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## Severe rebound pain after peripheral nerve block for ambulatory extremity surgery is an underappreciated problem. Comment on *Br J Anaesth* 2021; 126: 862–71

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Editor—We read with great interest the article by Barry and colleagues<sup>1</sup> in which they identified factors associated with rebound pain after peripheral nerve block for ambulatory surgery as younger age, female sex, bone surgery, and absence of perioperative i.v. dexamethasone administration. We were surprised to learn that 482 of the 972 patients in their study who received a peripheral nerve block experienced severe rebound pain, with a mean rebound pain score of 8.24 out of 10. The prevalence of severe rebound pain after regional anaesthesia has otherwise been reported between 35% and 41%.<sup>2,3</sup> Therefore, Barry and colleagues<sup>1</sup> corroborate that rebound pain is a problem for a large portion of patients who receive a regional anaesthesia, a point that may be underappreciated by many anaesthetists and surgeons.

Rebound pain is not just a cause of patient dissatisfaction, but may also negatively affect patient outcomes. de Oliveira and colleagues<sup>4</sup> showed that inadequate postoperative analgesia in the first 24 h, in general, is associated with an increased incidence of cardiovascular complications, and Shea and colleagues<sup>5</sup> found that increased pain scores postoperatively can contribute to pulmonary complications. Fletcher and colleagues<sup>6</sup> showed that severe postoperative pain in the first 24 h after surgery (although not specifically rebound pain) is a risk factor for developing chronic post-surgical pain. Moreover, rebound pain after peripheral nerve

block has even been shown to independently nearly double the odds of emergency department utilisation in the first few days after ambulatory upper extremity surgery.<sup>7</sup> Therefore, rebound pain is not just a burden for the patient, anaesthetist, and surgeon, but also for the healthcare system.

Identifying risk factors for severe rebound pain after regional anaesthesia allows targeting preventative strategies for those at greatest risk. An approach to prevent rebound pain should be multidisciplinary, especially for outpatient surgery, since in many centres postoperative pain management is transitioned to the surgical team upon discharge. Oral pain medications can start immediately after surgery, with the intent of achieving steady state before regional anaesthesia wears off. A multimodal oral pain medication regimen can include paracetamol, a non-steroidal anti-inflammatory medication, an opioid analgesic, and a gabapentinoid.<sup>8</sup> Our preferred regimen is presented in Table 1. Most patients are prescribed opioids at our institution since peripheral nerve block is reserved only for major extremity procedures. For minor procedures not requiring peripheral nerve block (e.g. carpal tunnel release, trigger finger release), opioids are not routinely prescribed. Adjuvants that decrease postoperative pain should also be used when possible. Dexamethasone, for example, prolongs the duration of the sensory block and reduces rebound pain<sup>9</sup>; accordingly, it was identified as a protective factor by Barry and colleagues.<sup>1</sup> Setting patient expectations with proper education about potential rebound pain will also help patients cope with the pain.<sup>10</sup>

**Table 1** Postoperative pain regimen for adult patients receiving peripheral nerve block for ambulatory upper extremity surgery.\*

Medication	Frequency	Dosage
Paracetamol	Every 6 h	1000 mg
Ibuprofen	Every 6 h	600–800 mg
Gabapentin	Three times per day	100–300 mg <sup>†</sup>
Oxycodone	Every 6 h	5–10 mg <sup>‡</sup>

\* Medications are started immediately postoperatively, administered on schedule for the first 24 h, and tapered thereafter.

<sup>†</sup> Gabapentin is used for peripheral nerve procedures.

<sup>‡</sup> Most patients are prescribed oxycodone since peripheral nerve block is reserved only for major extremity procedures. A stool softener, laxative, or both is co-prescribed with oxycodone use.

We appreciate Barry and colleagues<sup>1</sup> determining factors that we can use to identify and treat patients at greatest risk for experiencing rebound pain from regional anaesthesia. Regional anaesthesia offers excellent pain control in the acute perioperative period, but as currently administered for outpatient surgery in many centres, actually results in more intense pain after discharge.<sup>2,3</sup> Through collaboration between anaesthetists and surgeons, we can decrease the prevalence of severe rebound pain, optimise outcomes, and prevent unnecessary resource utilisation.

## Declarations of interest

The authors declare that they have no conflicts of interest.

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## Perioperative sleep in geriatric cardiac surgical patients: a feasibility study using a wireless wearable device

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