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Preemptive analgesia by preoperative administration of nonsteroidal anti-inflammatory drugs

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To the editor: We read with great interest the article by Yamashita et al. [1]. These authors demonstrated that preoperative administration of intravenous flurbiprofen provided sufficient analgesia and opioid-sparing effects during the early postoperative period in patients undergoing spinal fusion surgery. Immediately after an operation, the serum concentration of flurbiprofen may be higher in patients who receive flurbiprofen postoperatively than in patients in whom it is administered preoperatively [2]; however, Yamashita et al. [1] found that the values on a visual analog scale were lower in their pretreatment group than in their postoperative treatment group. Moreover, after the surgery, the pretreated patients required less morphine, administered using a patient-controlled analgesia technique.

Although the statistically significant difference between the groups disappeared within a few hours, the results suggested the presence of a preemptive analgesic effect conferred by nonsteroidal anti-inflammatory drugs (NSAIDs) in clinical settings. The characteristics of preemptive analgesia have been reviewed by Kelly et al. [3]. Preemptive analgesia is not a new concept, but dates to the early twentieth century. Many studies have demonstrated the effect; however, randomized controlled clinical trials sometimes failed to verify it [3]. The variable patient characteristics and timing of preemptive analgesia in relation to surgical stimuli might require particular treatments for each patient. Thus, for practitioners who aspire to apply the advantage of preemptive analgesia with NSAIDs, following the concept of evidence-based medicine, it is necessary to have results that support the relevant preemptive analgesic effect in clinical investigations [1,4–6].

Recently, Gramke et al. [4] demonstrated that preoperative sublingual piroxicam was more effective than postoperative administration. Other NSAIDs, including intravenous ketorolac [5] and flurbiprofen [2,6], have also been reported to provide preemptive analgesia. In our study [2], we confirmed that preemptive and long-lasting analgesia derived from flurbiprofen was independent of the residual drug concentration.

There is room for discussion about the effect of preemptive analgesia; however, available data suggest that anesthesiologists should apply multimodal analgesic techniques, including NSAIDs, to achieve the benefits of preemptive analgesia [7].

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