Low-Dose Short-Term Ketorolac Reduces Opioid Use and Pain Scores in Orthopaedic Polytrauma Patients

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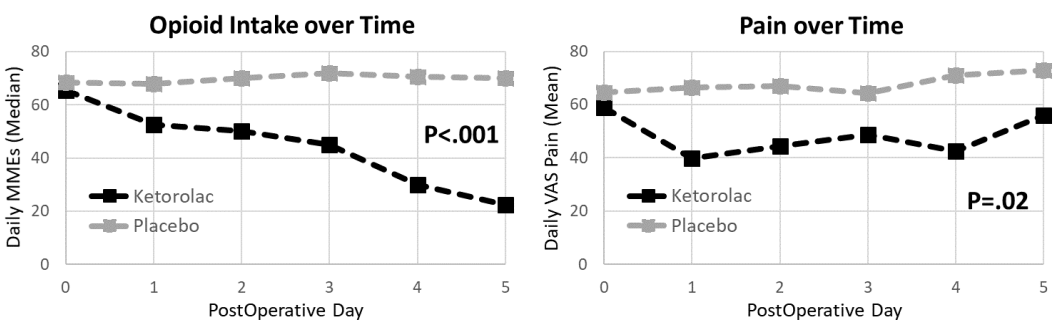
Purpose: The posttraumatic inflammatory response is a complex process associated with several complications including posttraumatic pain. We conducted a double-blind randomized controlled trial to determine whether scheduled short-term use of a low-dose, non-steroidal anti-inflammatory drug (NSAID), ketorolac, affects opioid intake and pain in orthopaedic polytrauma patients.

Methods: Patients between 18 and 70 years, with a New Injury Severity Score (NISS) greater than 9, and without a contraindication to NSAIDs were recruited from a Level I trauma center. Patients were randomized to ketorolac or placebo with the ketorolac group receiving 15 mg of intravenous ketorolac every 6 hours for up to 5 inpatient days and the placebo group receiving 2 mL of intravenous saline in a similar fashion. At enrollment and every 24 hours of inpatient stay, morphine milligram equivalent (MME) intake and a daily visual analog scale (VAS) for pain were recorded. Repeated-measures analysis of variance was used to estimate differences in MME intake and VAS pain scores across groups over time.

Results: 43 participants were included with 22 randomized to the ketorolac group. Study groups were balanced with respect to age, body mass index, and NISS. Over the 5-day treatment period, opioid intake and pain were reduced in the ketorolac group compared to the placebo group (Figure 1). No medication-related adverse events were reported in either group.

Conclusion: Scheduled, short-term use of low-dose ketorolac reduced opioid use and pain in orthopaedic polytrauma patients with no apparent short-term adverse effects. Further longitudinal studies are being conducted to delineate lasting clinical effects and potential side effects (eg, relationship to union). These results suggest that ketorolac can be a vital component in a multimodal pain pathway.



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POSTER ABSTRACTS