



Editor's note: This is a summary of a nursing care–related systematic review from the Cochrane Library. For more information, see <http://nursingcare.cochrane.org>.

Adverse Effects of Dexamethasone in Surgical Patients

REVIEW QUESTION

What are the adverse effects of dexamethasone, commonly administered for postoperative nausea and vomiting, in postsurgical patients?

TYPE OF REVIEW

A systematic review of 37 randomized controlled trials (RCTs).

RELEVANCE FOR NURSING

Dexamethasone, a glucocorticoid, is routinely used as a prophylactic for postoperative nausea and vomiting and is often administered in the perioperative period. The drug is also considered effective in analgesia and in prolonging the duration of peripheral nerve blocks. Research has focused on how dexamethasone, at a low dose and often as a one-off dose, can optimize progress within the perioperative period. Possible adverse effects of this use of dexamethasone are fluctuations in blood glucose, problematic wound healing, bleeding from the gastrointestinal tract, and infections. This review assesses the impact of dexamethasone on postoperative infections, possibly delaying wound healing and potentially increasing blood glucose in people with diabetes, which may impact wound healing.

CHARACTERISTICS OF THE EVIDENCE

The purpose of this review was to assess the potential for adverse effects from the perioperative administration of dexamethasone for postoperative nausea and vomiting prophylaxis in adult patients with and without diabetes. The primary outcomes were postoperative systemic or wound infection, delayed wound healing, and blood glucose changes within 24 hours.

The review included 37 RCTs that compared an incidental steroid load of dexamethasone with placebo, no treatment, or active control (such as tropisetron) in adults 18 to 80 years of age undergoing surgery. Surgeries included, but were not limited to, mastectomy, cardiac surgery, gastric bypass, and thyroid surgery. Dexamethasone was administered as a single 4-to-20-mg dose preoperatively, at the point of induction, after induction, and/or prior to skin closure.

There were no differences between any of the groups in the rate of postoperative systemic or wound infection. Dexamethasone did not necessarily increase the risk of delayed wound healing, but its effects were unclear. Finally, dexamethasone may produce a slight increase in glucose levels in people without diabetes in the first 12 hours after surgery. Two studies that assessed people with diabetes found that these patients may experience a greater increase in glucose in the 24 hours following dexamethasone administration.

BEST PRACTICE RECOMMENDATIONS

This review found that dexamethasone had no effect on infection after surgery; however, the evidence was of moderate to very low quality. The authors suggest that more research is needed in order to make a definitive statement about the link between dexamethasone and postoperative infection. They note that this is also true for the adverse effect of elevated blood glucose (especially in people with diabetes).

RESEARCH RECOMMENDATIONS

Patients at high risk for delayed wound healing or postoperative infection are not adequately represented in the current body of evidence. Future research should focus on the clinical implications of dexamethasone-induced hyperglycemia in patients with diabetes or who are at high risk for delayed wound healing. Results of the Perioperative Administration of Dexamethasone and Infection trial, in which these patients are represented, will hopefully provide clarification of the impact of dexamethasone on surgical site infection in diabetic patients. ▼

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SOURCE DOCUMENT

Polderman JAW, et al. Adverse side effects of dexamethasone in surgical patients. *Cochrane Database Syst Rev* 2018;11:CD011940.