

To Compare the Clinical Effects of Oral Midazolam and Oral Clonidine as Premedication in Children Undergoing Tonsillectomy**Amitha P. Rao****Anesthesiology, District Hospital, Davanagere****Received: 10-05-2026 / Revised: 17-06-2026 / Accepted: 11-07-2026****Corresponding Author: Dr Amitha P Rao****Conflict of interest: Nil****Abstract:**

Anxiety and fear of operation, injections, physicians, operation theater environment, and parental separation are all traumatizing experiences in young children resulting in postoperative maladaptive behavioral changes. Premedication should yield a patient who is calm, free of anxiety and pain, sedated, but easily arousable and fully co-operative. The concept of premedication was introduced in early 1900s. The administration of drugs before the induction and maintenance of anaesthesia is referred to as Preanaesthetic medication. The term premedication was first used in the 1920s.

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Introduction

A need exist for an efficient premedicant drug especially in paediatric age group undergoing elective surgical procedures. Anxiety and fear of operation, injections, physicians, operation theater environment, and parental separation are all traumatizing experiences in young children resulting in postoperative maladaptive behavioral changes. Premedication[1] should yield a patient who is calm, free of anxiety and pain, sedated, but easily arousable and fully co-operative. The concept of premedication was introduced in early 1900s. The administration of drugs before the induction and maintenance of anaesthesia is referred to as Preanaesthetic medication. The term premedication was first used in the 1920s. One of the, commonly used premedicant in paediatric anaesthesia drug worldwide is midazolam[2]. Clonidine, an alpha 2 agonist, central sympatholytic agent used as antihypertensive agent is a new trial in this category[3.5]. In spite of all existing premedicants anaesthetic practitioners are still in search for an ideal premedication agent with better efficacy and minimal side effects. So I decided to compare the efficacy of midazolam and clonidine as oral

premedication in children undergoing elective tonsillectomy.

Materials And Methods

A study group of 100 patients of age group 4 -12 yrs undergoing tonsillectomy under general anaesthesia were selected. They were divided into 2 groups of 50 patients each by lots taking method. All even numbers were assigned to Group A and all odd numbers were assigned to Group B.

Inclusion Criteria:**Age:** 4-12 years

Both sexes ASA 1-2

Tonsillectomy under GA

Exclusion Criteria

ASA 3-4

Children with CNS disorder Obesity (weight >95 percentile)

Results**Table 1: Intensity of sedation on separation from mother**

Score	Grade	Clonidine (Group I)	Midazolam (Group II)	Total
1	Alert	2	2	4
2	Awake	10	31	41
3	Drowsy	27	16	43
4	Sleep	11	1	12

11 children in clonidine group were asleep, 27 were drowsy, 10 were awake and 2 were alert at time of separation from parents. In midazolam group 1 was asleep, 16 were drowsy, 31 were awake and 2 were alert the sedation score was found to be better in clonidine group with statistical significance of 0.000.

Table 2: Level of anxiety on separation from mother

score	Grade	Clonidine (Group I)	Midazolam (Group II)	Total
1	Crying	0	4	4
2	Anxious	9	30	39
3	Calm/uncooperative	20	15	35
4	Calm/cooperative/Asleep	21	1	22

In clonidine group no children were crying, 21 were calm and cooperative, 19 were calm and uncooperative and 9 were anxious at the time of separation. In midazolam group 4 children were crying, 30 were anxious, 16 were calm and cooperative and 1 was calm and cooperative at the time of separation from the parents. The sedation score was better in clonidine group with a significance of 0.000.

Table 3: Intensity of sedation on Venopuncture

Score	Grade	Clonidine (Group I)	Midazolam (Group II)	Total
1	Alert	10	23	33
2	Awake	19	25	44
3	Drowsy	20	2	22
4	Asleep	1	0	1

In the clonidine group 10 children were alert, 19 were awake at the time of venipuncture. In the midazolam group 23 children were alert, 25 were awake at time of venopuncture. The sedation was found to be better in clonidine group than in midazolam with statistical significance of 0.000 which is highly significant.

Table 4: Level of Anxiety on Venopuncture

Score	Grade	Clonidine (Group I)	Midazolam (Group II)	Total
1	Crying	7	14	21
2	Anxious	14	21	35
3	Calm/Uncooperative	19	15	34
4	Calm/cooperative/asleep	10	0	10

In the clonidine group 7 children were crying, 14 were anxious at the time of venopuncture. In the midazolam group 14 were crying, 21 were anxious at the time of venopuncture. The anxiety score was better in clonidine group with statistical significance of 0.003.

Table 5: Mask Acceptance

Score	Grade	Clonidine (Group I)	Midazolam (Group II)	Total
1	Combative/crying	7	13	20
2	Moderate fear for mask	4	22	26
3	Cooperative on assurance	22	14	36
4	Calm/cooperative	12	1	13
5	Asleep	5	0	5

In the clonidine group 12 children were calm and cooperative, 5 were asleep, 22 were cooperative on assurance on face mask application. In the midazolam group 13 children were crying, 14 were cooperative on assurance and one was calm and cooperative on mask application. Hence Mask acceptance was better in clonidine group with statistical significance of 0.000.

Table 6: Post Operative Status

Groups	Score1	Score 2	Score3
Clonidine (Group I)	11	32	7
Midazolam (Group II)	0	31	19
Total	11	63	26

The post operative status was assessed 30 minutes after extubation in post operative care room. In the clonidine group 11 children had tears and could be consoled with score of 1, 32 children had tears and facial grimace with a score of 2 and 7 children had

tears, moderate agitation and facial grimace with a score of 3. In midazolam group 31 children had tears and facial grimace with score of 2 and 19 children had tears, moderate agitation and facial grimace with a score of 3. The clonidine group had better post-

operative status than the midazolam group with a statistical significance of 0.000.

Discussion

The practice of anesthetic premedication was introduced soon after ether and chloroform were introduced as general anesthetics in the middle of the 19th century[7]. By applying opioids, benzodiazepines and anticholinergics before surgery, the patients undergoing surgery can achieve a less anxious state, and they would also acquire a smoother course during the tedious and dangerous induction stage. Premedication with opioids and anticholinergics was not a routine practice till the 20th century when intravenous anesthetics were primarily used as induction agents that significantly shorten the induction time. In the ancient preanaesthetic days even wine and opium were given to lessen the terror of surgery. The current practice of anesthetic premedication incorporates several aspects of patient care such as decreasing anxiety, dampening intraoperative noxious stimulus and its associated neuro endocrinological changes, and reducing postoperative adverse effects of anesthesia and surgery. The concept of anesthetic premedication was developed in 1850s in order to counteract the side effects of general anesthesia when ether and chloroform were widely used as inhalational anesthetics [7]. In 1864 Nussbaum in Germany and Bernard in France, found out simultaneously that subcutaneous morphine can relax patients and intensify chloroform anesthesia. Around the same time, another French scientist named Dastre found that atropine can decrease salivation and antagonize the effects of respiratory depression and vomiting associated with morphine. There after morphine and atropine became popular anesthetic premedication in the late 19th century. It was not popularized until Dudley Buxton published the first paper regarding the use of morphine, atropine, scopolamine, and other similar agents prior to inhalation anesthesia in 1911. Clonidine an α_2 agonist used as antihypertensive agent has been proved to have sedative and analgesic effect, prevents post operative nausea and vomiting. It has been under clinical trial as an efficient premedicant utilizing these properties of the drug. Midazolam has been proved to be effective in reducing the preoperative anxiety level in many studies [8-18]. It was found that discharge from the recovery room in outpatient surgery was also not delayed in midazolam used patients. Except for midazolam, α_2 -agonists, antidepressants, and anticonvulsants are all effective in reducing the preoperative anxiety level. In our study we compared oral midazolam and oral clonidine as premedication in children undergoing tonsillectomy. Anaesthesia and surgery creates a great psychological stress in most of the patients. The overall frequency of anxiety before anaesthesia

was found to be 40–60% in older children in a study conducted by Norris and Davis 1960) [6] as many as around 80% of patients were found to be anxious in an extensive study conducted by Corman et al in 1958 by using a psychological questionnaire^[7]. A greater frequency was found in females than in males. Premedication was considered essential in children. The pilot study showed that premedicated children had better value of arterial oxygen saturation than unpremeditated anxious and apprehensive children. A positive correlation was reported between anxiolysis and ease of induction of anaesthesia (Lindgren, Saarni Vaara, Himberg 1980)[19].

Conclusion

We concluded from our study that oral clonidine and midazolam can be used as better premedicants to produce optimal sedation and emotional state. Clonidine 4 μg / kg has been shown to be a more effective premedication for children undergoing elective tonsillectomy than midazolam 0.5mg/kg.

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