

# Medication used to reduce nausea following tonsillectomies linked with increased risk of bleeding

December 9 2008

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Use of the steroid medication dexamethasone is effective in reducing nausea and vomiting after tonsillectomies for children, but also is associated with an increased risk of postoperative bleeding, according to a study in the December 10 issue of JAMA.

Tonsillectomy is one of the most frequently performed surgical procedures in children, with about 186,000 procedures performed on an outpatient basis every year in the U.S. Common complications include postoperative nausea and vomiting (PONV), and the drug dexamethasone is widely used and recommended to prevent these complications. However, the effective dosing for prevention of PONV symptoms remains unclear, as are dexamethasone's adverse effects, according to background information in the article.

Christoph Czarnetzki, M.D., M.B.A., of the University Hospitals of Geneva, Switzerland, and colleagues conducted a study to determine at what doses dexamethasone reduces the risk of PONV at 24 hours after tonsillectomy. The trial included 215 children undergoing elective tonsillectomy at a hospital in Switzerland from February 2005 to December 2007. Children were randomly assigned to receive dexamethasone (0.05, 0.15, or 0.5 mg/kg) or placebo intravenously after the start of anesthesia. Acetaminophen-codeine and ibuprofen were given as postoperative pain relief. Follow-up continued until the 10th postoperative day.

Within 24 hours after surgery, at least 1 PONV episode had occurred in 44 percent of children who received placebo; 38 percent of children who received dexamethasone, 0.05 mg/kg; 24 percent of children who received dexamethasone, 0.15 mg/kg; and 12 percent of children who received dexamethasone, 0.5 mg/kg. There were 26 postoperative bleeding episodes in 22 children, with bleeding occurring in 4 percent of children who received placebo; 11 percent who received dexamethasone, 0.05 mg/kg; 4 percent who received dexamethasone, 0.15 mg/kg; and 24 percent who received dexamethasone, 0.5 mg/kg.

The largest dose of dexamethasone was associated with a nearly 7 times higher risk of bleeding. Eight children needed emergency re-operation because of post-tonsillectomy hemorrhage; they had all received dexamethasone. The authors note that the association between dexamethasone and increased risk of bleeding was unexpected. The trial was stopped early for safety reasons.

"In summary, in children undergoing tonsillectomy, dexamethasone has a significant and dose-dependent antiemetic [prevents or alleviates nausea and vomiting] effect and decreases the need for rescue analgesia with nonsteroidal anti-inflammatory drugs [NSAIDs]. However, it cannot be excluded that dexamethasone, possibly through inhibition of wound healing, increases the risk of postoperative bleeding in this specific setting. Randomized trials that are specifically designed to confirm or refute our findings are needed, although it may be difficult to perform such trials in children. Future trials should involve several centers to improve the applicability of the results. In the meantime, and even though dexamethasone is a potent antiemetic drug, it may be prudent to avoid it in children undergoing tonsillectomy," the authors write.

Citation: JAMA. 2008;300[22]:2621-2630

Source: JAMA and Archives Journals

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