

Effectiveness of Multimodal Pain Management on Surgically Treated Geriatric Hip Fracture Patients

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Purpose: The importance of pain management in elderly hip fracture patients is widely recognized. In the present study, we aimed to investigate whether multimodal pain management could decrease pain score while reducing opioid usage.

Methods: This retrospective comparative study (before-and-after cohort study) was performed in a single institution, and the data were collected from medical records between January 2010 and December 2023 for patients who underwent surgical treatment for hip fracture (femur neck, intertrochanter, and subtrochanter fracture). A multimodal pain management protocol for hip fracture, which included regional nerve block and systematic protocol for analgesic prescription, was established and applied from 2021. We excluded the period from 2019 to 2020 as a transition period, and defined the patients who underwent surgical treatment from 2010 to 2018 as the control group and those from 2021 to 2023 as the experimental group. We compared opioid dose for postoperative 2 days, pain score (visual analog scale; postoperative 6, 12, 24, and 48 hours), days for wheelchair ambulation, and length of hospital stay.

Results: 1611 patients were enrolled (mean age 74.7 ± 12.9 , 70% female): 1166 in the control group and 445 in the experimental group. The experimental group presented reduced opioid usage (11.8 vs 18.2, $P < 0.001$), decreased pain score (post-surgery 6 hours: 2.0 vs 3.0, $P < 0.001$; 12 hours: 2.4 vs 2.6, $P = 0.084$; 24 hours: 2.2 vs 2.4, $P = 0.002$; 48 hours: 1.8 vs 2.3, $P < 0.001$), early wheelchair ambulation (1.3 vs 2.0 days, $P < 0.001$), and shorter hospital stay (10.7 vs 13.2 days, $P < 0.001$).

Conclusion: The multimodal pain management for hip fracture demonstrated decreased pain score and early rehabilitation while reducing opioid usage.