



For the peace of postanesthesia care unit

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What complaints do patients have about the postanesthesia care unit (PACU)? We have all heard of instances of pain, nausea, shivering, sore throat, and agitation in the PACU, and the list goes on. Symptoms other than pain that patients do not expect can cause dissatisfaction, and catheter-related bladder discomfort (CRBD) is a side effect that warrants repeated explanation. If drugs administered during anesthesia or after surgery can prevent discomfort in addition to their intended purpose, they may be beneficial in the treatment of PACU patients. Multimodal analgesia regimens vary, and there are no defined protocols for preventing or reducing postoperative discomfort; therefore, it is necessary that guidelines be reevaluated so we can better address perioperative distress. Opioids remain the primary pharmacotherapy for intraoperative and postoperative analgesia, despite their significant adverse effects [1,2].

This month's the *Korean Journal of Anesthesiology* included articles on the effects of nefopam and dexmedetomidine. Nefopam is a centrally acting, nonopioid, nonsteroidal, antinociceptive drug that is commonly used as a perioperative analgesic agent [3]. It has been reported that nefopam is also a good substitute for meperidine to prevent shivering [4]. Moreover, Cheon et al. [5] recommend the use of nefopam, administered before anesthesia induction, to prevent postoperative CRBD. Patients describe CRBD as a burning sensation in the suprapubic area or an urge to void. Behavioral reactions such as shaking of body extremities, loud vocal response, and trying to remove the catheter can cause difficulties for medical staff. CRBD is experienced by 47–90% of patients in the PACU [6]. Nefopam's mechanism of action is similar to those of serotonin, norepinephrine, and

dopamine receptor reuptake inhibitors, and it contributes to decreased incidence of CRBD [5].

Kweon et al. [7] evaluated the use of dexmedetomidine as an adjuvant drug for postoperative pain control; it was administered after surgery. Dexmedetomidine is a selective agonist of α_2 -adrenergic receptors and can be effective in preventing postoperative nausea and vomiting [8]. It is also effective in preventing CRBD [9]. Because CRBD can increase postoperative pain and cause emergence agitation, early and timely management is required to improve patient satisfaction [6]. The PACU would be a quiet and comfortable place for both patients and medical staffs if pain and CRBD could be resolved.

Potential side effects must be considered when using drugs with various mechanisms of action. Nefopam may cause nausea, vomiting, somnolence, hyperhidrosis, headache, and blurred vision [5]. Bradycardia and sedation are the main adverse effects associated with dexmedetomidine administration. Intraoperative dexmedetomidine infusion may delay awakening from anesthesia after surgery. However, bradycardia is transient and effectively reversed with atropine injection, and sedated patients can be easily awakened [10].

Cheon et al. [5] reported that nefopam administered before anesthesia induction reduces the incidence of CRBD, postoperative pain, and use of rescue analgesics without causing side effects. Based on this data in combination with previous studies, nefopam is believed to be largely responsible for eliminating side effects after the surgery. I wonder what we would see if we used nefopam before anesthesia induction and used dexmedetomidine during or after surgery.

Will there ever be a panacea? It would be wonderful if a single drug could prevent all symptoms that present in the PACU without side effects. Because this is not yet possible, multimodal treatment regimens have been studied. It is necessary that we find a combination of drugs or new treatment regimens that can reduce side effects and resolve various patient complaints after surgery.

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