**It’s How You Present the Results**

Commentary on an article by Kyle John Hancock, MD, et al.: "Efficacy of Multimodal Analgesic Injections in Operatively Treated Ankle Fractures. A Randomized Controlled Trial"

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One methodology utilized to promote opioid-sparing pain management and decrease length of stay following an orthopaedic surgical procedure is multimodal surgical-site injections. Research on the use of the technique is limited for non-elective trauma procedures, including those involving the ankle, with 1 single-blinded randomized controlled trial using liposomal bupivacaine compared with placebo in patients undergoing operative fixation of an acute rotational ankle fracture.

In the present study, Hancock et al. evaluate the use of multimodal surgical-site injections for operatively treated, closed, rotational ankle fractures in a double-blinded randomized trial performed in a single level-I trauma center. They compare the results of 49 patients who received an injection of ropivacaine, epinephrine, and morphine with those of 51 control patients who received no injection. The primary outcome was pain as measured with use of a visual analog scale (VAS) for the first 48 hours postoperatively. The VAS pain score was lower in the injection group compared with control overall, and the difference was significant at 24 hours (injection group, 42 ± 3; control group, 52 ± 3; p = 0.01), with a similar significant result at 48 hours. Median opioid consumption, as converted to the morphine equivalent dose, was similar between the 2 groups at 24 hours (injection group, 25.5 [range, 0 to 74.7]; control group, 28.3 [range, 2.5 to 91]; p = 0.35). The difference was also not significant at discharge. There was no difference in length of stay or in 2-week outcomes of outpatient pain scores or opioid consumption. The authors concluded that, although reduction in the pain score was significant in the immediate postoperative period, the result was not clinically meaningful. The authors did not recommend multimodal surgical-site injection as a means of reducing the need for opioids or decreasing length of stay following surgical treatment of ankle fractures.

A previous single-blinded randomized controlled trial assessed the use of liposomal bupivacaine injection compared with a saline solution injection in a similar surgical population. The findings in that study included a significant difference in pain control at all points between the liposomal bupivacaine and control groups, with graphically provided data at 24 hours showing an approximate VAS score of 7.5 versus 6.5, respectively, and similar graphical findings at other points. Opioid use was only significantly lower in the bupivacaine group at 4 hours postoperatively (p = 0.004), with the note that conventional bupivacaine was provided as a bridge until the liposomal formulation began release. There was no significant difference in length of stay. Patient satisfaction in terms of pain control was not significantly different between groups. The authors suggested that liposomal bupivacaine could be useful for multimodal anesthesia, suggesting further investigation of the use of liposomal bupivacaine following open reduction and internal fixation of extremity fractures.

The minimal clinically important difference is defined as the smallest difference that patients perceive as beneficial. A general consensus is that a minimal clinically important difference occurs with a 30% change in an outcome measure. In the present study, Hancock et al. assessed that the significant difference between a mean VAS score of 42 in the injection group and 52 in the control group was not clinically meaningful. In all probability, that opinion is consistent with the assessment that most clinicians would make in postoperative care with the reported findings. More importantly, the authors reported that there was no clinically meaningful difference in postoperative opioid use or length of stay between the groups in this study.

With this study, Hancock et al. add to the limited literature assessing the use of multimodal surgical-site injections for pain control following operative treatment of rotational ankle fractures. The authors concluded that the use of this particular injection offered little in terms of reducing opioid consumption and length of stay. Because of the limited literature available on the subject, it could be the case that other injection formulations also offer little in that regard. The authors are to be commended for incorporating the use of a minimal clinically important difference into the overall conclusions of the study.

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References

