

**CLINICAL OUTCOME KETOFOL AND PROPOFOL IN CASE OF MINOR SURGICAL
PROCEDURE IN BANGLADESH****Dr. Md. Nurul Amin¹, Dr. Md. Golam Mowla², Dr. Farhana Jaya Chowdury³ and Dr. Md. Abdur Rahman⁴**¹Associate Professor and Head, Dept. of Anaesthesiology, Sylhet Women's Medical College, Sylhet, Bangladesh.²Associate Professor, Dept. of Surgery, Sylhet Women's Medical College, Sylhet, Bangladesh.³Assistant Professor, Dept. of Paediatrics, Sylhet Women's Medical College, Sylhet, Bangladesh.⁴Senior Consultant, Dept. of Anaesthesiology, Sadar Hospital Jhenaidah, Bangladesh.***Corresponding Author: Dr. Md. Nurul Amin**

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ABSTRACT

Background: Outpatient anesthesia for the minor day-care surgical actions needs a safe anesthesia and anesthetic agents. **Objective:** To evaluate effectiveness between ketofol and propofol in minor surgical procedure in Bangladesh. **Methods:** This experimental study is conducted at tertiary medical college and hospital, from January 2019 to March 2020, where 200 between 21-50 years old with the ASA physical status class I and II were included in the study. The study solution of Group A was prepared with 50 mg (1 ml) of Ketamine, 50 mg(5 ml) of Propofol and 4 ml of Normal Saline (NS) in a 10 ml syringe. The ratio of 1:1 was designed for ketofol group. Group A patients received 50 mg (5 ml) Ketofol (25 mg ketamine and 25 mg propofol) and Group B received 50 mg(5 ml) of propofol. **Result:** During the study, in group-A, duration of surgery was 16.21 ± 9.3 min whereas in group-B it was 18.25 ± 9.5 . According to intraoperative complication where in group-A, 14% had decreased level of $SPO_2 < 90\%$ where as in group-B it was 22% followed by 11% had apnea in group-A whereas in group B it was 9%. Also, in group A 3% had slow respiration, in group B it was 7%. Mean induction time for group-A was 30.20 ± 4.17 where as in group-B it was 42.35 ± 5.13 . In postoperative complications where in group. **Conclusion:** In mild surgical operations, mixing ketamin (ketofol) with propofol alone has some benefits relative to anesthesia. Because of the complementary action of reducing the dosage of both medications, the mixture has fewer antagonistic effects than each drug itself. For better outcomes, further analysis is needed.

KEYWORD: Ketofol, propofol, surgical procedure.**INTRODUCTION**

Sedative and analgesic drugs are commonly administered for procedural sedation. Titration of anesthetic doses must be performed with care and the patients must be permanently monitored. A combination of ketamine and propofol has many positive anesthetic characteristics. There is remarkable interest in ketofol as a drug for procedural sedation.^[1]

Ketamine and propofol has been used in separate syringes in the same patient successfully in variety of procedures including sedation of spinal anesthesia, minor ophthalmological procedures, gynecological and surgical procedures in children and adults.^[2-3] The main advantage of this combination is the opposing effect in the hemodynamic and respiratory effects of each drug. 5-7 In a prospective study carried in 1264 patients undergoing anesthesia for the surgical procedures with Ketofol (ketamine with propofol), concluded that this combination is safe and effective.^[4]

In this study our main goal is to evaluate efficiency between ketofol and propofol in case of minor surgical procedure in Bangladesh.

OBJECTIVE**General objective**

- To assess effectiveness between ketofol and propofol in minor surgical procedure in Bangladesh.

Specific objective

- To detect anesthetic parameters of the patients.
- To identify postoperative complications.

METHODOLOGY

Type of study	Experimental study
Place of study	Tertiary medical college and hospital.
Study period	January 2019 to March 2020
Study population	200 between 21-50 years old with the ASA physical status class I and II were included in the study.
Sampling technique	Purposive

Method

➤ During the study, after taking consent from the patients. All patients were induced with 1 mg of inj butorphanol and 2mg of Inj midazolam intravenously. The study solution of Group A was prepared with 50 mg (1 ml) of Ketamine, 50 mg(5 ml) of Propofol and 4 ml of Normal Saline (NS) in a 10 ml syringe. The ratio of 1:1 was designed for ketofol group. Group A patients received 50 mg (5 ml) Ketofol (25 mg) ketamine and 25 mg propofol) and Group B received 50 mg(5 ml) of propofol.

Data analysis

➤ After collection, data were entered into a personal computer and were edited, analyzed, plotted in graphs and tables. Data were analyzed by chi square test, Mann Whitney U tests, using the statistical package for social sciences (SPSS) version 20.

RESULT

In table-1 shows age distribution of the patients where most of the patients in both groups belong to 31-40 years age group, 52% and 65%, followed by 36% and 28% in 21-30 years age group, 7% in 41-50 years age group. The following table is given below in detail:

Table 1: Age distribution of the patients.

Age group	Group-A, %	Group-B, %
21-30	36%	28%
31-40	52%	65%
41-50	7%	7%

In figure-1 shows gender distribution of the patients where in group-A 44% were male, 56% were female. Whereas in group-B 38% were male and 62% were female. The following figure is given below in detail:

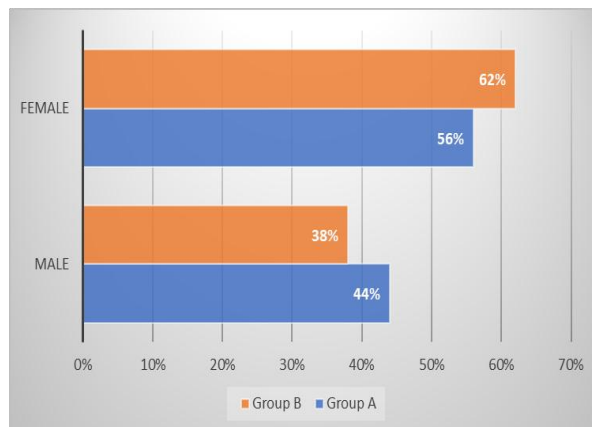


Figure 1: Gender distribution of the patients.

In table-2 shows duration of the surgery where in group-A, it was 16.21 ± 9.3 min whereas in group-B it was 18.25 ± 9.5. the following table is given below in detail:

Table 2: Duration of the surgery.

Duration of surgery	Group-A	Group-B
	16.21 ± 9.3 min	18.25 ± 9.5 min

In figure-2 shows intraoperative complication where in group-A, 14% had decreased level of SPO2<90% where as in group-B it was 22% followed by 11% had apnea in group-A whereas in group B it was 9%. Also, in group A 3% had slow respiration, in group B it was 7%. The following figure is given below in detail:

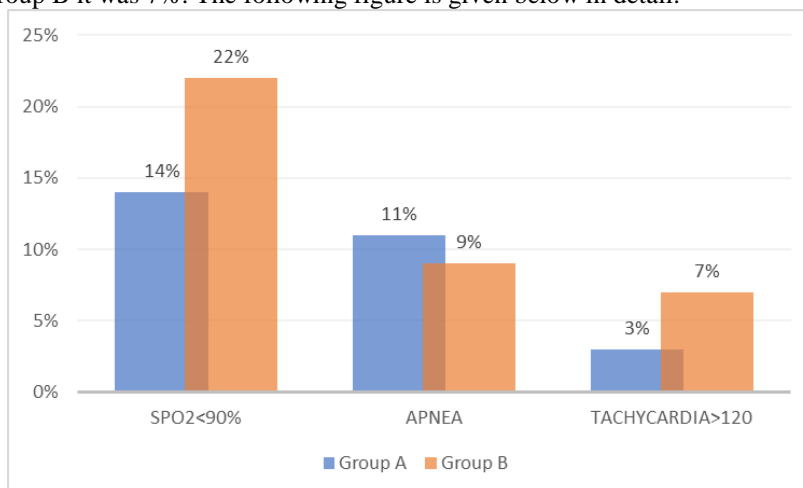


Figure 2: Intraoperative complication.

In table-3 shows comparison of anesthesia parameters where mean induction time for group-A was 30.20 ± 4.17 where as in group-B it was 42.35 ± 5.13 . The following table is given below in detail:

Table 3: Comparison of anesthesia parameters.

Age group	Group-A, %	Group-B, %
Mean induction time	30.20 ± 4.17	42.35 ± 5.13
Mean recovery time (min)	4.26 ± 2.21	5.15 ± 3.50
Study solution	9.19 ± 4.35	13.43 ± 3.26

In figure-3 shows postoperative complications where in group-A, 9% had postoperative pain where as in group-B it was 16%. The following figure is given below in detail:

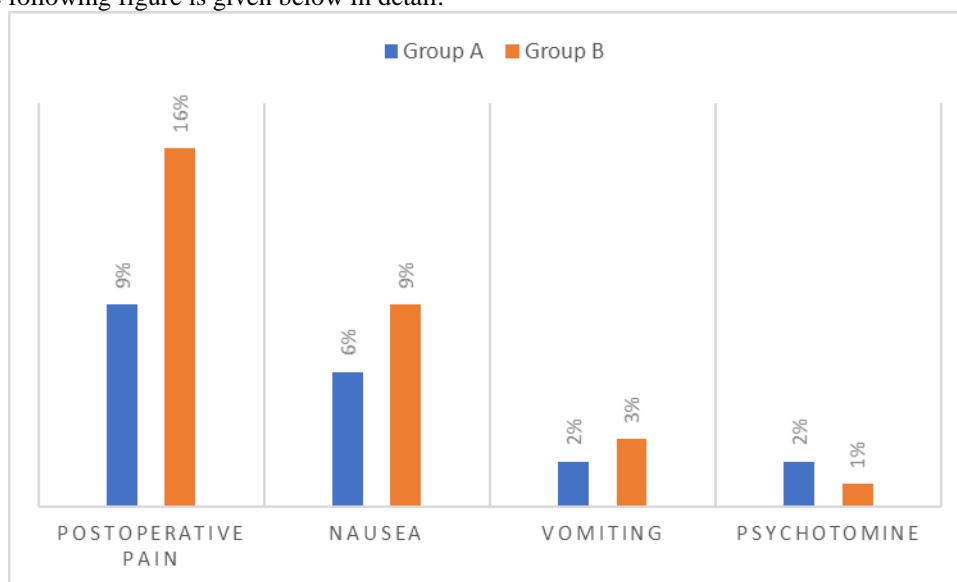


Figure 3: Postoperative complications.

DISCUSSION

Propofol is an IV anesthetic drug used to cause intravenous anesthesia and to retain it. The recovery from anesthesia caused by propofol is usually fast with lower side effects compared to other inductors.

This mixture has the property of the opposite respiratory and cardiovascular effects of each drug. This combination also decreases the dosage of costly medication propofol to meet the desired result. Ketamine and propofol have been successfully used in combination of divided syringes for small procedures in adults and children by many authors.^[4-5]

As a consequence of the additive effects of both treatments, the cumulative outcome is less harmful than that of both narcotics alone. There were a variety of different levels of ketamine-propofol formulations used for sedation in women who were undergoing breast biopsy with no serious air problems.^[5]

After four hours of the procedure, both patients were relaxed in a postoperative room and released, and because of postoperative problems no patient was admitted. Pressure, nausea and vomiting and both successfully treated and released on one day were the only postoperative complications seen.

19 patients had shallow and slow respiration and 5 patients had apnea in propofol group whereas 13 patients had shallow and slow respiration and 7 had apnea in ketofol group reported in one study.^[7] Where as in our study in group-A(ketofol), 14% had decreased level of $SPO_2 < 90\%$ where as in group-B it was 22% followed by 11% had apnea in group-A whereas in group B it was 9%. Also, in group A 3% had slow respiration, in group B it was 7%.

The mean induction time required for the Ketofol group was 32.18 ± 4.17 sec and for propofol group it was 39.34 ± 5.12 sec was noted in one study.^[8] which was quite similar to our study where mean induction time for group-A(ketofol) was 30.20 ± 4.18 where as in group-B (propofol) it was 42.35 ± 5.13 .

CONCLUSION

In mild surgical operations, mixing ketamin (ketofol) with propofol alone has some benefits relative to anesthesia. Because of the complementary action of reducing the dosage of both medications, the mixture has fewer antagonistic effects than each drug itself. For better outcomes, further analysis is needed.

REFERENCE

1. Bahn EL, Holt KR. Procedural sedation and analgesia: a review and new concepts. *Emerg Med Clin North Am.*, 2005; 23(2): 503-17.
2. Ketofol: a combination of ketamine and propofol. *J of anesthesia and critical care*, 2014; 1(5).
3. The Association of Obstetric Anaesthesiologists Guidelines for Anaesthetic Management of Patients Undergoing Tubal Ligation: Editorial. *J Obstet Anaesth Crit Care*, 2011; 1: 1-2.
4. Wang Y, Jiang X, Pang L, et al. A randomized double-blind controlled study of the efficacy of ketofol with propofol-fentanyl and propofol alone in termination of pregnancy. *Afr J Pharm Pharmacol*, 2012; 6: 2510-4.
5. Saeed E. Ketofol infusion as a procedural sedation and analgesia modality for minor orthopedic surgeries: Evaluation of dose-outcome relation. *Ain Shams J Anaesthesiol*, 2011; 4: 63-74
6. Kurdi MS, Theerth KA, Dewa RS. Ketamine: current application in anesthesia, pain and critical care. *Anesth Essays and Res.*, Sep-Dec, 2014; 8(3): 283-290.
7. Isik Y, Kurdoglu Z, Goktas U, Kati I, Sozen D. Comparison of propofol and ketofol in minor gynecological interventions. *J Clin Exp Invest*, Sep 2015; 6(3): 244-249.
8. Montero RF, Clark LD, Tolan MM et al. The effects of small dose ketamine on propofol sedation: respiration, postoperative mood, perception, cognition and pain. *Anesthesia Analgesia*, 2001; 92: 1465-1469.