

**Letter to editor****Suppository diclofenac instead of intravenous meperidine for postoperative management****Sir**

Shivering is the most common complication after anaesthesia and postoperative pain is another important impediment to recovery from surgery. Postoperative pain and shivering are two postoperative challenging components (1). Prevention of postoperative pain and post anaesthetic shivering should be considered and managed as two important components which demonstrably improve the patient's outcome.

Decisions on postoperative analgesia and post anaesthetic shivering should be based on the evidence of efficacy and safety. Various opioid like meperidine and buprenorphine; and non-opioid agents including clonidine and non-steroidal anti-inflammatory drugs (NSAIDs) are used to prevent, control and treat postoperative pain and shivering but they are not without any side effects and it will be surprising if it all works on a single part mechanism (1-3). Meperidine hydrochloride that is known as pethidine outside the United States is a synthetic opiate agonist belonging to the phenylpiperidine class. Meperidine in particular, is remarkably effective in postoperative shivering and pain treatment when given intravenously. Meperidine is known as a standard regimen for postanaesthetic shivering suppression and pain management (2, 3). Meperidine has a variety of side effects. Owing to the wide range of side effects with meperidine, its replacement with other analgesics has always been considered.

Sodium diclofenac is from NSAIDs category which has been shown to have analgesic affects in various conditions. Sodium diclofenac offers the advantages that it could inhibit prostaglandin biosynthesis by blocking the cyclooxygenase enzyme. By reducing the production of these agents, the feeling of pain may decrease in the peripheral nervous system; although a central anti-nociceptive effect has also been postulated for NSAIDs, opioids cannot remove chemical mediator of pain and by using meperidine, the patients still have an ambiguous feeling of pain. Moreover, sodium diclofenac neither causes respiratory depression, nor other meperidine side effects such as nausea, vomiting, decreased gastrointestinal (GI) motility, itching, respiratory

depression, tachycardia and physical dependency and hemodynamic instability. Sodium diclofenac like other NSAIDs has some GI effects and there is a theoretical risk of postoperative hemorrhage as it prolongs bleeding time and reduces platelet aggregation (1-4).

Rashid et al. evaluated the efficacy of rectal diclofenac for analgesia after the surgery. Their results showed that pain in the study group was significantly less compared to the control group (5). A certain study assessed the efficacy of diclofenac on patients' outcomes after cardiac surgery; it was concluded that sodium diclofenac has a significant opioid-sparing effect after operation (3).

The evaluation of preoperative rectal diclofenac for perioperative analgesia showed that it considerably delays the onset of postoperative pain, and is adequate as an analgesic for early postoperative period (1, 6, 7). We are conducting a multi central, prospective, double-blind, randomized clinical trial to evaluate the effects of prophylactic prescription of suppository diclofenac versus intravenous meperidine.

We found out that the pre-emptive analgesic effect of sodium diclofenac is comparable to meperidine. The results support the important role of sodium diclofenac given before surgery to decrease the frequency of persistent pain after surgery. Our study showed that a single dose of 100 mg sodium diclofenac suppository could provide satisfactory analgesia immediately following surgery and decrease post operation shivering and its effect was comparable with meperidine effect. Our investigation highlights the role of preoperative administration of single dose of rectal diclofenac as a sole analgesic for early postoperative period. Because of a theoretical risk of post operative hemorrhage with the use of diclofenac, it prolongs the bleeding time and reduces platelet aggregation (7).

There is a reluctance among the surgeons to use diclofenac due to its hypothetical risk of hematoma and the possibility of re-operation, but this concern may be overestimated by an investigator. However, in our study there was no case with extra intraoperative bleeding that

required active treatment; besides, in contrast with Legeby's study we did not have excessive postoperative blood loss as compared with the control group (8).

Although both suppositories, sodium diclofenac and meperidine effectively prevent shivering and pain after operation accompanied with an acceptable hemodynamic stability, suppository sodium diclofenac as an accessible and low-cost NSADs will be a valuable alternative for meperidine. Our observations highlight the role of preoperative administration of rectal diclofenac. We suggest preoperative administration of single dose of rectal diclofenac as a sole analgesic for early postoperative period.

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#### References

1. Ng A, Parker J, Toogood L, Cotton BR, Smith G. Does the opioid-sparing effect of rectal diclofenac following total abdominal hysterectomy benefit the patient? *Br J Anaesth* 2002; 88: 714-6.
2. Ambrose FP. A retrospective study of the effect of postoperative indomethacin rectal suppositories on the need for narcotic analgesia in patients who had a cesarean delivery while they were under regional anaesthesia. *Am J Obstet Gynecol* 2001; 184: 1544-7.
3. Fayaz MK, Abel RJ, Pugh SC, et al. Opioid-sparing effects of diclofenac and paracetamol lead to improved outcomes after cardiac surgery. *J Cardiothorac Vasc Anesth* 2004; 18: 742-7.
4. Rorarius M, Miralles J, Baer GA, Palomaki E. Diclofenac versus indomethacin given as intravenous infusions: their effect on haemodynamics and bleeding time, and side-effects in healthy subjects. *Ann Clin Res* 1985; 17: 306-9.
5. Rashid M, Jaruidi HM. The use of rectal diclofenac for post-cesarean analgesia. *Saudi Med J* 2000; 21: 145-9.
6. Bhagat H, Malhotra K, Tyagi C, Gangwar N, Pal N. Evaluation of Preoperative rectal Diclofenac for perioperative analgesia in ENT Surgery. *Indian J Anesth* 2003; 47: 463-6.
7. Movahed F, Poorrostamy S. Comparison of indomethacin suppository with intramuscular pethidine on the pain after cesarean section. *J Qazvin Univ Med Sci* 2003; 32: 26-9. [In Persian]
8. Legeby M, Sandelin K, Wickman M, Olofsson C. Analgesic efficacy of diclofenac in combination with morphine and paracetamol after mastectomy and immediate breast reconstruction. *Acta Anaesthesiol Scand* 2005; 49: 1360-6.