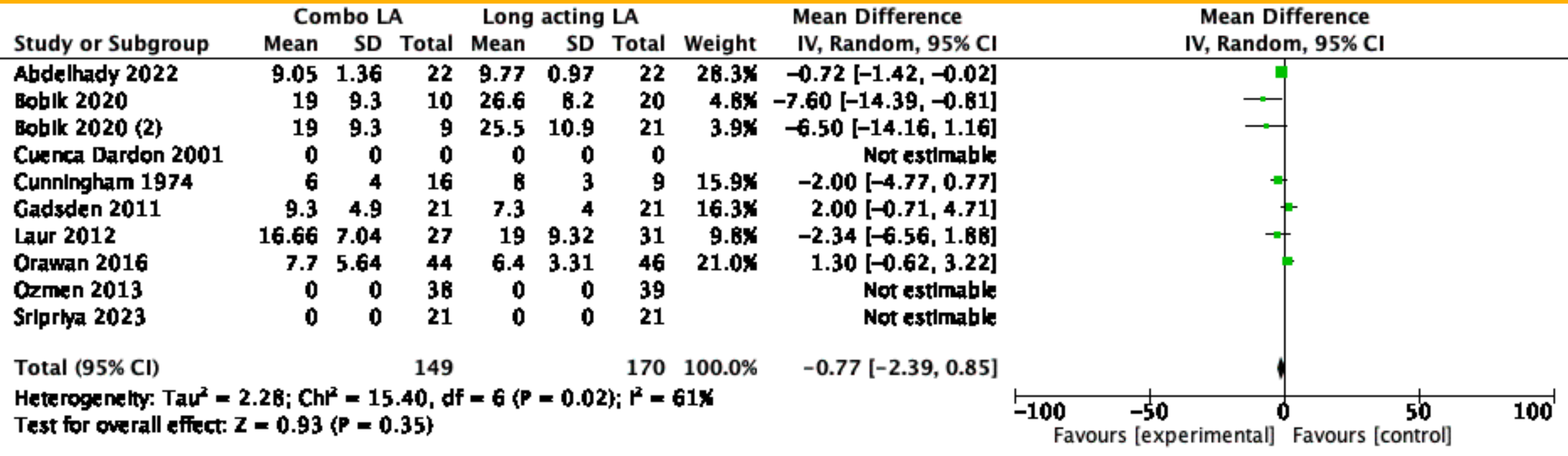
- There is low to moderate quality of evidence that LA combinations provide only a marginal benefit of approximately 3 minutes for quicker sensory onset time.
- No significant effect on the motor block onset, duration of analgesia, or block duration.
- Evidence from future randomized clinical trials may change our conclusions.

Combination of short and long-acting LA provide approximately 3 minutes faster sensory onset time for brachial plexus block compared to long-acting LA

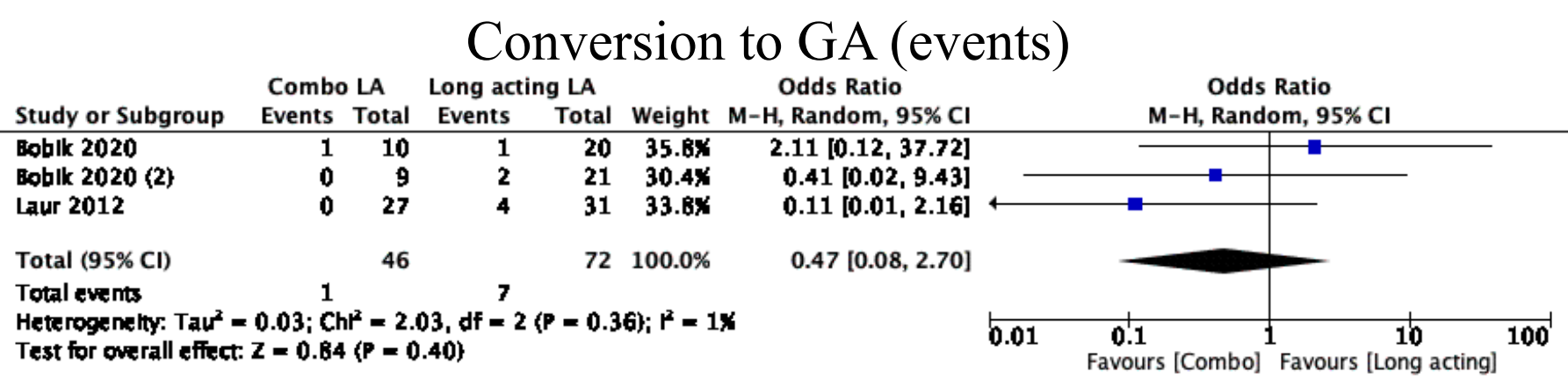
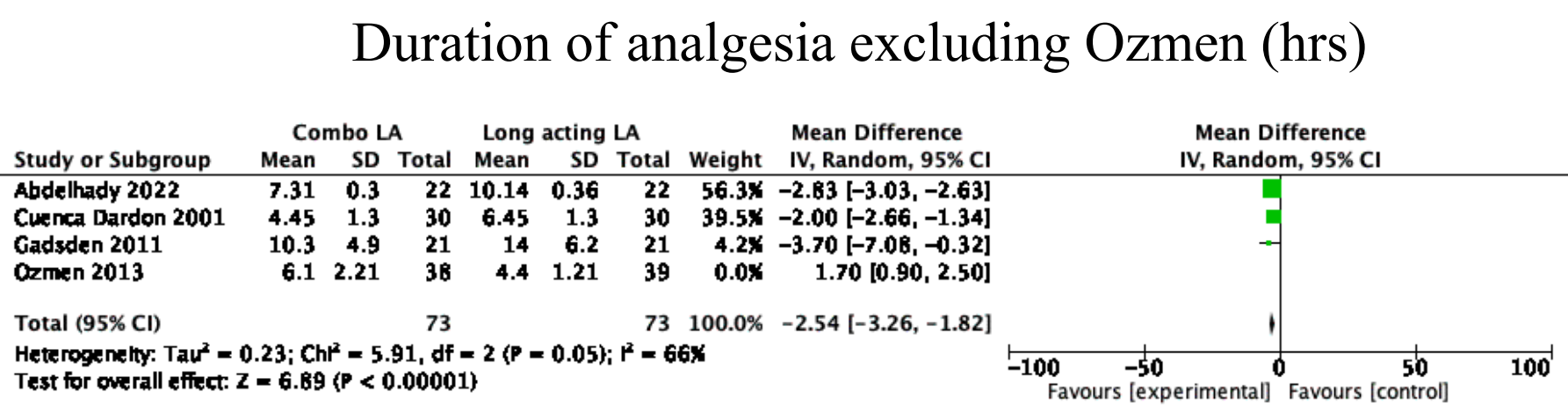
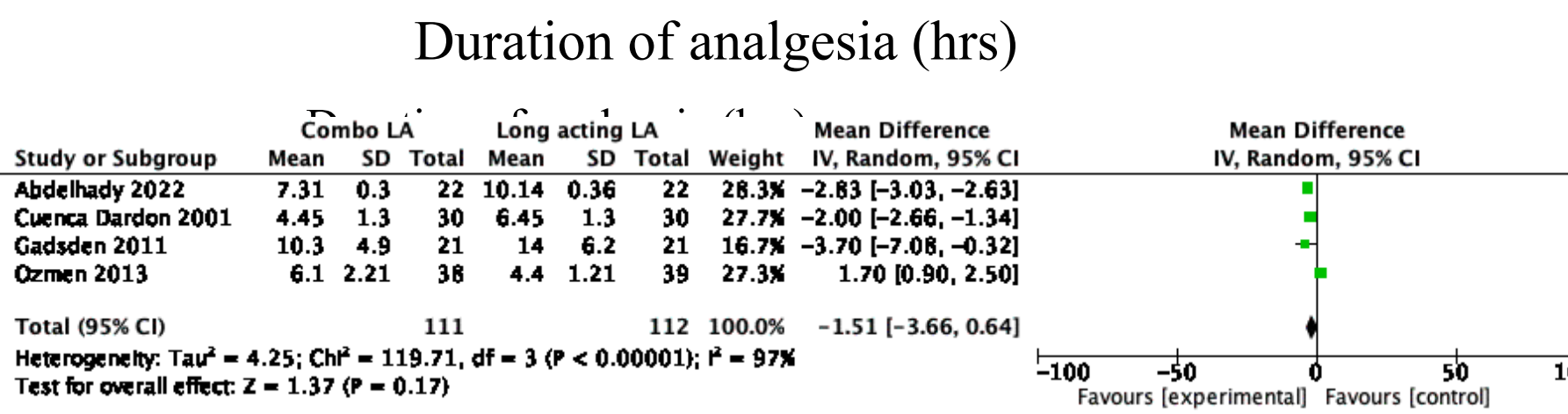
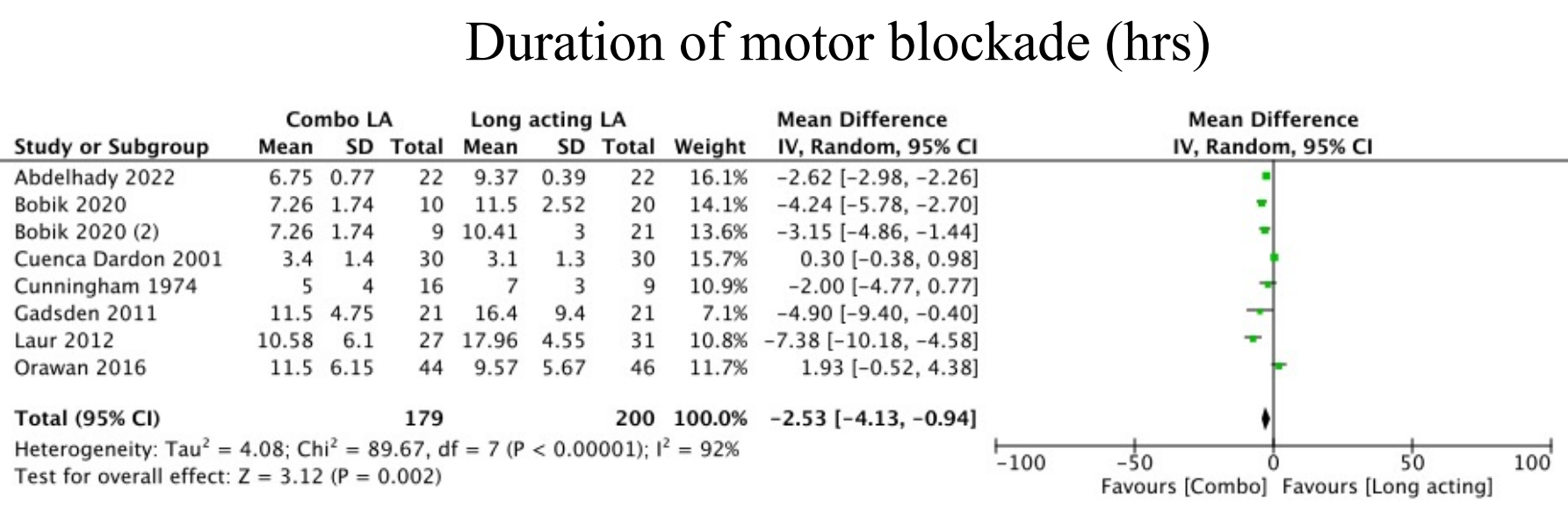
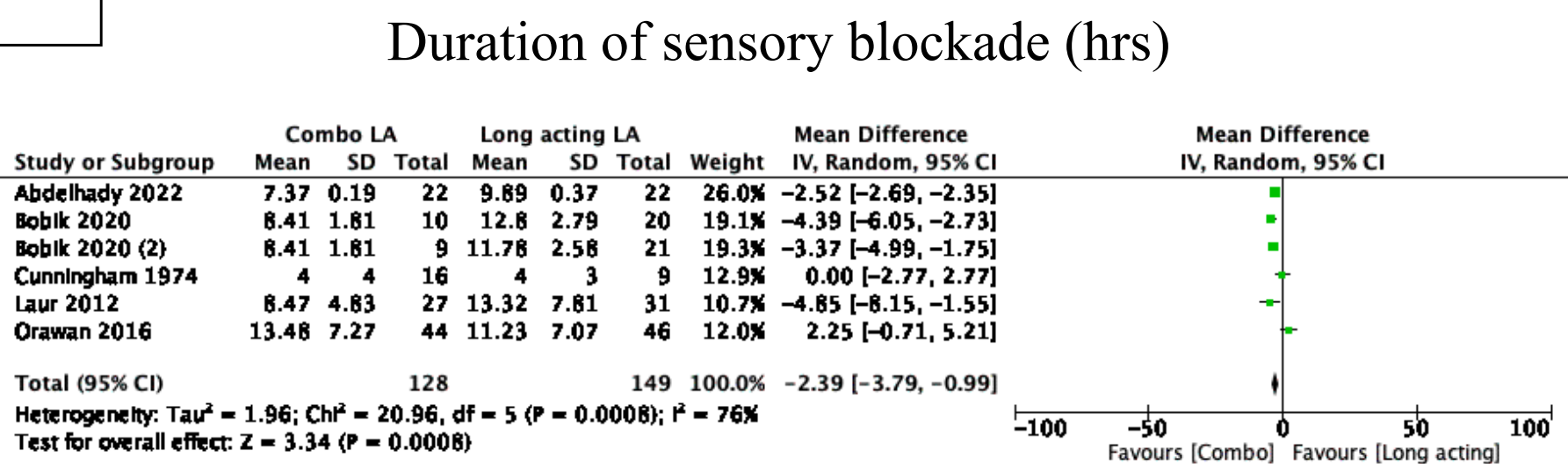
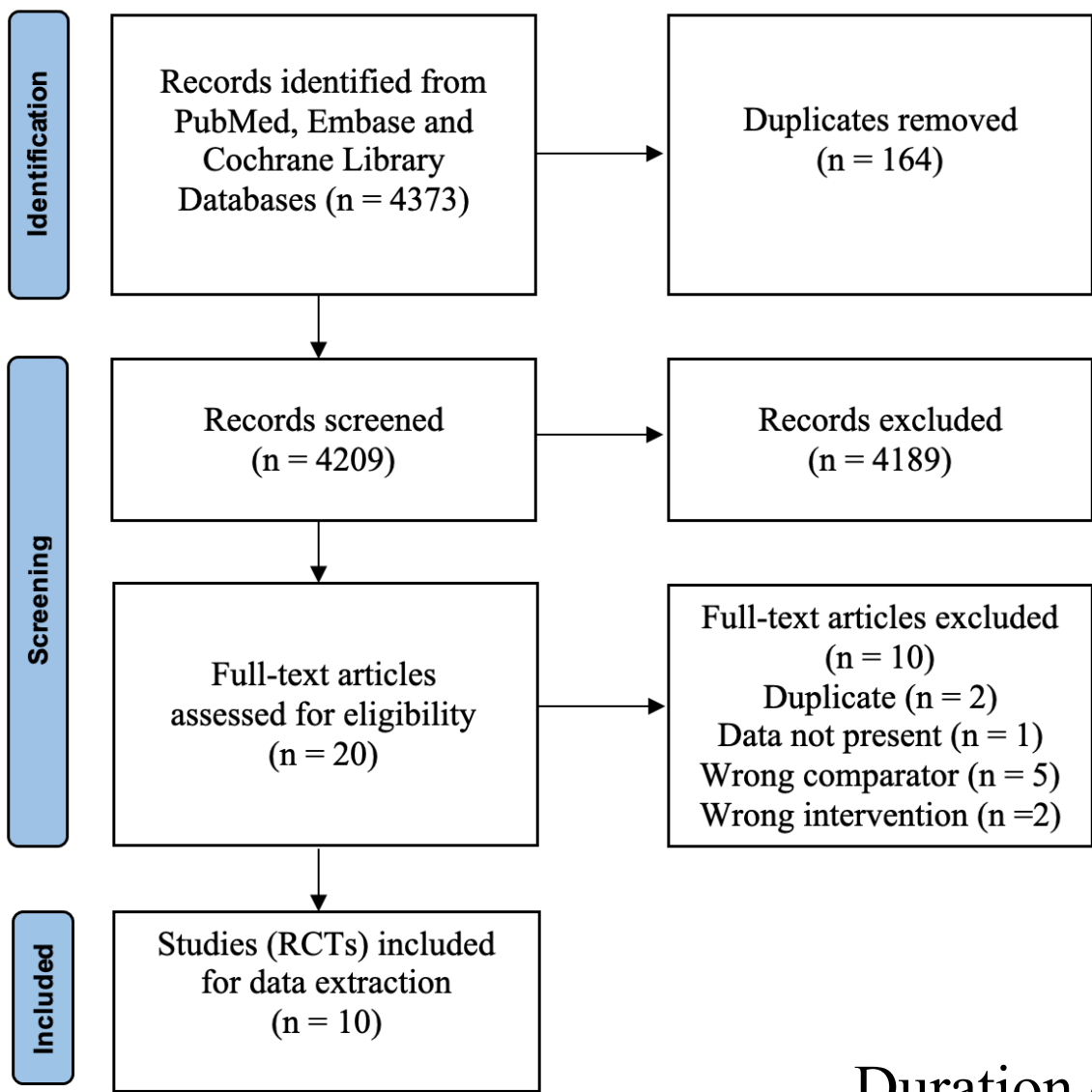
Onset time of sensory blockade (min)



Onset time of motor blockade (min)



Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram



REFERENCES

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