Impact of local infiltration analgesia on quality of recovery after anterior THR: a randomised, triple-blind, placebo-controlled trial

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Introduction

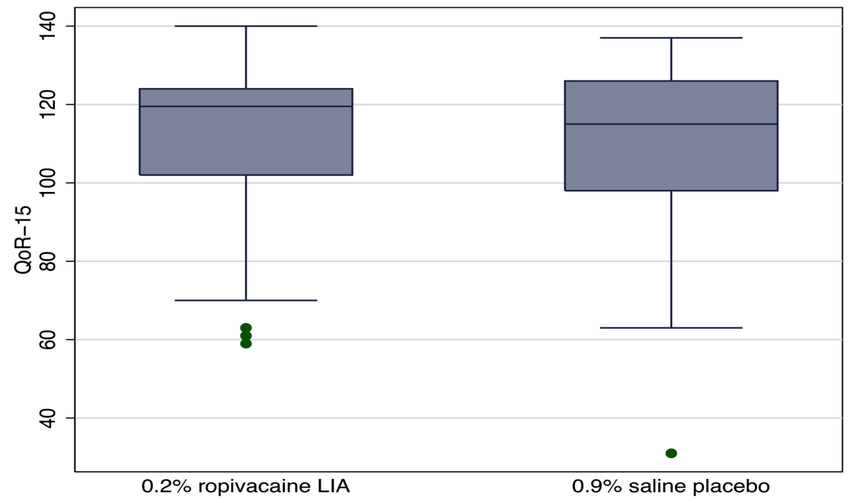
The number of total hip replacements (THR) performed each year is projected to increase from 1.8 million in 2015 to 2.8 million in 2050[1]. Local infiltration analgesia (LIA) is commonly used in anterior THR because it is simple to perform with few side-effects, however evidence of its efficacy is not convincing[2]. We hypothesised that LIA with 0.2% ropivacaine when compared with injection of 0.9% saline placebo would improve patient quality of recovery on postoperative day (POD) 1, measured by the Quality of Recovery-15 (QoR-15) score.

Methods

Patients scheduled to have a primary unilateral anterior THR with a single surgeon in a tertiary level metropolitan Australian hospital were randomised to receive LIA with either 2.5 mL/kg of 0.2% ropivacaine or 0.9% saline as placebo. Patients, clinical and study personnel were blinded to group allocation. Perioperative care was standardised and this included spinal anaesthesia and oral multimodal analgesia. The primary outcome was a valid, reliable and responsive multidimensional (pain, physical comfort, physical independence, emotions and psychological support) patient-reported quality of recovery scale consisting of 15 questions (scored from 0 to 150).

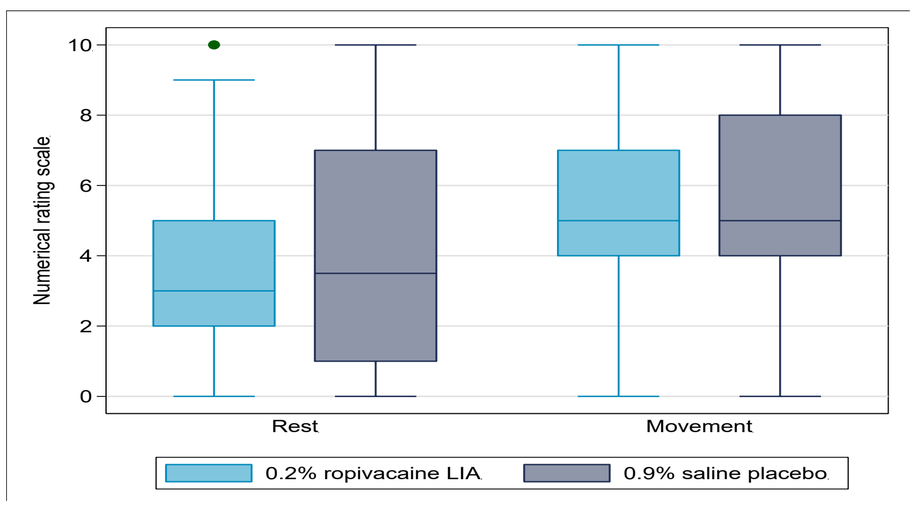
Results

160 patients were randomised; 6 patients were withdrawn after randomisation and 2 patients had incomplete outcome data. The intention-to-treat analysis included 152 patients. The median (IQR) QoR-15 score on POD 1 of the ropivacaine group was 119.5 (102, 124), compared with the placebo group which had a median (IQR) of 115 (98, 126). The Hodges-Lehmann median difference of 2 (95% CI -4 to 7, p = 0.56) was not statistically or clinically significant. An as-per-protocol sensitivity analysis of 146 patients who received spinal anaesthesia without general anaesthesia, and the allocated intervention, also showed no evidence of a significant difference between groups.



Quality of Recovery-15 score on POD 1

Secondary outcomes (worst pain numerical rating scale at rest and with movement on POD 1, opioid consumption on POD 1 and 2, mobilisation on POD 1, Brief Pain Inventory severity and interference on POD 90, and length of stay) were similar in both groups.



Worst pain Numerical Rating Scale on POD 1

Conclusion

LIA with 0.2% ropivacaine when compared with 0.9% saline placebo did not improve quality of recovery one day after anterior THR.

LIA should not be included in recommended clinical pathways for analgesia after anterior THR.

Ethical approval: Epworth HealthCare Human Research Ethics Committee (680-15).
Trial registration: ANZ Clinical Trials Registry (ACTRN12615000844549).
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References

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2. den Hartog YM, Mathijssen NM, van Dasselaar NT, Langendijk PN, Vehmeijer SB. No effect of the infiltration of local anaesthetic for total hip arthroplasty using an anterior approach: A randomised placebo controlled trial. *Bone Joint J.* 2015;97-B(6):734-740.