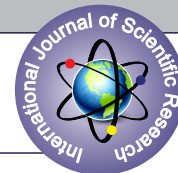


COMPARISON OF ONDANSETRON VERSUS CHEWING GUM FOR PREVENTION OF POST OPERATIVE NAUSEA AND VOMITING IN PATIENTS UNDERGOING ELECTIVE LSCS: A RANDOMISED CONTROL TRIAL



Anaesthesiology

Dr Sunita Meena	Associate Professor, Department of Anesthesiology, S.M.S. Medical College, Jaipur, Rajasthan, India.
Dr. Mahendra Kumar	Senior Resident, Department of Anesthesiology, S.M.S. Medical College, Jaipur, Rajasthan, India.
Dr Sunil Kuldeep*	Senior Resident, Department of Anesthesiology, American institute of Medical College, Udaipur, Rajasthan, India. *Corresponding Author

ABSTRACT

Background- The aim of this present study is to evaluate efficacy and safety of chewing gum as an alternative to Ondansetron in prevention of postoperative nausea and vomiting (PONV) in parturients undergoing elective LSCS under spinal anesthesia.

Materials And Methods- One hundred pregnant women who were found eligible as per inclusion and exclusion criteria were randomized into two equal groups by simple randomization into Group A (n=50) who were given sugar free chewing gum which was to be chewed for 30 minutes three times a day starting immediately after cesarean section and Group B (n=50) who received Inj. Ondansetron 4mg twice a day post operatively.

Results- There was no statistically significant difference between the two groups in terms of demographic characteristics. The incidence of nausea and vomiting was significantly less in Group A compared with Group B at 6 and 12 hours post operatively ($p < 0.001$). There was no significant difference of this variable at 18 and 24 hours in both groups.

Conclusion- Gum chewing after cesarean section is safe, well tolerated, and acceptable for prevention of post-operative nausea and vomiting and rapid resumption of intestinal motility and has potential impact on reducing the overall healthcare costs in case of routine implementation.

KEYWORDS

Gum chewing, PONV, Pregnant

INTRODUCTION

PONV is a leading cause of admission after planned ambulatory surgery and may lead to dehydration, bleeding, surgical wound complications, and aspiration of gastric contents. The usual drugs used for prevention or treatment of this have adverse effects such as intense sedation, dystonic reactions, restlessness and extrapyramidal symptoms. The etiology and consequences of PONV are complex and multifactorial with patients' medical- and surgery-related factors. A thorough understanding of these factors, as well as the neuropharmacology of multiple emetic receptors (dopaminergic, muscarinic, cholinergic, opioid, histamine, and serotonin) and physiology (cranial nerves VIII, IX, X, and gastrointestinal reflex) relating to PONV is necessary to manage PONV.¹

Chewing gum has been prospectively evaluated as a therapy to reduce postoperative nausea and vomiting in breast and laparoscopic surgery. Postulated mechanisms of its effect surround the principle of 'sham feeding', which stimulates bowel motility via cephalic- vagal stimulation.² Chewing gum has also been linked to lower cortisol concentrations, improve stress and anxiety, and more positive mood in the research setting.³

MATERIAL AND METHODS

This was a Prospective Randomized Trial. A total 100 patients were included in this study. The patients who gave written informed consent with ASA-I or ASA-II posted for elective caesarian delivery were included in the study. The other inclusion criteria were patients between 19-35 years of age and with full term singleton pregnancy. Patients with essential hypertension, pre-eclampsia, diabetes, anemia, heart disease, multiple pregnancy, fetal distress, abruptio placentae/ placenta previa, any contraindication to spinal anaesthesia, known allergy to local anesthetics, unable to chew gum or complaining of gum or dental problems and who could be exposed to any intra-operative and post-operative complications were excluded from the study.

Pre-operative evaluation was done a day before scheduled surgery. After explaining the procedure, the patients were advised overnight fasting. Spinal anesthesia was given to all patients in left lateral position with 2ml of 0.5% bupivacaine heavy in L₃ L₄ space. The patients were randomly assigned into two equal groups of fifty each.

Based on the observer's assessment, when a score of five in alertness/sedation was achieved and the patient was not sleeping in between observations, patients in Group I were given one strip of sugar free gum to be chewed for 30 minutes every eighth hourly.

Patients randomized to Group-II received Inj. Ondansetron 4mg intravenously immediately after cesarean section. Rescue anti-emetics i.e Metaclopramide 10mg IV / Dexamethasone 4mg IV/ Prochlorperazine 12.5mg IV/ Droperidol 0.625mg IV/ Promethazine 6.25mg IV were planned to be used if the first-line therapy was not fully successful.

RESULTS

Table 1. General Characteristics

Variable	Group-I	Group-II	p-value
Age in yrs	21.32 ± 3.60	20.36 ± 3.15	>0.05

Both group were comparable.

Table 2. PONV

PONV	Group-I	Group-II	p-value
Immediate	2(4.00%)	2(4.00%)	>0.05
6 Hours	1(2.00%)	13(26.00%)	<0.001
12 Hours	1(2.00%)	7(14.00%)	<0.001
18 Hours	3(6.00%)	0(0.00%)	>0.05
24 Hours	0(0.00%)	0(0.00%)	

On the scale for relief of PONV, it was observed that there was full resolution of PONV in more number of patients in chewing gum group than in the Ondansetron group.

DISCUSSION

PONV during spinal anaesthesia for elective cesarean delivery may occur in upto 66% of patients. The risk factors of emetic symptoms in pregnancy are hormonal changes, smoking habit, age, pain, history of motion sickness or previous postoperative emesis, hypotension, surgical procedure, and anaesthetic technique.⁴ Our treatment groups were similar with regard to maternal demographic and operating management that considered being risk factors for postoperative emetic symptoms. Therefore, the difference in incidence and severity of nausea and vomiting among the study groups can be attributed to the study drug administration.

Zhang, L et al, conducted a meta-analysis on a total of 13 RCTs which included 2233 patients. The results showed that chewing gum after cesarean delivery can effectively shorten the recovery time of bowel sounds, passage of flatus and first defecation.⁵

CONCLUSION

Chewing gum is considered safe, well accepted better alternative to Ondansetron for the treatment of PONV in this randomized controlled

study undergoing cesarean delivery under spinal anaesthesia. It also results in rapid resumption of intestinal motility, with potential impact on reducing the overall healthcare costs in case of routine implementation.

REFERENCES

1. Peter H Pan Charles H Moore Comparing the efficacy of prophylactic metoclopramide, ondansetron, and placebo in cesarean section patients given epidural anesthesia *J Clin Anesth* 2001;13:643-650 Elsevier BV
2. J.N. Darvall M Handscombe K Leslie Chewing gum for the treatment of postoperative nausea and vomiting: a pilot randomized controlled trial *Br J Anaesth* 2017;118:1839-1842 Elsevier BV
3. Andrew Scholey Crystal Haskell Bernadette Robertson David Kennedy Anthea Milne Mark Wetherell Chewing gum alleviates negative mood and reduces cortisol during acute laboratory psychological stress *Physiol Behav* 2009;97:3-12 Elsevier BV
4. Abanoub Gabra Risk Factors of Hyperemesis Gravidarum: Review Article *Health Sci J* 2018;12:660-669 XScitechnol Biosoft Pvt. Ltd.
5. L Zhang Y L Heng H Hu X Liang Effect of Gum-Chewing after Cesarean Section on Gastrointestinal Function Recovery: A Systematic Review and Meta-Analysis of Randomized Trials *Yangtze Med* 2019;3:7989