

### Regarding “Preoperative Quadratus Lumborum Block Reduces Opioid Requirements in the Immediate Postoperative Period Following Hip Arthroscopy: A Randomized, Blinded Clinical Trial”



By a randomized controlled trial with small sample of 46 patients undergoing hip arthroscopy, Wilson et al.<sup>1</sup> assessed the effect of preoperative lateral quadratus lumborum block (LQLB) on opioid consumption for early postoperative pain control and showed that opioid consumption significantly decreased in the patients receiving the LQLB combined with a standardized multimodal analgesia protocol, as compared with patients not receiving a block. Given the facts that the use of multimodal analgesia protocol, including a nerve block can improve postoperative analgesia, and is being emphasized in current practice of Enhanced Recovery After Surgery protocols,<sup>2</sup> this study has the potential implications. However, there are several issues in this study that need further clarification. We hope to get the responses from the authors.

First, the sample size was calculated on the basis of their preliminary data, in which mean ( $\pm$  standard deviation) intravenous morphine milligram equivalent (MME) consumption in the postoperative anesthetic care unit (PACU) after hip arthroscopy with no preoperative LQLB was 18.0 mg ( $\pm$  3.0). However, the authors did not describe how many patients were included in their preliminary trial. Most important, in the priori power analysis, a 30% decrease in postoperative intravenous MME was assumed as the minimal clinically important difference. We are very interested in knowing the literature evidence of this assumption. We would like to remind the readers that when MME of postoperative opioid consumption was used as the primary endpoint in patients undergoing hip or knee arthroplasty, the recommended minimal clinically important difference in the literature is an absolute decrease of 10 mg intravenous morphine for 24 h.<sup>3</sup>

Second, satisfactory postoperative pain control should achieve a visual analog scale (VAS) pain score of 30 or less, when pain level was measured using a 0-100 scale. In this study, means of pain VAS scores at PACU arrival and discharge were 57.9 or more, with large standard deviations. These results showed that most of the patients receiving and not receiving the LQLB experienced moderate to severe pain in early postoperative

period. This is not ideal postoperative pain control for the successful use of Enhanced Recovery After Surgery protocols for hip surgery, in which multimodal analgesia protocol is recommended, and analgesics should be titrated to achieve minimal pain (i.e., a pain score of 30 or less) for patient comfort.<sup>4</sup> Thus, we argue that an important issue that this study cannot answer is whether the LQLB may still decrease opioid consumption when satisfactory postoperative analgesia is obtained in patients undergoing hip arthroscopy.

Third, opioid consumption for pain control in the PACU significantly decreased 28.3% in the patients receiving a preoperative LQLB ( $P = .0374$ ). In fact, however, absolute difference of mean intravenous MMEs between the groups was 3.2, which is only equivalent to intravenous hydromorphone 0.48 mg or oral oxycodone 6.4 mg.<sup>5</sup> Furthermore, both PACU time and patient satisfaction were not significantly different between the groups. Thus, we question the clinical significance of this small opioid sparing and the benefit-cost ratio of using a preoperative LQLB for early postoperative pain control in patients undergoing hip arthroscopy.

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**Author Reply to  
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We thank Dr. Li et al. for their letter<sup>1</sup> regarding our publication.<sup>2</sup> During the design of a randomized clinical trial, defining what constitutes a minimal clinically important difference (MCID) for opioid reduction is not always straightforward as opioid consumption may be influenced by gender, body mass index, preoperative pain, genetics, and metabolism.<sup>3</sup> Although there is very little data to determine the MCID for many outcomes,<sup>4</sup> including opioid consumption,<sup>3</sup> 28% recurs frequently. As an example, a recent publication that aimed to determine the MCID for morphine milligram equivalents (MMEs) in patients with failed back surgery syndrome concluded the MCID was 28.2% for MMEs.<sup>5</sup> Similarly, in a widely respected and frequently cited investigation, Farrar et al. concluded that a decrease in pain greater than or equal to 28% was clinically significant.<sup>6</sup> Thus, we chose to power for a 30% opioid reduction based on a quality review of the perioperative care for 10 hip arthroscopy patients. Notably, postoperative opioid

consumption was reduced 28.3% in the block group in our study.<sup>2</sup> Additionally, while an absolute decrease of 10 mg intravenous morphine over 24 hours (~2.4 mg/hour) was recently proposed as a clinician-perceived MCID estimate for lower extremity arthroplasty,<sup>7</sup> our data and postoperative opioid consumption were only collected over approximately 1.5 hours (~2.1 mg/hour). Last, Dr. Li et al. suggest that our patients may have had inadequate pain relief as their VAS scores were greater than 30 on discharge. All patients were provided opioids in recovery until they determined that their pain control was adequate for home discharge; only then did they make their final pain rating. Although we excluded patients taking opioids for more than 3 months preoperatively, most of our patients had preoperative pain, were already taking multimodal analgesics, including opioids, and reported pain scores exceeding 30 in the preoperative holding area prior to surgery. Therefore, after an extensive operative procedure and repair, it is not unreasonable to expect their pain to be greater at discharge than on arrival.

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