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# Acetaminophen, Nonsteroidal Anti-inflammatory Drugs, or Combination of Both Analgesics in Acute Posttrauma Pain: A Randomized Controlled Trial

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## Abstract

**Objectives:** Nonsteroidal anti-inflammatory drugs (NSAIDs) and acetaminophen (also called paracetamol) are the most frequent analgesics used to relieve posttrauma pain in the emergency department (ED). However, the utility of combining both treatments is still controversial. We sought to explore the benefits of combining an NSAID with acetaminophen compared to acetaminophen alone, or NSAID alone, in the treatment of posttraumatic pain of the extremity after discharge from the ED.

**Methods:** This is a prospective, randomized controlled trial, carried out in a single ED from March 2017 to November 2018. The included patients were randomly assigned to receive paracetamol alone, high-dose NSAID (piroxicam) alone, or a combination of paracetamol and high-dose NSAID for 7 days after ED discharge. The primary outcome was need for additional oral analgesics. Secondary outcomes included the change of the visual numeric scale (VNS) between ED discharge (VNS D0) and 7 days later (VNS D7), ED revisits for residual pain, side effects, and patient satisfaction as assessed by a Likert satisfaction scale.

**Results:** The need for additional oral analgesics was comparable between the paracetamol-NSAID combination group (9.8%) and the paracetamol group (11.4%;  $p = 0.43$ ). ED readmission rate was also comparable between the two groups at 5.6 and 5.8%, respectively ( $p = 0.86$ ). In contrast, need for new analgesics and ED revisit rates were both more frequent in the high-dose NSAID group. Mean VNS decreases on day 7 compared to day 0 were 66, 63, and 67%, respectively, in the paracetamol, NSAID, and paracetamol-NSAID combination groups ( $p = 0.32$ ). Frequency of dissatisfaction was higher in the NSAID group. Side effects were more frequent in the NSAID and paracetamol-NSAID combination groups.

**Conclusion:** This study found that the combination of a high-dose NSAID with paracetamol does not increase the analgesic effect compared to paracetamol alone. We also found that paracetamol alone is superior to high-dose NSAID alone for posttraumatic extremity pain.

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