Original Article

Use of oral clonidine and oral midazolam as preanesthetic medications in the pediatric patient undergoing tonsillectomy

Belal S. Qteshat

King Hussein Medical City, Jordan.

ABSTRACT

Objective

To compare the effects of oral clonidine and oral midazolam as preanesthetic medication in children during tonsillectomy.

Method

A double-blind randomized study was performed on 54 patients aged between 6 and 14 years who underwent tonsillectomy between September 2008 and May 2009 at King Hussein Medical City, Jordan. They were divided into two equal groups; in the 1st group oral midazolam (0.5 mg/kg) was administered 30 minutes before induction of anesthesia and in the 2nd group oral clonidine (4 µg/kg) was administered 90 minutes before induction of anesthesia. All were evaluated in the preoperative, intraoperative and postoperative period.

Results

Oral midazolam was superior to clonidine in relieving preoperative anxiety and shortening the time of separation from parents. Clonidine decreased the incidence of emesis and shortened the duration of surgery and anesthesia.
Conclusion
The clinical benefits of oral clonidine as preanesthetic medication outweighs the benefits of midazolam in children undergoing tonsillectomy and it should be recommended for use as preanesthetic medication. (Rawal Med J 2011;36:114-115).

Key words
Clonidine, midazolam, tonsillectomy.

INTRODUCTION
Pre anesthetic medications in children should relieve anxiety, reduce the trauma associated with separation from their parents, and facilitate induction of anesthesia without prolonging the recovery period.\(^1\) In children, oral route remains the least threatening method of drug administration.\(^1\) Midazolam, a \(\gamma\)-amino-butyric acid (GABA) receptor inhibitor, is the most frequent pre anesthetic medication used in the United States.\(^2\) It provides sedation, anxiolysis, and varying degrees of anterograde amnesia, but has been associated with a paradoxical hyperactive reaction in some patients.\(^3\)\(^-\)\(^5\) Clonidine, an \(\alpha\)2–adrenergic agonist, was an effective preanesthetic medication in the adult and pediatric population, and also reduced the requirements for both inhaled anesthetics during surgery as well as opioids in the postoperative period.\(^6\)\(^-\)\(^9\) Tonsillectomy is one of the most common outpatient surgical procedures in the pediatric population.\(^10\)\(^-\)\(^11\) The aim of this study was to evaluate drug acceptance, preoperative sedation and anxiolysis, quality of mask acceptance, recovery profile and parental satisfaction after either oral midazolam 0.5 mg/kg or oral clonidine 4 µg/kg administration prior to mask induction.

PATIENTS AND METHODS
This double-blind randomized study was performed on 54 children aged 6-14 years who underwent tonsillectomy between September 2008 and May 2009 at King Hussein Medical City, Jordan. These were divided into two equal groups the 1st group (M group) received oral midazolam (0.5 mg/kg) 30 minutes before induction of anesthesia and the 2nd group (C group) received oral clonidine (4 µg/kg) 90 minutes before induction of anesthesia. All were evaluated regarding acceptance, preoperative sedation and anxiolysis, quality of mask acceptance, recovery
profile and parental satisfaction. Twenty-four hours after surgery, the parents of each subject were asked to evaluate the severity of pain, the number of emetic episodes and the time to first intake of solid food.

RESULTS

There was no statistically significant difference between the two groups regarding age and gender. The average time from the administration of oral clonidine and midazolam to separation from parents was 65 and 38 minutes respectively. The average time from the administration of oral clonidine and midazolam to application of the face mask was 75 min and 42 minutes respectively. The duration of surgery was significantly shorter in the C group (18±6 minutes) compared with (23±7 minutes) in the M group; also the duration of anesthesia was significantly shorter in the C group (43 ± 7 minutes) compared with (53 ± 12 minutes) in the M group. There were no clinically significant episodes of bradycardia or hypotension in either groups. Intraoperative averages of the mean blood pressure were significantly decreased in the C group. There was no difference regarding the time to first analgesic dose (12±16 in C group vs. 12±4 min in M group) and postoperative requirements of morphine. Group M showed less preoperative anxiety (25%) compared with the M group (75%) and was preferred by the child’s parents.

DISCUSSION

In this study, use oral clonidine or midazolam as pre anesthetic medication in children undergoing tonsillectomy had clinically important benefits. Oral midazolam was superior to clonidine in relieving preoperative anxiety and was preferred by the child’s parents. Patients who received midazolam were separated from their parents in a shorter time after the drug was administered. Thus, midazolam may be preferred in younger children where anxiety is more prominent. On the other hand, clonidine decreased the incidence of emesis, as noted in other types of surgeries like strabismus. Other benefits of clonidine are that it shortens the duration of surgeries and anesthesia and the patients are less liable for anesthetic and operative complications. Thus it is preferred in busy centers where large numbers of patients are undergoing operations. Also, lower mean blood pressure was noted in patients with clonidine.
group. This is important because intra or post operative bleeding, which is the most serious complication of tonsillectomy, will be less.

CONCLUSION

The clinical benefits of oral clonidine as preanesthetic medication outweighs the benefits of midazolam in children undergoing tonsillectomy and it should be recommended for use as preanesthetic medication.

Correspondence: Belal S. Qteshat, Anesthesia specialist
Received: December 13, 2010 Accepted: February 6, 2011

REFERENCES


