

Ibuprofen better analgesic after a single dose

Clinical question Which analgesic is more effective for children with acute musculoskeletal pain?

Bottom line After a single dose, more children will achieve adequate analgesia after one hour with ibuprofen than with codeine or paracetamol, although after two hours the difference may no longer exist.

Synopsis The investigators enrolled 336 children between the ages of six and 17 years who were seen in a paediatric emergency department for assessment and treatment of a musculoskeletal injury within the past 48 hours. The children were randomised, using concealed allocation, to receive a single dose of codeine, paracetamol or ibuprofen at typical doses. The drugs were similar in taste and colour, and all three were in liquid form. Using a 10cm visual analogue scale, the average pain reported by the children was 5.1cm to 5.7cm. At 60 minutes, pain scores had dropped an average 2.4cm in the ibuprofen-treated children, compared with 1.1cm for the codeine group and 1.2cm for the paracetamol group ($P < 0.001$). The difference was more pronounced in children with fractures and was not significantly different in children with soft tissue injuries. "Adequate" analgesia, predefined and based on

previous research as less than 3.0cm on the 10cm pain scale, was achieved in 52 per cent of children receiving ibuprofen compared with 40 per cent receiving codeine and 36 per cent receiving paracetamol (number needed to treat = 9). Pain scores remained statistically lower for ibuprofen at two hours, although the number of children receiving adequate analgesia was similar among the three groups, perhaps reflecting a faster onset of action with ibuprofen.

Level of evidence 1b (individual randomised controlled trial with narrow confidence interval)

Reference Clark E, Plint AC, Correll R, Gaboury I, Passi B. A randomized, controlled trial of acetaminophen, ibuprofen, and codeine for acute pain relief in children with musculoskeletal trauma. *Pediatrics* 2007;119:460–7.

Funding Foundation

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