

Investigating the opioid sparing effect of intravenous paracetamol combined with a multimodal analgesic protocol in dogs undergoing elective orthopaedic surgery

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No data evaluating paracetamol in combination with NSAIDs for analgesia in dogs are published.

Thirty dogs undergoing elective orthopaedic surgery were enrolled. Dogs were randomly assigned to receive paracetamol 10 mg kg⁻¹ IV after induction of anaesthesia and every 8 hours (Q8) during hospitalisation (test) or not (control). No placebo was used. Premedication consisted of dexmedetomidine 5 µg kg⁻¹ and methadone 0.3 mg kg⁻¹ IV. Anaesthesia was induced with propofol to effect and maintained with isoflurane in oxygen. Femoral and sciatic nerve blocks were performed with bupivacaine 0.5% 2 mg kg⁻¹ total dose. Meloxicam or robenacoxib were administered via a licensed dose, interval and route dependent on ongoing use and anaesthetists' discretion. Methadone 0.1 mg kg⁻¹ IV was administered at the subjective discretion of the anaesthetist intraoperatively or if the Glasgow Composite Measure Pain Scale – Short Form score >4/20 as assessed by blinded, trained and experienced staff every two hours post-operatively until discharge (16 - 48 hours). A power calculation was performed, and a sample size of 30 dogs selected. All parameters including rescue methadone requirements were compared between groups using Mann Whitney-U and Fisher's exact tests. $P \leq 0.05$ was considered statistically significant.

Data from 14 (test) and 13 (control) dogs were analysed. Breed, age, sex, weight, surgical time and anaesthetic complications were not significantly different between groups. Median (range) rescue methadone requirements were 0.0 mg kg⁻¹ (0.0-0.2), and 0.1 mg kg⁻¹ (0.0-0.3) for test and control groups, respectively ($P = 0.169$), with no statistical difference intra- ($P = 0.720$) and postoperatively ($P = 0.239$). Four (test) and 7 (control) dogs required rescue analgesia perioperatively ($P = 0.173$).

With this multimodal analgesic protocol, paracetamol did not provide significant opioid sparing effects in the peri-operative period. Low rescue analgesia requirements in both groups may have masked a clinical benefit.