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LETTER TO THE EDITOR

Patient-controlled epidural analgesia: opioid vs. NSAID dilemma

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We read with great interest the study by Liu et al. investigating the efficacy of patient-controlled epidural analgesia (PCEA) vs. single-dose epidural morphine (EM) for postoperative pain control following cesarean section [1]. The authors concluded that use of PCEA was an independent protective factor against supplementary analgesia in the postoperative period. The conclusions posed by the authors warrant further discussion due to lack of details on patients' pain scores, total opioid consumption, and adjustment for risk factors in the multivariate model.

The study does not provide details nor discuss the potential effect of total amount of opioid consumption on postoperative analgesic requirements. The patients in the EM group would have received a single dose of EM before undergoing surgery. In contrast, the PCEA group received local anesthetic along with opioid after surgery. The ability to self-administer medication by PCEA inherently decreases the need for adjuncts, resulting in higher overall opioid consumption throughout their admission. Because patients across all groups received supplemental opioids rarely (0–2% of patients), the observed protective effect of PCEA results from the trade-off between opioid vs. NSAID consumption. In addition, the authors primarily focus on the frequency and dose of postoperative NSAID administration to ascertain the effectiveness of PCEA, instead of utilizing pain scores. There is published evidence that opioid delivered via PCEA generally provide better pain relief compared to single-dose epidural analgesia and intravenous patient-controlled analgesia, consequently reducing the need for additional analgesia [2]. An alternative approach is to utilize the Brief Pain Inventory and morphine milligram equivalents to isolate the true effect of PCEA on postoperative NSAID requirements [3]. Stewardship of opioid use among breastfeeding mothers is heightened in light of the ongoing opioid epidemic and the fact that all opioid can pass on to breastfeeding neonates [4].

The authors mention that history of prior cesarean section or suboptimal epidural analgesia can affect the postoperative NSAID requirements but failed to make necessary adjustments in the multivariate analysis or include a sub-analysis of these groups. The prevalence of suboptimal pain control have been reported up to 38% of epidurals, necessitating its importance when assessing efficacy of postoperative pain control [5]. The number of patients in the PCEA group is significantly smaller compared to the EM group (105 vs. 919). In the absence of post-hoc power analysis, valid concerns can be raised about the reliability of data presented in the study. The authors choose to divide the postoperative period into 24-h intervals, resulting in large variability in total NSAID consumption. As a result, the data are presented as median and ranges in Table 2[1] providing little to no meaningful information for an independent assessment of clinical relevance. Perhaps, 6-h time intervals during first 24 h would have provided more uniform data to narrow down the actual differences in NSAID doses. Except during the first 24 h, there is no significant difference in the median NSAID dose among two groups. In the absence of average amount of opioid consumption by PCEA group, it is not possible to do a risk benefit evaluation of NSAID consumption. Considering the number of patients treated for vomiting and pruritis are significantly higher ($P = 0.006$ and $P = 0.001$) in PCEA group, one can appropriately deduce that total opioid administration was clinically relevant [6].

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Finally, the study presents results for the supplementary analgesic risk using a multivariate logistic regression model but fail to provide any details about the model. It is not clear if or which variables were adjusted in the model to calculate the risk. Certain risk factors such as age, BMI, pain scores, total opioid consumption, and duration of labor and surgery are known to affect severity of postoperative pain and subsequently analgesic requirements. A propensity score matched case control study could have provided sufficient power despite the smaller PCEA group sample size to isolate the true risk of postoperative NSAID requirements [7].

We commend the authors' efforts to explore the impact of PCEA on postoperative NSAID consumption. However, given that the PCEA group was overall exposed to higher opioid doses and increased incidence of adverse effects, the results lack major clinical implications.

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Declarations

Conflict of interest None.

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