ISSN: 0975-3583, 0976-2833 VOL9, ISSUE3, 2018

Original Research Article

TO STUDY THE ANTIEMETIC EFFECT OF ONDANSETRON AND CONTROL GROUP.

Dr. Kannam Peddulu[1] (Associate Professor)

Dept. Anaesthesiology, Amaltas Institute of Medical Sciences, Dewas[1]

Corresponding Author: Dr. Kannam Peddulu

Abstract

Background & Methods: The aim of the study is to study the antiemetic effect of Ondansetron, Ramosetron and Palonosetron. Detailed history of patients complaints were noted. General and systemic examination of cardiovascular and respiratory system were done. Basic investigations like blood haemoglobin, total count and differential count, blood sugar estimation, blood urea and serum creatinine. Other investigations included E.C.G. and Chest X-ray .

Results: Incidence of emetic episodes in group I at extubation is 5, 0-4 hrs is 5, 4-8 hrs is 3, 8-12 hrs is 2, 12-16 hrs is 1, 16-20 hrs is 1 and 20-24 hrs is 1. Incidence of emetic episodes in group II at extubation is 3, 0-4 hrs is 3, 4-8 hrs is 3, 8-12 hrs is 2, 12-16 hrs is 0, 16-20 hrs is 1 and 20-24 hrs is 0.

Conclusion: Ondansetron in dose of 0.1 mg/kg i.v given just before induction of anaesthesia, the incidence of post-operative nausea and vomiting was found to be 60%. The antiemetic effect of against Ondansetron is significant. No significant side effect has been found in the present study with use of these drugs except headache which is found more in Ondansetron group.

Keywords: antiemetic, ondansetron & saline.

Study Design: Observational Study.

1. Introduction

Nausea is defined as an unpleasant sensation associated with awareness of the urge to vomit. It is usually felt in the back of the throat and epigastrium and is accompanied by loss of gastric tone, duodenal contractions and reflux of intestinal contents into the stomach[1]. Retching is defined as labored, spasmodic, rhythmic contractions of the respiratory muscles including the diaphragm, chest wall and abdominal wall muscles without the expulsion of gastric contents[2].

Vomiting or emesis is the forceful expulsion of gastric contents from the mouth and is brought about by the powerful sustained contraction of the abdominal muscles, descent of the diaphragm and opening of the gastric cardia[3]. Nausea and vomiting are important defense

ISSN: 0975-3583, 0976-2833 VOL9, ISSUE3, 2018

mechanisms against the ingestion of toxins. The preabsorptive (upper gut) and post absorptive (circulation) detectors trigger a series of events when some toxin is ingested[4].
PONV may occur with wide variety of structurally diverse anaesthetic agents. This may be due to the state of anaesthesia itself and the direct pharmacological effects of the anaesthetic agents. During anaesthesia, the patients may be in recumbent posture and immobile for an extended period, particularly if muscle relaxants are used, this leads to reduction in the tonic discharge from the vestibular labyrinths for the duration of surgery[5].

2. Material and Methods

This study was carried out in 40 cases at Osmania M. C. & MNJ Cancer Hospital, Hyderabad for 01 year, of either sex, age, ranging from 20 to 60 yrs, belonging to ASA grade I and II, undergoing major routine abdominal and gynaecological surgeries. Detailed history of patients complaints were noted. General and systemic examination of cardiovascular and respiratory system were done. Basic investigations like blood haemoglobin, total count and differential count, blood sugar estimation, blood urea and serum creatinine. Other investigations included E.C.G. and Chest X-ray.

Patients were divided in 2 groups of 20 each:

1. Group I which received 4 ml Normal saline i/v (control).
2. Group II which received inj. Ondansetron 0.1 mg/kg i/v.

Inclusion criteria:

1. Patient aged between 20 to 60 years.
2. Patient belonging to ASA I and ASA II grade.

Exclusion criteria:

1. Renal impairment and hepatic disease.
2. Neurological and endocrinal abnormalities.

3. Result

Table 1: Distribution of patients according to age and sex

Age Group (Years)	Group I (n=20)		Group II (n=20)		Total	
	M	F	M	F	No.	%
20-30	3	2	2	3	10	25%
31-40	3	3	2	4	12	30%
41-50	2	2	2	1	07	17.5%
51-60	3	2	4	2	11	27.5%
Total	11	9	10	10	40	100%

ISSN: 0975-3583, 0976-2833 VOL9, ISSUE3, 2018

Total percent of age of patients in age group 20-30 years in different groups is (25%). Total percentage of patient in age group 31-40 years in all groups is 30%, percentage age of patients in 41-50 years in all groups is 17.5%, percentage age of patients in 51-60 years in all groups is 27.5%.

Table 2: Distribution of patients in different Operative procedures

Procedure	No. of Patients	Group I	Group II
Gynecological	Male	-	-
	Female	5	6
	Total	5	6
Abdominal	Male	10	10
	Female	5	4
	Total	15	14

Total gynaecological procedures in group I is 5, group II 6 Thus, the total number of patients in group I is 15, group II 14.

Table 3: Incidence of Nausea & vomiting in Group II

Total No. of Patients	Patients with Nausea, Vomiting or retching		Patients without Nausea, Vomiting or retching	
	No.	%	No.	%
20	12	60%	8	40%

Incidence of nausea and vomiting in group II was 12(60%) and Incidence of patients without nausea and vomiting in group II was 8(40%).

Table 4: Incidence of emetic-episodes among different groups at different visits

Postoperative visits	Group I	Group II
At extubation	5	3
0-4 Hrs.	5	3
4-8 hrs.	3	3
8-12 hrs.	2	2
12-16 hrs	1	-
16-20 hrs.	1	1
20-24 hrs.	1	-

Incidence of emetic episodes in group I at extubation is 5, 0-4 hrs is 5, 4-8 hrs is 3, 8-12 hrs is 2, 12-16 hrs is 1, 16-20 hrs is 1 and 20-24 hrs is 1. Incidence of emetic episodes in group II at extubation is 3, 0-4 hrs is 3, 4-8 hrs is 3, 8-12 hrs is 2, 12-16 hrs is 0, 16-20 hrs is 1 and 20-24 hrs is 0.

ISSN: 0975-3583, 0976-2833 VOL9, ISSUE3, 2018

4. Discussion

Premedication done with inj. Glycopyrrolate 0.02 mg/kg intramuscular. When the patient was brought to the operation theatre, his/her pulse rate and blood pressure were recorded. An intravenous access with an appropriate size cannula was obtained[6]. 4ml Normal saline i/v in group I, Inj. Ondansetron 0.1 mg/kg i/v in group II, inj. Ramosetron 6 µg/kg i/v in group III, Inj. Palonosetron 1.5 µg/kg i/v in group IV respectively 30 second prior to induction[7].
After preoxygenation for 3 min general anaesthesia was induced with inj. Fentanyl 2µg/kg i/v as an analgesic. Inj. Propofol 2 mg /kg i/v. Relaxation was obtained by giving inj. Succinylcholine 1.5mg/kg i/v. Orotracheal intubation with an appropriate size cuffed portex endotracheal tube and after the cuff inflation, proper fixing of tube was done, then Ryles tube insertion and suction of gastric content was done. Patient is maintained with oxygen and nitrous oxide (50:50), halothane (0.5-1%) intermittently[8]. After giving inj. Atracurium 0.5mg/kg i/v loading dose and anaesthesia is maintained with inj. Atracurium 0.1 mg/kg i/v every 20 minutes fixed interval. Controlled ventilation done with 2 litre Bains circuit. The patients vital parameters like pulse, blood pressure, oxygen saturation were monitored throughout the surgery.
Out of 20 studied cases commonest complication seen was Headache. Three patients had headache usually frontal, mild to moderate in intensity. Out of three only one patient required analgesic for headache. Two patient had drowsiness and one having hypersensitivity reaction[9].
Study carried out by Marty et al in 1990 found the only side effect of Ondansetron was headache. Similarly L.Claybon in 1994 found headache as a common side effect of Ondansetron given for the prevention of post-operative nausea and vomiting. However exact cause of headache is still not known[10]. Besides this no other significant side effect was seen in this study. McKenzic R. et in 1993 concluded that Ondansetron was generally well tolerated, and found no untoward changes in central nervous system including sedation.

5. Conclusion

Ondansetron in dose of 0.1 mg/kg i.v given just before induction of anaesthesia, the incidence of post-operative nausea and vomiting was found to be 60%. The antiemetic effect of against Ondansetron is significant. No significant side effect has been found in the present study with use of these drugs except headache which is found more in Ondansetron group.

6. References

1. Ho CM, Ho ST, Wang JJ, Tsai SK, Chai CY. Dexamethasone has a central antiemetic mechanism in decerebrated cats.Anaesth Analg 2004;99:734-739.
2. Elhakim M, Ali MN, Rashed I, Mustafa K, Riad, Refat M. Dexamethasone reduces postoperative vomiting and pain after paediatric tonsillectomy. Can J Anaesth 2003;50(4):392-397.

ISSN: 0975-3583, 0976-2833 VOL9, ISSUE3, 2018

3. Gan JT, Coop A, Philip KB, Kytril study groups. A randomized, double blind study of granisetron plus dexamethasone versus Ondansetron plus dexamethasone to prevent PONV in patients undergoing abdominal hysterectomy. Anaesth Analg 2005;101:1323-1329.
4. Sanchez-Ledesma MR, Lopez-Olaondo L, Pueyo FJ, Carrascosa F, Ortega A. A comparison of three antiemetic combinations for the prevention of postoperative nausea and vomiting. Anaesth Analg 2002;95:1590-1595.
5. Lee Y, Hsien-Young L, Pei-Chin L, Shen-Her H, You-Sheng L. Dexamethasone prevents postoperative nausea and vomiting most effectively in women with motion sickness. Can J Anaesth 2003;50(3):232-237.
6. Gan JT, Meyer T, Apfel CC, Chung F, Davis JP, Eubanks S. Consensus guidelines for management postoperative nausea and vomiting. Anaesth Analg 2003;97:62-71.
7. Rusch D, Eberhart L, Biedler A, Dethling J, Apfel CC. Prospective application of a simplified risk score to prevent PONV. Can J Anaesth 2005;52:478-484.
8. Everett LL. Can the risk of postoperative nausea and vomiting be identified and lowered during the preoperative assessment. Int Anaesthesiology Clin 2002;40:47-60.
9. Watcha MF. Postoperative nausea and emesis. Anaesthesiology Clin N Am 2002;20:471-484.
10. Elhakim M, Nafie M, Mahmoud K, Ateef A. Dexamethasone 8mg in combination with Ondansetron 4mg appears to be the optimal dose for the prevention of nausea and vomiting after laparoscopic cholecystectomy. Can J Anaesth 2002;49(9):922-926.