

Postoperative pain treatment with repeated boluses of ropivacaine via Transversus Thoracis muscle Plane block (TTP) catheters with median sternotomy patients.

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General data

Topic: 27: Thoracic Anaesthesia

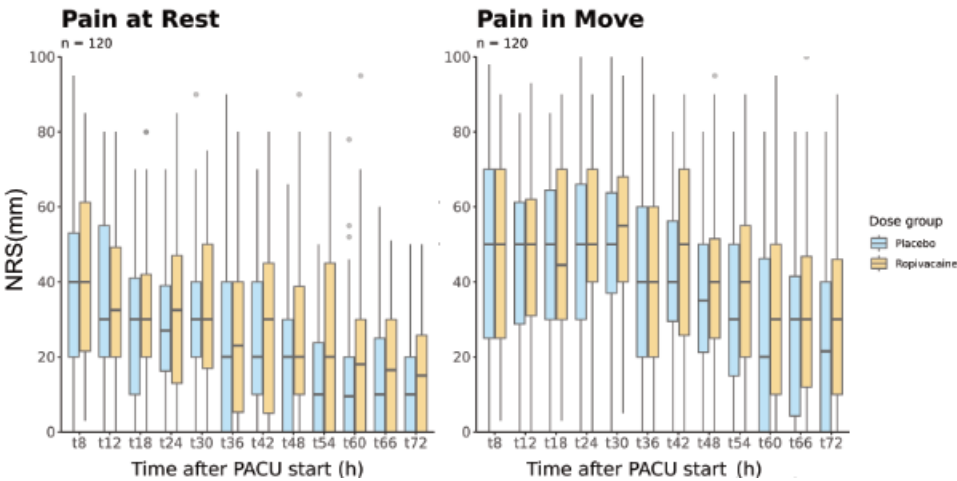
Abstract text

Abstract text: Background and Goal of Study: Median sternotomy causes major postoperative pain. Single shot TTP blocks may be effective to alleviate sternal pain. Previous results indicate that continuous infusion with ropivacaine could be beneficiary after sternotomy.¹ We hypothesized that repeated boluses of ropivacaine via TTP catheters would be associated with better and more durable pain relief, lower required cumulative dose of opioids, shorter ICU and hospital length of stay and less opioid related adverse effects in median sternotomy patients compared to placebo.

Materials and Methods: We conducted a double-blinded, randomized, placebo-controlled prospective trial with 120 patients (age 18-80 years) undergoing elective open cardiac surgery. After informed consent, patients were randomized to receive repeated boluses of either saline or ropivacaine via TTP catheters for 72 hours postoperatively. Primary endpoint was the patient reported pain scores with numeric rating scale. Secondary endpoints were cumulative oxycodone dose, incidence of local anaesthetic systemic toxicity or other adverse events and the effect on ICU and hospital length of stay.

Results and Discussion: Patient reported pain scores did not differ between groups. Sternal pain was significantly more common in the placebo-group compared to the ropivacaine-group 24-hours postoperatively (p=0.039) but no other differences were seen in pain location. Cumulative oxycodone requirement did not differ between groups. Postoperative nausea and vomiting (PONV) was common in both groups (38%) and subgroup analysis revealed a higher incidence of PONV in the ropivacaine-group undergoing heart valve replacement (p-value 0.012), but no differences were recorded between the main groups. ICU or hospital length of stay were not affected.

Conclusion(s): Repeated boluses of ropivacaine via TTP catheters had no significant effect on pain recordings or cumulative amount of opioids compared to placebo. It remains unclear whether the timing or administration mode of the TTP blocks affect the success of postoperative pain therapy.



References:

- 1. Zhan et al 2024, Journal of Cellular and Molecular Medicine

Key-Words

- 1st Keyword: Anaesthetic techniques,regional
- 2nd Keyword: Pain,postoperative
- 3rd Keyword: Surgery,cardiovascular

Ethical Research Declaration

Abstract type: non-case report: 5

Ethical Research Declaration Fields

I hereby confirm that an institutional review board (IRB), independent ethics committee (IEC), ethical review board (ERB) or ethics committee for animal experimentation approved the study: Yes
Institution: Medical Research Ethics Committee, The wellbeing services county of Southwest Finland
Name of the Ethical Committee Chair: Carl-Olof Pirttikangas
Approval reference: ETMK 16/1800/2021
Date of approval: 29.04.2021
I hereby confirm that written consent has been received from the patient Yes

Conflicts of Interest

Conflict of interest to declare?: No

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