

## Original Research Article

# To evaluate the efficacy and orally administered midazolam in pediatric age group.

Dr. Bharat Verma<sup>1</sup> (Assistant Professor)

Dept. of Anaesthesia, GMC, Datia, M.P.<sup>1</sup>

Corresponding Author: Dr. Bharat Verma

**Abstract:**

**Background & Method:** The aim of this study is to evaluate the efficacy and orally administered midazolam in pediatric age group. Premedication was done with inj.atropin 0.01mg/kg. & all procedure was The observation were discussed in terms of pulse rate, respiratory rate, SpO<sub>2</sub>, patient's acceptance of the medication, reaction to separation from parents, sedation scores, and recovery conditions. performed under general anaesthesia.

**Result:** The children's reaction to being separated from their parent(s) 30 minutes after receiving premedication. We found that none of the children in the 0.75 mg/kg dose group cried compared with 4 children (20%) in the c group and one child (5%) in the 0. 5 mg/kg dose group. The percentage of children who appeared uncomfortable (study recorded that they were crying or complaining) were the highest in the control dose group (45%). Only 25% of the children in the 0.5 mg/kg dose group and 10% of the children in the 0.75 mg/kg dose group appeared uncomfortable.

**Conclusion:** An effective premedication may facilitate a smoother induction of GA with minimal hemodynamic alterations and minimize the emotional trauma in children undergoing surgery. Midazolam syrup is more effective in reducing both separation and induction anxiety in children, with minimal effect on recovery times. Midazolam syrup is very helpful for smooth induction and smooth emergence.

**Keywords:** efficacy, orally midazolam & pediatric.

**Study Designed:** Observational Study.

## 1. INTRODUCTION

Before the coming of midazolam, diazepam was the decision where pentothal couldn't be involved like in porphyrias, barbiturate responsiveness or where negative inotropic or fringe vasodialathing properties of barbiturate has appeared dangers like shock, restricted heart reserve[1]. In any case. Long length of activity and non-watery readiness have restricted the utilization of diazepam. The last property has been an exceptional issue. Since the main suggested method of intravenous organization has been to infuse the medication undiluted straightforwardly into a huge unhampered vein a technique ineffectively fit to the sedative circumstance. What's more, in any event, when the medication is managed as coordinated, phlebitis now and again occurs.hence, The quest for water dissolvable benzodiazepine has been extraordinary and midazolam maleates in one of the results of that search[2].

Midazolam maleate is a lackluster gem, which shows a pH dependant ring peculiarity. In the pre-arranged structure it is cradled to a pH of 3.5 which keeps the benzodiazepine ring open while organization physiologic pH keeps up with the shut ring structure and the medication viability. Due to the pH of arrangement midazolam maleate ought not be managed associatively with alkaling solutions[3&4].

Testing has demonstrated midazolam maleate to be an ordinary benzodiazepine for example it is a mesmerizing, has hostile to tension and muscle relaxant properties and has a less edge of security (more noteworthy than that of diazepam)[5].

Midazolam produces rest rapidly and easily. On infusion it is an easy and have a short half life. The disposal half existence of midazolam maleate was around 2 hours, with the urinary discharge information showing recuperation of roughly 30-40% of managed portion as the formed type of first metabolite in initial 12 hours.

## 2. MATERIAL & METHOD

Present study was conducted in the Department of Anaesthesiology of GMC, Datia from July 2020 to Dec 2020. Patients were premedicated after being sure of nil oral by mouth, written consent and anesthetically fit.

Study group A: patients in this group were administered oral midazolam syrup 0.5mg/kg dose 30 min. prior to surgery

Study group B: patients in this group were administered oral midazolam syrup 0.75mg/kg dose 30 min. prior to surgery.

Control group C: patients in this group were administered apple juice 30 min. prior to surgery.

Premedication was done with inj.atropin 0.01mg/kg. and all procedure was The observation were discussed in terms of pulse rate, respiratory rate,  $SpO_2$ , . patient's acceptance of the medication, reaction to separation from parents, sedation scores, and recovery conditions. performed under general anaesthesia.

### Inclusion Criteria of Patients:

Study was conducted on 60 patients of both sexes taken for various surgical procedures taking from 30 to 90 minutes.

Age group considered was between 1-5 years.

All patients were of ASA grade - I or Grade II in every patients consent, physical examination entire investigation and special investigation (if required) were checked.

### The Exclusion Criteria:

- Children having upper respiratory infections, rhinopharyngitis.
- History of drug allergies to the study drugs.
- Those requiring an intravenous anesthetic induction.

## 3. RESULTS

Table 01: Sex distribution

Sex	A (0.5 mg/kg)	B (0.75 mg/kg)	C (placebo)
Male	13	12	14
Female	07	08	6

P> 0.05

No any significant differences seen in sex distribution.

Table 02: ASA Grading

ASA Grade	M1(0.5 mg/kg)	M2 (0.75 mg/kg)	C (placebo)
I	16	15	17
II	04	05	03

P> 0.05

Table 03: Reaction to parent's separation.

Groups Midazolam Dose	A	B	C
	0.5 mg/kg (%)	0.75mg/kg (%)	Placebo (%)
Inconsolable cry	05	00	20
Complaining	20	10	25
Total number of uncomfortable children	25	10	45
Quiet-but-awake	65	65	50
Sleepy	10	25	05
Total number of comfortable children	75	90	55

$P \leq .05$  versus group A

The children's reaction to being separated from their parent(s) 30 minutes after receiving premedication. We found that none of the children in the 0.75 mg/kg dose group cried compared with 4 children (20%) in the c group and one child (5%) in the 0.5 mg/kg dose group. The percentage of children who appeared uncomfortable (study recorded that they were crying or complaining) were the highest in the control dose group (45%). Only 25% of the children in the 0.5 mg/kg dose group and 10% of the children in the 0.75 mg/kg dose group appeared uncomfortable.

#### 4. DISCUSSION

Small children are uncooperative, unfortunate, restless, and genuinely safe. Uncooperative kids, whether because of rehashed sedation, high uneasiness, or mental and formative issues ought to be properly treated to keep away from perioperative conduct issues.

Midazolam is the most regularly involved drug for premedication and is utilized in more noteworthy than 90% of careful cases including premedication in the US. The blend of the soothing and anxiolytic qualities is accepted to make a quieting impact which makes kids less restless when they are isolated from their folks and during veil placement[6].

A midazolam prompted decline in uneasiness was more articulated for kids with higher gauge levels of tension. Oral midazolam was viewed as predominant when contrasted and other ordinarily utilized premedications[7]. Oral midazolam was accounted for to give a more unsurprising and successful sedation than oral diazepam. It was likewise connected with a quicker and smoother recuperation, when contrasted and oral ketamine. Our review coordinate with this review, likewise revealed more noteworthy anxiolysis after oral midazolam (0.5 mg/kg) than after a blend of diazepam (0.25 mg/kg) with droperidol (0.25 mg/kg) or trimeprazine (2 mg/kg).

Coté et al.(2002) involved 3 distinct dosages of Midazolam syrup in youngsters (0.25, 0.5, and 1.0 mg/kg, up to 20 mg) and tracked down that the littlest portion (0.25 mg/kg) was similarly just about as viable as the higher doses[8].

In our investigation we discovered that 0.75 mg/kg portion of oral midazolam syrup given as premedication is more successful when contrasted with 0.5mg/kg portion.

Mishra et al.(2005) blended IV midazolam in with honey (multiple times the medication volume), which was very much acknowledged by a large portion of their subjects[9].

## 5. CONCLUSION

An effective premedication may facilitate a smoother induction of GA with minimal hemodynamic alterations and minimize the emotional trauma in children undergoing surgery. Midazolam syrup is more effective in reducing both separation and induction anxiety in children, with minimal effect on recovery times. Midazolam syrup is very helpful for smooth induction and smooth emergence.

## 6. REFERENCES

1. K. Kirov, C. Motamed, S.-K. Ndoko, and G. Dhonneur, "TOF count at corrugator supercilii reflects abdominal muscles relaxation better than at adductor pollicis," *British Journal of Anaesthesia*, vol. 98, no. 5, pp. 611–614, 2007.
2. S. Malviya, T. Voepel-Lewis, A. R. Tait, S. Merkel, K. Tremper, and N. Naughton, "Depth of sedation in children undergoing computed tomography: validity and reliability of the University of Michigan Sedation Scale (UMSS)," *British Journal of Anaesthesia*, vol. 88, no. 2, pp. 241–245, 2002.
3. A. T. Watson and A. Visram, "Children's preoperative anxiety and postoperative behaviour," *Paediatric Anaesthesia*, vol. 13, no. 3, pp. 188–204, 2003.
4. M. A. Lumley, B. G. Melamed, and L. A. Abeles, "Predicting children's presurgical anxiety and subsequent behavior changes," *Journal of Pediatric Psychology*, vol. 18, no. 4, pp. 481–497, 1993.
5. Z. N. Kain, A. A. Caldwell-Andrews, D. M. Krivutza, M. E. Weinberg, S.-M. Wang, and D. Gaal, "Trends in the practice of parental presence during induction of anesthesia and the use of preoperative sedative premedication in the United States, 1995–2002: results of a follow-up national survey," *Anesthesia and Analgesia*, vol. 98, no. 5, pp. 1252–1259, 2004.
6. G. A. Finley, S. H. Stewart, S. Buffett-Jerrott, K. D. Wright, and D. Millington, "High levels of impulsivity may contraindicate midazolam premedication in children," *Canadian Journal of Anesthesia*, vol. 53, no. 1, pp. 73–78, 2006.
7. K. K. Brosius and C. F. Bannister, "Midazolam premedication in children: a comparison of two oral dosage formulations on sedation score and plasma midazolam levels," *Anesthesia and Analgesia*, vol. 96, no. 2, pp. 392–395, 2003.
8. C. J. Coté, I. T. Cohen, S. Suresh, et al., "A comparison of three doses of a commercially prepared oral midazolam syrup in children," *Anesthesia and Analgesia*, vol. 94, no. 1, pp. 37–43, 2002.
9. L. D. Mishra, G. K. Sinha, P. Bhaskar Rao, V. Sharma, K. Satya, and R. Gairola, "Injectable midazolam as oral premedicant in pediatric neurosurgery," *Journal of Neurosurgical Anesthesiology*, vol. 17, no. 4, pp. 193–198, 2005.