AAHKS Clinical Research Award

Oral Dexamethasone Following Total Knee Arthroplasty: A Double-Blind, Randomized Controlled Trial

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Introduction: Dexamethasone has been shown to reduce pain in total joint arthroplasty beyond a single preoperative dose, and extended duration of steroid use has precedence for nausea prevention during some chemotherapy regimens. This double-blind, randomized, placebo-controlled trial investigates the postoperative effects and safety of oral dexamethasone as a potential augment to multimodal use in outpatient knee arthroplasty.

Methods: The authors prospectively randomized 109 consecutive patients undergoing primary total knee arthroplasty at one institution. Patients were assigned to one of two groups: Group A (57 patients) received 4 mg of dexamethasone by mouth twice per day starting postoperative day (POD) one for four days and Group B received placebo capsules. All healthcare professionals and patients were blinded to group allocation. The primary outcome was defined as postoperative pain scores for POD 1-7. Secondary outcomes included 90-day postoperative complications, nausea and vomiting, daily opioid usage, assistance for ambulation, difficulty sleeping and early patient reported outcomes.

Results: Demographics and comorbidities were similar between groups. The patients who received dexamethasone had statistically significant decrease in VAS scores when averaging POD 1-4 ($p=0.01$). The average VAS scores amongst individual days were significantly lower with dexamethasone on POD 2-4. While taking dexamethasone, morning and midday VAS scores were significantly lower. The dexamethasone group took less oxycodone than the placebo group, but this was not statistically significant ($p> 0.05$). There was no difference between the groups with nausea or vomiting, 90-day complications, ability to walk with/without assistance, difficulty sleeping and early patient reported outcomes (Table 2).

Conclusion: This double-blind, randomized, placebo-controlled trial demonstrated that oral dexamethasone following primary total knee arthroplasty reduces pain scores postoperatively when added to a multimodal pain control regimen. This stands as a beneficial and safe option in ambulatory surgery where patients are unable to receive the traditional postoperative intravenous dose of dexamethasone.

Notes