

Effects of Multiple IV Dexamethasone on Clinical Symptoms after Total Knee Arthroplasty

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INTRODUCTION:

In recent times, many medical centers have been using intravenous (IV) perioperative dexamethasone, and several studies have been conducted to evaluate its effects on pain, postoperative nausea and vomiting (PONV), and postoperative discomfort through a large number of patients. Despite numerous studies conducted on dexamethasone, there has been limited research on the frequency and dose of its use.

This study is a retrospective, observational study that compares the effects of multiple low dose of perioperative intravenous (IV) dexamethasone versus no IV dexamethasone on postoperative pain, nausea and vomiting, and medication usage. The study aims to evaluate the efficacy of perioperative multiple low dose IV dexamethasone through a comparison of the two groups.

METHODS:

This retrospective study was conducted on 420 patients without diabetes. Patients were divided into two groups according to the use of IV dexamethasone (Dexa or No Dexa). For the Dexa, 10mg IV dexamethasone was administered twice (surgery day, postoperative day 1) and 5mg IV dexamethasone was administered once (postoperative day 2). The study measured VAS scores for pain in both groups, as well as the usage of opioid painkiller. To observe nausea and vomiting, the frequency of nausea and vomiting and the usage of antiemetics were measured.

RESULTS:

The data is divided into two groups, one group where intravenous (IV) dexamethasone was not administered (No Dexa, n = 210) and another group where it was administered (Dexa, n = 210).

The Dexa group had lower VAS scores compared to the No Dexa group on all postoperative days (POD 1 to 5), with a statistically significant difference. (Figure 1-A) The incidence of PONV was significantly lower in the Dexa group compared to the No Dexa group on surgery day and on postoperative day 1, 2. On postoperative day 3, however, the incidence of PONV was higher in the Dexa group compared to the No Dexa group. On postoperative days 4 and 5, there was no statistically significant difference in two groups. (Figure 1-B)

The cumulative opioid drug dose was significantly lower in the Dexa group compared to the No Dexa group on the day of surgery and on postoperative day 1. (Figure 1-D) The amount of antiemetics used postoperatively was significantly higher in the No Dexa group compared to the Dexa group on the day of surgery and on postoperative day 2, while it was significantly higher in the Dexa group compared to the No Dexa group on postoperative day 3. (Figure 1-C)

DISCUSSION AND CONCLUSION:

The study found that patients in the Dexa group experienced less pain compared to those in the No Dexa group up to five postoperative days, and that the incidence of PONV was significantly reduced in the Dexa group compared to the No Dexa group on surgery day and on postoperative day 1 and 2. Additionally, the use of opioid drug and the consumption of antiemetics

were also significantly reduced in the Dexa group.

