Effect of a Repeat Dose of Dexamethasone in Postoperative Opioid Consumption, Pain, and Functional Recovery in Primary Total Hip Arthroplasty

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INTRODUCTION:
The optimal administration of dexamethasone for postoperative pain management and recovery following primary, elective total hip arthroplasty (THA) remains unclear. This study aimed to evaluate the effect of a second intravenous (IV) dose of dexamethasone on postoperative pain scores, inpatient opioid consumption, and functional recovery after THA.

METHODS:
A retrospective review of 2,256 patients who underwent primary elective THA between May 2020 and October 2021 was conducted. A total of 998 patients who received two perioperative doses (2D) of IV dexamethasone 10 mg were propensity-matched 1:1 to a control group of 1,254 patients who received one perioperative dose (1D) of IV dexamethasone 10 mg. To assess the primary outcome of opiate consumption, nursing documented opiate administration events were converted into morphine milligram equivalents (MMEs) for consecutive 24-hour postoperative intervals. Postoperative pain and functional status were also assessed using the Verbal Rating Scale (VRS) for pain and the Activity Measure for Post-Acute Care (AM-PAC) scores, respectively.

RESULTS:
A total of 1,982 patients were included in the analysis (1D = 991, 2D = 991). Compared to the 1D control group, the 2D group demonstrated a significantly lower VRS pain score at pain scores at 48 to 60 hours (4.16±2.24 vs. 4.62±2.07; 9.96% decrease, p=0.025) postoperatively. They also demonstrated a lower inpatient opiate consumption at 24-48 hours (7.66±20.1vs. 11.47±28.7 MMEs; 33.2% decrease, p=0.003) and 48-72 hours (6.20±15.4 vs. 12.0±27.3 MMEs; 48.3% decrease, p=0.001) postoperatively. AM-PAC scores did not significantly differ between cohorts.

DISCUSSION AND CONCLUSION:
The administration of a second perioperative dexamethasone dose significantly decreased opioid consumption in the immediate postoperative period. Inpatient opioid administration can be significantly reduced while maintaining a comparable functional recovery and superior pain control.