

A Cross-sectional Analysis of Preanesthetic Medications Used in Patients Undergoing Exploratory Laparotomy at a Tertiary Care Centre

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ABSTRACT

Introduction: Preanesthetic medications are used depending on the clinical profile of the patient and the type and duration of operation. The preanesthetic medication correlates with various outcomes such as duration of postoperative recovery, post-operative analgesia requirement, and hospital stay.

Materials and Methodology: Total 100 patients undergoing exploratory laparotomy were selected for the study. Inclusion criteria were those who gave consent or all patient of the postoperative ward who was willing to participate in the study and the participants of both sexes aged 10 years to 70 years. Exclusion criteria were those that do not give consent, age below 10 years and above 70 years.

Results: Out of all 100 subjects 68 were male and 32 were female. Indications for exploratory laparotomy was found maximum in 37 subjects for perforation peritonitis followed by intestinal obstruction in 22 subjects, appendicular perforation in 11 subjects, penetrating trauma to abdomen in 10 subjects, adhesion obstruction in 8 subjects, liver abscess in 8 subjects, right inguinal hernia and abdominal abscess in 2 subjects each where gunshot injury and ovarian mass found in one subject each.

Conclusion: The two major pre-anaesthetic medications used in patients undergoing exploratory laparotomy were ondansetron and tramadol. Glycopyrrolate was the only anticholinergic agent which has been successfully used in one patient.

Keywords: Drug Utilisation, Exploratory Laparoscopy, Pre-Anaesthetic Medication.

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INTRODUCTION

About one-third of surgical patients who received general anesthesia experience postoperative nausea and vomiting (PONV)¹ After pain, PONV is the second most complaint in the post-operative ward. The patients who are not under PONV prophylaxis, the incidence rate of PONV was 70-80 %.² To minimize the PONV several new drugs have been introduced but the incidence rate remains significantly high, ranging from 30%-35%.³ So to reduce it or to improve and for better prophylaxis combinations of drugs are used. Pre-anaesthetic medications are usually prescribed and administered to prevent anxiety, pain and postoperative complications that are associated in patients who are undergoing surgery under general anaesthesia. Pre-anaesthetic medications are also useful to facilitate the operative procedures.⁴

Preanesthetic medications are used depending on the clinical profile of the patient and the type and duration of operation. The preanesthetic medication correlates with various outcomes such

as duration of postoperative recovery, post-operative analgesia requirement, and hospital stay. Pharmacological agents such as benzodiazepines, opioid analgesics, anticholinergics, H2 receptor blockers, proton-pump inhibitors, and gastrokinetic drugs are administered as preanesthetic agents. There are few studies on pattern of preanesthetic medication use in south India.⁵ Hence the presented conduct to assess the usage of pre-anaesthetic medication in patients undergoing exploratory laparotomy.

MATERIALS AND METHODOLOGY

Total 100 patients undergoing exploratory laparotomy were selected for the study. Inclusion criteria were those who gave consent or all patient of the postoperative ward who was willing to participate in the study and the participants of both sexes aged 10 years to 70 years. Exclusion criteria were those that do not give consent, age below 10 years and above 70 years. A semi-structured questionnaire and an observational checklist were used

for data collection and face to face interviews were taken. The confidentiality and privacy of the study were maintained; the name of the individuals or the participating group was not disclosed after the study. The complete profile of the patients was regularly collected in a pre-designed proforma which included patient's demographic details, provisional diagnosis, diagnostic methods, co-morbidities, previous history of any medication and indications for exploratory laparotomy. The drugs being used during Pre-anaesthetic medications were noted down elaborately. The mean number of drugs prescribed as pre-anaesthetic medications; percentage of drugs prescribed by generic name were assessed using the WHO (world health organisation) core drug prescribing indicators. Statistical analysis was performed using SPSS software,

Table 1: Age wise distribution of study subjects

Age range	Frequency
11-20 years	5
20-30 years	15
30-40 years	13
40-50 years	12
50-60 years	23
60-70 years	32

Table 2: Gender distribution of study subjects

Gender	Frequency
Male	68
female	32

Table 3: Indications for the exploratory laparotomy

Surgical indications	Number of patients
Perforation peritonitis	37
Intestinal obstruction	22
Appendicular perforation	11
Penetrating trauma to abdomen	10
Adhesion obstruction	8
Liver abscess	4
Obstruction by food bolus	3
Right inguinal hernia	2
Abdominal abscess	2
Gun-shot injury	1
Ovarian mass	1

Table 4: Drugs used in pre-anaesthetic medication.

Drug name	Number of patients
Ondansetron	100
Tramadol	100
Hydrocortisone	3
Pantoprazole	1
Glycopyrrolate	1

RESULTS

Results found that 5 subjects belonged to 10-20 years of age, 15 subjects belonged to 20-30 years of age, 13 subjects belonged to 30-40 years of age, 12 subjects belonged to 40-50 years of age, 23 subjects belonged to 50-60 years of age and 32 subjects belong to 60-70 years of age group out of all 100 subjects 68 were male and 32 were female. Indications for exploratory laparotomy was found maximum in 37 subjects for perforation peritonitis followed by intestinal obstruction in 22 subjects, appendicular perforation in 11 subjects, penetrating trauma to abdomen in 10 subjects, adhesion obstruction in 8 subjects, liver abscess in 8 subjects, right inguinal hernia and abdominal abscess in 2 subjects each where gunshot injury and ovarian mass found in one subject each. As preanesthetic Ondansetron and tramadol given in all study subjects, Hydrocortisone in 3 subjects, Pantoprazole and Glycopyrrolate in one subject each.

DISCUSSION

Drug utilization studies could invariably help us to better understand the appropriate drug and dosage based on the patients need, type and the duration of surgeries. Drug utilization studies are also reported to be helpful for scientific as well as administrative usage in large hospital settings. Significant inputs into the usage of medicines, indications, side effects and drug interactions could be obtained from such studies. The agents that are used for general anaesthesia are a major and important drug category in use in which the clinical practice has to be taken into account of various aspects of convenience and safety. And the use of pre-anaesthetic medicines for effective facilitation of surgery and reduction in the risk of surgery associated complications is a common practice globally. There might be geographical changes in the pattern of pre-anaesthetic medicine usage.⁷⁻⁸ The presented study found that 5 subjects belonged to 10-20 years of age, 15 subjects belonged to 20-30 years of age, 13 subjects belonged to 30-40 years of age, 12 subjects belonged to 40-50 years of age, 23 subjects belonged to 50-60 years of age and 32 subjects belong to 60-70 years of age group out of all 100 subjects 68 were male and 32 were female. Indications for exploratory laparotomy was found maximum in 37 subjects for perforation peritonitis followed by intestinal obstruction in 22 subjects, appendicular perforation in 11 subjects, penetrating trauma to abdomen in 10 subjects, adhesion obstruction in 8 subjects, liver abscess in 8 subjects, right inguinal hernia and abdominal abscess in 2 subjects each where gunshot injury and ovarian mass found in one subject each. As preanesthetic Ondansetron and tramadol given in all study subjects, Hydrocortisone in 3 subjects, Pantoprazole and Glycopyrrolate in one subject each.

These results are in accordance with some other studies conducted in India by Kulkarni et al⁶ observed carcinomas/tumour as the major cause for major surgical procedures. This might be the due to the fact that they have enlisted all the patients who were undergoing major surgical procedures under general anaesthesia. Pre-anaesthetic medications are used to reduce gastric acid, volume of gastric secretion, increase gastric pH, reduce the risk of nausea, vomiting and aspiration of gastric contents during post-operative period.⁷⁻⁹ Various adverse effects of drugs such as anti-histaminics, anticholinergics, dopamine antagonists and phenothiazine derivatives have limited their use in

the effective management of post-operative nausea and vomiting.^{10,11} Here the glycopyrrolate in 1 subject has been utilized which were more potent than atropine, used routinely as a pre-medication purpose and have less risk to the cardiovascular system, better control of oropharyngeal secretions during reversal stage-when compared to Zeev N and Mirakur RK, et al.^{12, 13} where atropine was the most commonly used. Another most important drugs utilized in our study as a pre-anesthetic medication was Ondansetron (69.0%) from antiemetic drugs. Establishment of 5-HT3 receptor antagonists approved by FDA brings drastic change in the prevention of postoperative nausea and vomiting.

CONCLUSION

The two major pre-anaesthetic medications used in patients undergoing exploratory laparotomy were ondansetron and tramadol. Glycopyrrolate was the only anticholinergic agent which has been successfully used in one patient.

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