

The Assessment of the Practice of Premedication before Anesthesia, 2020: A Cross-Sectional Study

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ABSTRACT

Background: Any drug given before anesthesia is called premedication. Premedication is used to prepare the patient for anesthesia and provide optimal conditions for surgery. Generally, anesthetists administer a standardized preoperative pre medications to improve the quality of patient outcome. The aim of this study was to audit the patterns of the practice of pre medications before anesthesia/surgery.

Methods: For this retrospective study a sample of 30 patients, who underwent surgery under general anesthesia during January 20 to 26/2020 were included. The information obtained from the standardized premedication form in each patient's file and interviewing the responsible anesthetists was audited using a self-generated checklist, based on the measures and criteria incorporated in the different literatures or sources. The data were entered and analyzed with Statistical Package for Social Sciences (SPSS) version 20.

Results: Although 100% of files retrieved contained the premedication form, none of these forms were fully completed according to the study checklist used. The result showed that out of 30 patients, twenty five (83.3%) patients did not receive pharmacologic anxiolytics (diazepam) followed by twenty two (73.3%) vagolytics (atropine) pre medications. Among the sampled patients, twenty four (80%) of patients pre medicated with both anti-emetics (metoclopramide) and anti-acid (cimetidine) and 23 (76.7%) pre medicated with dexamethasone (post-operative nausea vomiting prophylaxis).

Conclusions: The practice of preoperative pre medications were incomplete with regard to a number of criteria. Training and evaluation regarding administration of pre medications for patients by anesthetists is needed.

Keywords: Analgesia; Anxiolysis; Premedication; Anti-emetics; Antacids; Vagolytics

INTRODUCTION

Any drug given before anesthesia/surgery is known as premedication. It might be prescribed to achieve one of the following objectives: to decrease anxiety, to cause amnesia, as pre-emptive analgesia, as pre-emptive treatment for postoperative nausea and vomiting, to enhance gastric emptying, to increase the pH of the gastric contents, to decrease autonomic reflexes, to reduce secretions [1].

In addition, considering premedication as part of the preoperative visit, the anesthetist should assess the patients' current medications and decide which drugs should be continued/discontinued during the perioperative period. In

general, most drugs are given on the morning of surgery for elective patients. Anxiolytics are less commonly prescribed than other pre medications but are useful for some cases. Benzodiazepines are the most frequently used anxiolytic agents. Paracetamol and non-steroidal anti-inflammatory drugs reduce perioperative opioid requirements. Anti-emetics can be prescribed as a pre medicant. Antacids (e.g. H₂-receptor antagonists and proton-pump inhibitors) should be prescribed for patients at risk from aspiration of gastric contents. Antisialogogues are rarely needed but may be indicated for awake fibre-optic intubation [2].

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The use of premedication reduces the adverse physiological responses of bradycardia, systemic hypertension, and intracranial pressure. Perhaps more importantly, premedication decreases the pain and discomfort associated with the procedure. All newborn infants, therefore, should receive analgesic premedication for endotracheal intubation except in emergency situations. Based on current evidence, an optimal protocol for premedication is to administer a vagolytic (intravenous IV atropine 20 µg/kg), a rapid-acting analgesic (IV fentanyl 3 µg/kg to 5 µg/kg) and a short-duration muscle relaxant (IV succinylcholine 2 mg/kg) [3]. A double blinded trial done on premedication with diazepam 0.25 mg/kg by mouth was compared with placebo in patients undergoing day-case surgery under general anesthesia and concluded that diazepam decreased significantly preoperative discomfort and apprehension [4]. During intubation, the infant should be monitored closely-pulse oximetry is usually the minimum monitoring required. There may also be a need to increase the use of sedative premedication in high-risk groups especially preschool children [5].

Both pharmacological premedication and video distraction are effective strategies for controlling preoperative childhood anxiety [4]. Psychological education before an operation is a major part of premedication in terms of reducing the level of anxiety. Women and children are two vulnerable groups for anxiety (70%-80%). Psychological effects of a preoperative visit include not only building a friendly relationship among patients and anesthesiologists but also reducing anxiety through reassurance about anesthesia from an anesthesiologist [6,7]. The aims of premedication vary according to whether the surgery is elective (where it may be more important to lessen anxiety and provide sedation) or emergency (where emphasis is placed on the prevention of vomiting, reduction of gastric volume, and increase in gastric pH and provision of analgesia). The patient's regular medication must also be assessed at the pre-operative visit and the decision made whether it is to be continued or stopped pre-operatively. Oral premedication was the most common mode of delivery, probably due to better patient acceptance and ease of administration by nursing staff, but this delivery system has limitations [8].

Pre medicating the patient with the proper drugs should be a routine procedure before a general anesthetic is administered. Adequate sedation prior to anesthesia will not only relax the patient for the particular procedure, but will make him more receptive to future anesthetics. The action of the drug should depress body functions and decrease or prevent a "stress reaction" which may drastically alter the physiological status of the body [9].

MATERIALS AND METHODS

The practice of giving all necessary pre medications is less. So this audit helps to overcome this problem and increase the habit of using appropriate pre medications for improving patient outcomes depending on the purpose of each pre medications.

Aim

To improve quality of patient care during peri-operative period.

Objectives

To identify the gap between the current practice with the standards.

To ensure how and which pre medications given.

To equip and give attention for patients taking pre medication.

Methods

This original paper has been reported in line with the STROCSS criteria [12]. This paper registration unique identification number (UIN) is research registry 5438.

Audit population

All surgical patients that were admitted from January 20 to 26/2020.

Audit sample

All elective and emergency patients that were undergone operation with general anesthesia from January 20 to 26/2020. Using a consecutive sampling method of 30 patients who underwent in the study period was included.

Data collection method

The data were collected before induction of anesthesia by retrospective review of anesthesia record sheet (pre medication orders were confirmed from preoperative assessment forms) and by interviewing the responsible anesthetist for a certain patient which pre medications given before the procedure. My proposed standard was that all patients with no contraindications to premedication scheduled for anesthesia should receive premedication at the prescribed time. The data were collected using audit proforma (Table 1).

Anxiolytics	Expected result	Temporary semi-conscious, no fear
	Technique	Given intravenously or orally
	Risk	May be fully unconscious and fall down to the ground
Anti-pain	Expected result	Decrease pain sensation
	Technique	Orally or intravenously
	Risk	Nausea and vomiting, shortness of breath
Anti-emetics and PONV prophylaxis	Expected result	Increase gastric motility, decrease secretion
	Technique	Intravenously or orally

	Risk	Exacerbate bowel obstruction, decrease immunity
Vagolytics	Expected Result	Decrease secretion
	Technique	Intravenously
	Risk	Central anticholinergic syndrome, tachycardia, dysrhythmia

Table 1: Predefined criteria used to evaluate the administrations of the selected premedication forms.

RESULTS

The standardized premedication form was presented in 100% of the 30 selected patients'. However, none of the premedication forms were completed in accordance with the predefined measures and criteria. Among the sampled patients (30), 18 (60%) of patients were elective and 12 (40%) were emergency cases. Both anti-emetics and antacid pre medications was administered in 24 (80%) of the audited/sampled patients (Table 2).

Standards	Type of operation					
	Elective		Total (%)	Emergency		Total (%)
	Yes	No	Yes	No		
Non-pharmacologic	13 (72.2)	5 (27.8)	18 (60)	6 (50)	6 (50)	12 (40)
Pharmacologic (diazepam=0.25 mg/kg) Anti-emetics	3 (16.7)	15 (83.3)	18 (60)	2 (16.7)	10 (83.3)	12 (40)
Metoclopramide 10 mg (0.25 mg/kg) H2-blocker	16 (88.9)	2 (11.1)	18 (60)	8 (66.7)	4 (33.3)	12 (40)
Cimetidine (4-6 mg/kg)	14 (77.8)	4 (22.2)	18 (60)	10 (83.3)	2 (16.7)	12 (40)
Preemptive analgesic	2 (11.1)	1 (5.5)	3 (10)	1 (8.3)	2 (16.7)	3 (10)

a Paracetamol (20-40 mg/kg)						
Fentanyl (2 ug/kg)	2 (11.1)	1 (5.6)	3 (10)	5 (41.7)	1 (8.3)	6 (20)
Both fentanyl and paracetamol	10 (55.6)	2 (11.1)	12 (40)	2 (16.7)	1 (8.3)	3 (10)
PONV prophylaxis Dexamethasone (0.1 mg/kg)	15 (83.3)	3 (16.7)	18 (60)	8 (66.7)	4 (33.3)	12 (40)
Vagolytics Atropine (20 ug/kg)	4 (22.2)	14 (77.8)	18 (60)	4 (33.3)	8 (66.7)	12 (40)

PONV: Post-Operative Nausea and Vomiting

Table 2: Frequency of pre medications given for surgical patients underwent with general anesthesia from January 20-26, 2020 (N=30).

The patterns of pre medications showed that still need to do on some areas of administrations of drugs before anesthesia/surgery (Figure 1).

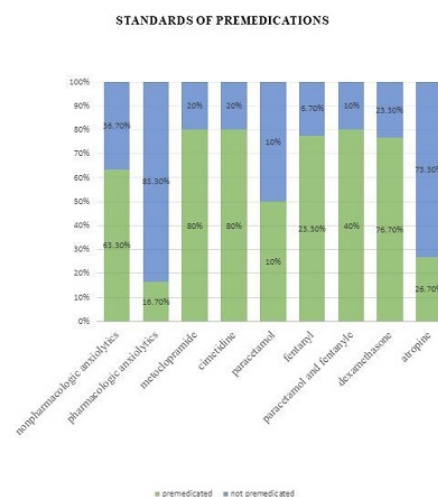


Figure 1: Patterns of pre medications administered for patients underwent surgery under anesthesia from January 20-26/2020, (N=30).

DISCUSSION

Even if the standardized premedication form was presented in all 30 patients, none of the pre medications standards were administered in accordance with all the predefined criteria used. This audit of current premedication practice assessed several important aspects in the effective administration of pre-operative medication (pre medications). Elective patients comprised 60% and emergency patients 40% of the total number. An audit performed at South Australia on patients entitled "audit on pre medication of elective and emergency surgical patients", elective patients comprised 77.7% and emergency patients 22.3% of the total number.

Anxiety can be reduced with either non-pharmacologically or pharmacological anxiolytics. In this study pharmacological anxiolytics were administered in only 5 (16.7%) out of 30 patients and non-pharmacological anxiolytics 19 (63.3%). Similar studies/audits done by Jean et al. revealed that 61%-80% of patients were given both non-pharmacological and pharmacological pre medications [9-11].

In the current audit/study metoclopramide was given in 80% of audited patients as anti-emetic premedication. An audit done by Kluger and Owen also showed that metoclopramide was used most commonly (98.8%) as anti-emetic premedication [7].

My study investigated that antacid (cimetidine) was administered on 24 (80%) of sampled patients. Owen et al. antacid prophylaxis was carried out in 51% of obstetric anesthetic cases.

CONCLUSION

Areas of excellent practice: anti-emetics and H₂-blockers were practiced well.

Areas which need to be improved: paracetamol has to be given specially during emergency.

Areas which totally need change: pre medicate with atropine and diazepam which had 26.7% and 16.7% respectively on the

current practices with the standard need completely change in the clinical practice. Premedication should be given for timely as indicated.

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