

Post-operative Glucocorticoid use in Shoulder Arthroplasty: Early Results of a Randomized-Control Trial

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Hypothesis: Perioperative glucocorticoids have been effectively used as a pain management regimen for reducing pain after orthopedic surgeries. We hypothesize that a Methylprednisolone taper course following total shoulder arthroplasty will reduce pain and opioid consumption in the early postoperative period.

Methods: This study is a randomized control trial (NCT03661645) for patients undergoing primary elective total shoulder arthroplasty. Patients are randomly assigned at the time of surgery to receive either intraoperative dexamethasone only or intraoperative dexamethasone followed by a 6-day oral methylprednisolone taper. Postoperative pain and opioid consumption is measured utilizing a pain journal in the first 7 days following surgery. Patient reported functional outcomes and demographics were also recorded.

Results: 52 patients were enrolled from November 2018 to November 2020 with postoperative pain journals. 28 patients have been assigned to the control group and 24 patients have been assigned to the treatment group. There were no differences in age ($p=0.80$), sex (0.43) dominant side affected ($p=0.49$), smoking status ($p=0.65$), or diabetes (0.56). No differences were seen in pre-operative and postoperative patient reported outcomes. In the 7 days following surgery, patients in the control group took an average of 15.3 (± 9.5) opioid tablets, while those in the treatment group took an average of 4.1 (± 6.4) tablets ($p<0.001$). By POD2 there was a significant reduction in the # of cumulative opioid tablets taken. Patient pain was equivalent from POD0 to POD1. However, from POD2 to POD7 patients receiving the methylprednisolone taper reported less pain. On POD7 patients in the treatment group report a mean score of 0.31 compared to 3.25 in the control group ($p<0.001$).

Discussion:

- Patients receiving a methylprednisolone taper experience significantly less pain in the early postoperative period.
- Perioperative glucocorticoids showed a significant reduction in overall opioid consumption.

