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Letter to the editor

Pre-emptive analgesia implies the prevention of the 'wind-up' phenomenon

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The article by Thomson and Rood [1] entitled 'Pre-emptive analgesia reduces postoperative pain' discusses the importance of providing effective analgesia during the perioperative period. Their study demonstrates that preoperative administration of either tramadol or ketorolac reduces postoperative pain following third molar surgery performed under general anesthesia. Although we agree with the authors' conclusions regarding the relative effectiveness of these analgesic drugs, postoperative pain relief following preoperative analgesic administration does not establish the presence of pre-emptive analgesia. As suggested by the authors in their concluding paragraph, 'the key question, in relation to pre-emptive analgesia is whether analgesic intervention before surgery is more efficient than the same intervention following surgery....'. Thus, the title of their article is misleading to the readership.

McQuay [2] clarified the difference between performing an analgesic intervention before surgery and demonstrating a pre-emptive analgesic effect when he stated that: 'the evidence for or against a pre-emptive effect requires the comparison of the same intervention made before and after the pain stimulus starts..' (Fig. 1). Therefore, a pre-emptive analgesic effect can not be demonstrated when the different analgesics are administered at the same time, (i.e. only prior to the surgical incision). Few studies have actually compared the same analgesic intervention (using opioids, NSAID or local anesthetics) preemptively and at a latter stage of the surgical intervention [3]. The study by Thomson and Reed only demonstrated that preincisional administration of tramadol or ketorolac was able to reduce pain after oral surgery compared to a placebo treatment. While this positive result suggests a worthwhile clinical benefit, it fails to provide evidence for a 'pre-emptive' effect.

Surgical tissue damage leads to a dual phenomenon of central and peripheral sensitization that prolongs and increases sensitivity to noxious stimuli over an expanded receptive field (hyperalgesia), and results in pain from previously innocuous stimuli (allodynia). Repetition of such stimuli leads to a progressively escalating degree of hyperexcitability, which has been termed 'wind up' [4,5]. Pre-emptive analgesia implies that analgesics administered by one or a combination of different routes are able to attenuate stimuli-induced neuroplasticity, which once initiated, may sustain and magnify the pain experience [6,7].

In conclusion, we would suggest that Thomson and Rood perform a follow-up study in which they adminis-

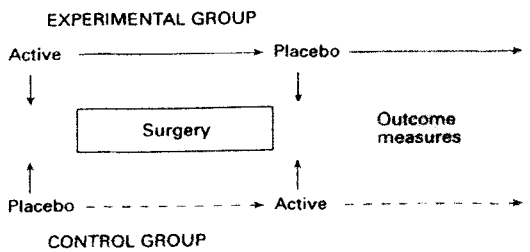

Fig. 1. The design necessary to demonstrate an effect of pre-emptive analgesia [1].

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ter the analgesic drugs (or placebo) before or after the surgical incision and then compare the postoperative analgesic effectiveness. Clearly, additional clinical studies are needed to establish the importance (if any) of pre-emptive analgesia.

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