

### Intravenous Ibuprofen Reduces Opioid Consumption in Acute Pain Management for Orthopaedic Trauma Patients

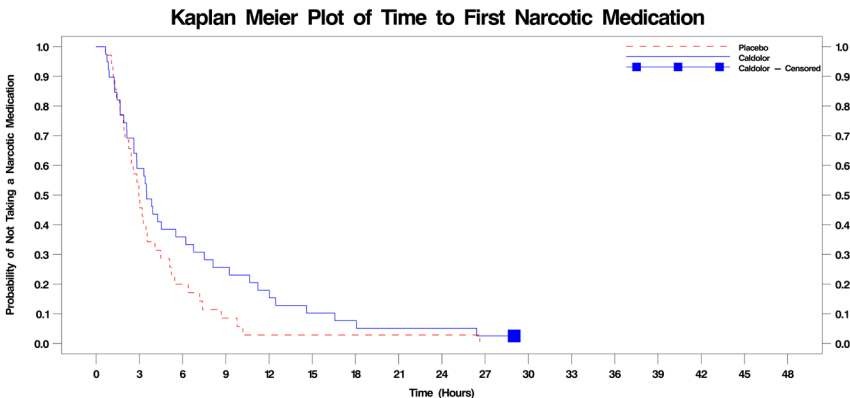
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**Purpose:** This study was undertaken to evaluate the efficacy of intravenous ibuprofen (Caldolor) administration in the management of acute pain in orthopaedic trauma patients and to minimize opioid use.

**Methods:** This randomized, double-blind, parallel design, placebo-controlled trial was conducted at a Level-I trauma center. A total of 99 orthopaedic trauma patients with fractures of the ribs, face, extremities, and/or pelvis were randomized to receive either 800 mg intravenous (IV) ibuprofen (53 patients) or placebo (44 patients). The treatment was administered every 6 hours for a total of 8 doses within 48 hours of admission and the same PRN (pro re nata, or as-needed) medications along with 20 mg IV or oral Pepcid twice a day. Analyzed variables included: pain intensity measured by Numerical Rating Scale, opioid consumption adjusted to morphine equivalent dose, and time to first narcotic administration. The primary outcomes were reduction in opioid consumption, time to first narcotic medication, and decrease in pain intensity. Treatment assignment remained blind to all authors, until all results were obtained and statistical analysis had been completed.

**Results:** Two groups had comparable baseline characteristics: age, gender composite, mechanism of injury, type of injury, ISS, and initial pain intensity. IV ibuprofen statistically significantly reduced opioid consumption compared with placebo during the initial 48-hour time period ( $P = 0.017$ ). Pain intensity calculated as pain intensity differences was not significantly different between groups over the entire period but was significantly different at 8 hours. Time to first narcotic medication was significantly longer in the Caldolor group (hazard ratio: 1.640; 95% confidence interval: 1.009, 2.665;  $P = 0.046$ ).

**Conclusion:** IV ibuprofen provided adequate analgesia, prolonged time to first narcotic administration, and reduced the amount of prescription opioids required for pain treatment in orthopaedic trauma patients, which makes Caldolor a recommended candidate for managing acute pain in the diverse trauma population.



The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device he or she wishes to use in clinical practice.