

Efficacy of Scheduled Intravenous Acetaminophen Pain Management Protocol in Hip Fractures

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Purpose: Hip fractures are a common problem in the geriatric population, having wide-reaching effects including functional decline and economic impact on the health-care system. Prior studies have demonstrated both the safety of intravenous (IV) acetaminophen and its efficacy in decreasing perioperative narcotic consumption. The purpose of this study was to determine whether the implementation of a scheduled IV acetaminophen perioperative pain protocol during geriatric hip fracture treatment influenced length of hospital stay (LOS), pain level, narcotic use, physical therapy (PT) participation, and discharge disposition.

Methods: After IRB approval was obtained, a retrospective CPT code (27235, 27236, 27244, 27245) search was performed and the charts were reviewed of all patients 65 years or older admitted to the orthopaedic service at a Level I trauma center who underwent operative treatment for a hip fracture from June 1, 2011 through May 31, 2013. The patients were divided into two cohorts; the first (Group 1) consisted of patients treated before the initiation of a standardized IV acetaminophen pain control protocol, and the second (Group 2) consisted of those treated after the protocol was initiated. 365 consecutive fractures in 360 patients were identified. Pathologic fractures (8), periprosthetic fractures (8), concomitant injuries requiring operative intervention (8 fractures in 7 patients), and perioperative deaths (5) were excluded. This resulted in 332 patients with 336 intertrochanteric or femoral neck fractures (169 fractures in Group 1, 167 fractures in Group 2) with a mean age of 83 years (range, 65-101).

Results: There was no statistically significant difference in demographic data (age, gender, fracture classification, body mass index) or time from admission to the operating room between the two cohorts. Group 2 had a shorter mean LOS (4.4 vs. 3.8 days), lower mean visual analog scale (VAS) pain score (4.2 vs. 3.8), lower mean narcotic usage (41.3 vs. 28.3 mg "morphine equivalent"), lower rate of PT sessions missed (21.8% vs. 10.4%), and higher likelihood of discharge home instead of to a secondary care facility (7.1% vs. 19.2%) ($P \leq 0.001$, respectively). Separate multivariate regression analyses also demonstrated statistical significance for the utilization of IV acetaminophen as an independent predictor of decreased LOS, decreased VAS pain scores, lower narcotic usage, fewer missed PT sessions ($P < 0.001$, respectively), and increased rate of home discharge ($P = 0.008$).

Conclusion: The utilization of scheduled perioperative IV acetaminophen as part of a standardized pain management protocol for operative geriatric hip fractures is efficacious for shortening hospital length of stay, improving subjective and objective pain measures, missing fewer physical therapy sessions, and increasing home discharge rate.