

## Overview Of Mouth Dissolving Tablet Of Antiemetic In Post-Operative Condition.

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**ABSTRACT:-** Oral disintegrating tablets have gained significant attention in the era of innovative and unique drug delivery systems to deliver the drug molecule efficiently and safely. Mouth dissolving tablets are once that gets dissolved in the mouth in a matter of seconds before being swallowed. Its advantages of rapid onset of action, ease of administration, and first-pass metabolism makes it a suitable dosage form for the administration of various category of drugs including antiemetic drug in postoperative nausea and vomiting management. This review contains brief information about mouth dissolving tablets including their definition, advantages, disadvantages, and pharmacokinetics and details of postoperative nausea and vomiting including its physiology, factors affecting, drugs used in the management etc. and also the use of mouth dissolving tablets in postoperative condition.

**Keywords:-** mouth dissolving tablet, antiemetic, post-operative nausea and vomiting

### I. INTRODUCTION: -

Oral medication delivery is widely accepted, accounting for 50-60% of total dosage forms. Solid dosage forms are popular because of their ease of use, precise dosing, self-medication, pain avoidance, and, most importantly, patient compliance. Tablets and capsules are the most common solid dosage forms; however, for some individuals, swallowing these dosage forms can be challenging.<sup>[1]</sup> The intake of oral dose forms is greatly aided by drinking water. When water is not available, in the case of motion sickness (kinetosis), and abrupt episodes of coughing during the common cold, allergic condition, and bronchitis, people frequently encounter difficulty swallowing conventional dosage forms such as a tablet. As a result, tablets that dissolve or disintegrate quickly in the oral cavity have gotten a lot of attention. Mouth dissolving tablets are not

only for folks who have trouble swallowing, but they're also great for athletes.<sup>[2]</sup>

### Mouth dissolving tablet

This is a cutting-edge tablet technology in which the dosage form containing active medicinal components dissolves quickly, usually in a matter of seconds, without the need for water, providing the patient with maximum convenience. Mouth dissolving is a tablet that can be placed in the mouth and disperses swiftly before being swallowed, according to the European Pharmacopoeia. MDT was developed by researchers for a variety of medications that are used in therapy when a rapid peak plasma concentration is necessary to achieve the desired pharmacological response. Antiemetics, Neuroleptics, cardiovascular agents, analgesics, anti-allergics, and erectile dysfunction medications are among them.<sup>[3]</sup>

### 1. Advantages of MDT

- MDT is used to improve patient compliance in patients who are unable to swallow pills or capsules, such as the elderly, stroke victims, bedridden, geriatric, and people with a mental health conditions.
- Budget-friendly.
- Immediate pharmacological effect.
- As a result, ODT is more convenient for passengers and busy persons who may not always have access to water.
- No chewing required
- ODT's pleasant taste helps to alter people's attitudes toward drugs.
- It's simple to use.
- The risk of choking or suffocation caused by oral traditional preparations is reduced, boosting safety.
- Equipment used in traditional manufacturing.
- Quick onset of action.

- Pre gastric absorption also prevents first-pass effects and provides significant advantages for drugs metabolized by the liver
- Provides advantages of liquid medication over solid preparations.
- Suitable for motion sickness, sudden vomiting attacks, or coughs that require quick onset.
- Pre gastric absorption can lead to dose reduction and clinical improvement by reducing side effects. <sup>[4-11]</sup>

## 2. Disadvantages of MDT:

Certain medications cannot be formulated as MDTs because of the following limitations:

- Because of their low mechanical strength, orodispersible tablets should be handled with caution. Several MDTs are hygroscopic and cannot maintain their physical integrity when exposed to moisture.
- Typical humidity situation necessitating specialist product packaging
- The tablets may leave an unpleasant taste or grittiness on the tongue if they are not properly prepared.<sup>fx</sup>
- MDTs are porous, soft-moulded matrices that are crushed into tablets with low compression force, making the tablets friable and/or brittle and difficult to handle, necessitating the use of specialist peel-off blister packaging.
- Bitter medications and those with an unpleasant odour are challenging to manufacture as MDTs. Before the formulation of such medications, special precautions must be followed. <sup>[12, 13]</sup>

### Potential Drug Candidates for Mouth Dissolving Tablets:

1. **Non-steroidal Anti-Inflammatory Drugs:** Ketoprofen, Piroxicam, Paracetamol, Rofecoxib, Nimesulide, Ibuprofen.
2. **Anti-ulcer Drugs:** Famotidine, Lansoprazole.
3. **Antidepressants Drugs:** Mirtazapine, Fluoxetine.
4. **Antiparkinsonian Drugs:** Selegiline.
5. **Antimigraine Drugs:** Sumatriptan, Rizatriptan benzoate, Zolmitriptan.
6. **Anti-histaminic Drugs:** Loratadine, Diphenhydramine, Meclizine.
7. **Antiemetic Drugs:** Ramosetron HCl, Ondansetron, Baclofen <sup>[14, 15, 16]</sup>.

### Pharmacokinetics of MDTs

When a drug is placed in the mouth, it is absorbed, reaches therapeutic levels, and begins to exert its pharmacological action. As a result,

absorption rate and duration are crucial. The disintegration time of traditional tablet dosage forms is longer, resulting in a delay in dissolution release. The rate of disintegration and breakdown is substantially faster than with MDTs. The process of digestion starts in the mouth and continues through the pharynx and oesophagus until the saliva reaches the stomach. When prescribing MDTs, consider age, GI pH, and blood flow through the GI tract, especially for the elderly, because they have a lower body mass and total body water, which results in a lower volume of distribution (Vd) for water-soluble drugs, whereas lipid-soluble drugs have a higher Vd. This population's liver volume is also a factor to consider. As a result, blood flow to the liver will decrease, reducing the drug's biotransformation via 38 oxidation, reduction, and hydrolysis. All of these factors will have an impact on renal clearance and the increase in half-life. <sup>[17]</sup>

### POST-OPERATIVE NAUSEA AND VOMITING

Nausea and vomiting are the two most common postoperative complications, with a 30% point incidence in the general surgical population and as high as 80 % in high-risk groups.<sup>[18]</sup> This can be an upsetting experience, and it's linked to a lot of patient dissatisfaction.<sup>[19,20]</sup> Postoperative nausea and vomiting are inconvenient. The anaesthetist is typically blamed, despite evidence that postoperative nausea and vomiting are caused by various factors, some of which are related to anaesthesia, others to surgery, and still others to the patients themselves. Postoperative nausea and vomiting are often underestimated because they are self-limiting, never become chronic, and rarely kill. However, its impact on healthcare costs is significant. Every year, 10% of the population is put under general anaesthesia.<sup>[21]</sup> and approximately 30% of them experience postoperative nausea and vomiting. 2 Every year, approximately two million people in the United Kingdom are affected by this. Because of uncontrolled postoperative nausea and vomiting, approximately 1% of patients undergoing ambulatory surgery are admitted overnight.<sup>[22]</sup> PONV management is a complicated process. Because there are numerous antiemetics with varying pharmacokinetics, efficacy, and side-effect profiles, the choice of an antiemetic will be determined by the clinical context. The benefit of PONV prophylaxis must also be balanced against the risk of side effects. At the institutional level, factors such as cost-effectiveness, drug availability, and drug formulary decisions all have an impact on

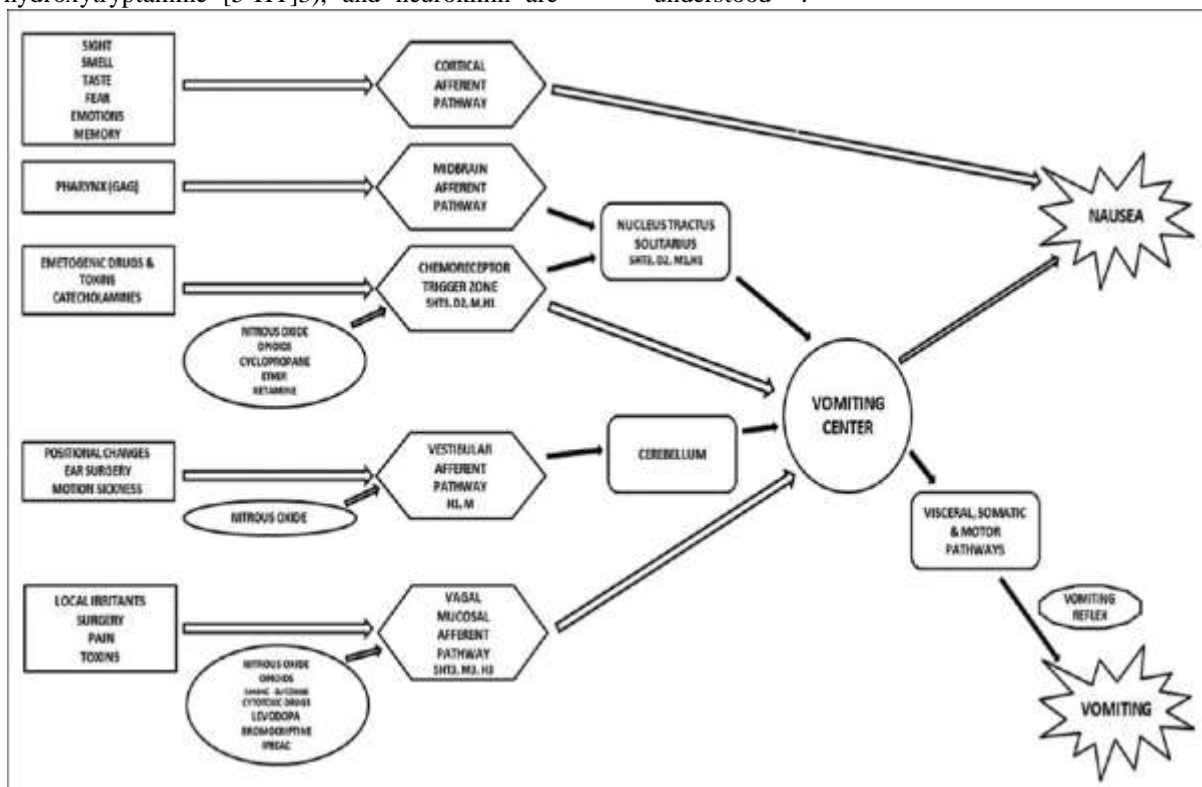
PONV management. While there are several published guidelines for the management of PONV, they are restricted to specific patient populations [23,24]. When these symptoms last beyond the immediate postoperative period, they can cause prolonged recovery and delayed return to work, school, and other daily activities. Prolonged recovery can increase concurrent surgical morbidity and reduce the return to preoperative levels of function.

**Physiology of vomiting:-**

The expulsion of gastric contents into the pharynx and mouth is characterised as vomiting. Retching is characterised by the same muscular activity as vomiting but without the expulsion of matter. Vomiting and retching can result from a variety of causes, including a complex series of humoral and neurological interactions that stimulate the emesis centre, a nucleus of cells in the medulla. [25]. Dopamine (D2), acetylcholine (M1), histamine (H1), endorphins, serotonin (5-hydroxytryptamine [5-HT]3), and neurokinin are

among the neurotransmitters and receptors involved in this process (NK) 1 [26]. The receptors are abundant in the emesis centre, chemoreceptor trigger zones (CTZs), and the gastrointestinal (GI) tract. The CTZ, the GI tract via the vagus, the vestibular apparatus, and the cerebral cortex all provide input to the emesis centre. [27]. The CTZs, which are located in the brain stem beneath the fourth ventricle, detect chemical imbalances in the body. CTZs are activated by the release of emetogenic substances into the systemic circulation and neurotransmission via the vagus nerve. Vestibular and cerebral input may play a role in a patient's susceptibility to PONV [28].

Nausea is a sickness or discomfort associated with the desire or need to vomit. The sensation is subjective and difficult to quantify or compare across patients. Nausea is commonly associated with decreased gastric motility, intestinal hypertonia, and reverse peristalsis. The mechanisms and pathways that modulate this uniquely human phenomenon are poorly understood [29].



The following are the five primary afferent routes involved in inducing vomiting:

1. The chemoreceptor trigger zone is number one (CTZ)
2. The gastrointestinal system's vagal mucosal route
3. The vestibular system's neuronal pathways
4. The cerebral cortex's reflex afferent pathways
5. Afferents from the midbrain.

Stimulation of one of these afferent routes can activate the sensation of vomiting via cholinergic (muscarinic), dopaminergic, histaminergic, or serotonergic receptors.<sup>[30]</sup>

The "vomiting centre" within the reticular formation in the brainstem is the neuroanatomical site that controls nausea and vomiting. It gets afferent input from the routes indicated above. With the nucleus tractus solitarius, there are more interactions.

Area postrema has neurokinin-1 (NK-1) receptors, which are hypothesised to play a role in emesis.<sup>[31]</sup>

CTZ is in touch with cerebrospinal fluid and is outside the blood-brain barrier (CSF). CTZ allows blood and CSF molecules to interact. The activation of CTZ by adsorbable poisons or medications circulating in the blood can cause nausea and vomiting. Its activation can activate the vomiting reflex by sending emetogenic stimuli to the brainstem's vomiting area.

Disturbances in the gut or oropharynx, movement, discomfort, hypoxemia, and hypotension can all stimulate the vomiting centre.

Glossopharyngeal, hypoglossal, trigeminal, accessory, and spinal segmental nerves receive efferent impulses.<sup>[32]</sup>

The abdominal muscles tighten in unison against a closed glottis, raising intra-abdominal and intrathoracic pressures. The pyloric sphincter contracts and the oesophageal sphincter relaxes, and vigorous antiperistalsis occurs within the oesophagus, causing the stomach contents to be forced out. Sweating, pallor, and bradycardia are all symptoms of increased vagal and sympathetic activity.

Multiple factors relating to the patient, surgery, and anaesthesia influence PONV, which necessitates the release of 5-hydroxytryptamine (5-HT) in a cascade of neuronal events involving both the central nervous and gastrointestinal tract. The emetic reaction is selectively mediated by the 5-HT subtype 3 receptors (5-HT).<sup>[33]</sup>

### Factors Influencing Postoperative Nausea And Vomiting.

Emesis has a complex aetiology. The following are the things that influence the PONV:

1. Patient factors.
2. Preoperative factors.
3. Intraoperative factors.
  - a. Surgical factors.
  - b. Anaesthesia factors.
4. Postoperative factors.

#### 1. Patient factors

- a. Gender: Women are more likely than males to get PONV. It's the most accurate predictor of a patient's prognosis.
- b. Motion sickness: Patients who have previously had motion sickness or vomiting after surgery are more likely to develop PONV.
- c. Nonsmokers are more susceptible to PONV than smokers. CTZ desensitisation occurs gradually in smokers.
- d. Age: Being over 50 years old is a strong risk factor for PONV.<sup>[30]</sup>
- e. Obesity: Recent evidence suggests that BMI is not linked to an increased risk of PONV development.<sup>[34]</sup>
- f. Delayed gastric emptying: PONV is more likely in patients with abdominal pathology, diabetes, hypothyroidism, pregnancy, elevated intracranial tension, a history of swallowing blood, and a full stomach.<sup>[35]</sup>

#### Preoperative factors

- a) Perioperative fasting: It is uncertain as a risk factor.
- b) Anxiety: Clinically not relevant for PONV prediction.<sup>[30]</sup>

#### Intraoperative factors.

##### 1) Surgical factors:

- a) Cholecystectomy, gynaecological, and laparoscopic operations are all linked to an increased risk of PONV.
- b) Time required for surgery: PONV is more common in patients who have procedures that last longer. Increase the operating time by 30 minutes and the risk of PONV rises by 60%.<sup>[31]</sup>

##### 2) Anaesthesia factors:

- a) General anaesthesia  
In patients undergoing laparoscopic procedures avoiding, nitrous oxide resulted in a significant reduction in postoperative emesis. Two meta-analyses found that avoiding nitrous oxide lowered the risk of PONV.<sup>[35,36]</sup>

Three processes have been proposed as possible contributors to the rise in postoperative emesis linked with nitrous oxide use.

1. Catecholamine release stimulates the sympathetic nervous system.<sup>[37]</sup>
2. Changes in middle ear pressure cause traction on the round window membrane, which stimulates the vestibular system.<sup>[38]</sup>
3. Exchange of nitrous oxide and nitrogen in gas delivered into the gastrointestinal system during mask ventilation causes increased abdominal distension.<sup>[39]</sup>

inhalational drugs Due to an increase in endogenous catecholamines, inhalational drugs such as ether and cyclopropane promote a higher prevalence of PONV. PONV is linked to sevoflurane, enflurane, desflurane, and halothane to a lesser extent.<sup>[40]</sup> Volatile anaesthetics have an effect.

PONV has a dose-dependent effect and is most noticeable in the first 2–6 hours following surgery.<sup>[27]</sup> Early PONV (0–2 h after surgery) was caused mostly by volatile anaesthetics, which had little effect on delayed PONV (2–24 h after surgery).<sup>[40]</sup> Etomidate: As part of a balanced anaesthetic strategy, continuous etomidate infusion significantly increases the incidence of postoperative emesis.<sup>[41]</sup>

Ketamine: When compared to a patient getting barbiturates and nitrous oxide for induction, studies have shown that ketamine causes delayed discharge, vivid dreams, hallucinations, and a greater incidence of PONV.<sup>[42]</sup> Endogenous catecholamine release is responsible for the emetic impact.

Propofol is widely used for outpatient anaesthetic because of its good recovery qualities, such as rapid emergence and low PONV.

Balanced anaesthesia: The use of the nitrous oxide-opioid-relaxant approach is associated with a higher incidence of postoperative emesis when compared to inhalational or whole intravenous (IV) techniques.<sup>[37,38,39,40]</sup> The administration of an opioid-nitrous oxide combination, which directly stimulates CTZ, has been linked to emesis with balanced anaesthesia.

Opioids: They produce emesis by stimulating opioid receptors in the CTZ. Intraoperative opioids make a minor contribution; there is no difference between different opioids.<sup>[17]</sup>

Neuromuscular reversal agents: PONV's prevalence is unknown.

### Regional anaesthesia:

Patients who had localised anaesthetic had a 9-fold lower risk of PONV than those who

received general anaesthesia.<sup>[41]</sup> Following regional nerve block operations, the risk of postoperative emesis is usually lower than with general anaesthesia.<sup>[42]</sup> Because of the concomitant sympathetic nervous system blockage, which contributes to postural hypotension-induced nausea and vomiting, emesis with the central neuraxial block is stronger than with peripheral nerve block.<sup>[43,44,45,46]</sup> Mlipid-soluble opioids like fentanyl and sufentanil, which have a less rostral distribution from the lumbar epidural injection site to the CTZ and vomiting centre than less liposoluble opioids like morphine, may have a reduced incidence of nausea after epidural opioids.<sup>[47]</sup>

### POSTOPERATIVE FACTORS

a. Pain: A common cause of postoperative emesis is visceral or pelvic pain.<sup>[48,49]</sup>

b. Ambulation: Patients who have received opioid compounds may have nausea and vomiting as a result of sudden movements, changes in position, or transit from the postanesthetic recovery unit to the post-surgical.<sup>[50,51]</sup>

c. Opioids: Postoperative opioids raise the risk of PONV in a dose-dependent manner;<sup>[52,53]</sup> this impact appears to remain as long as opioids are used for postoperative pain relief.<sup>[54]</sup> The risk of nausea and vomiting appears to be the same regardless of the method of delivery. To lessen the need for opioids during the perioperative phase, nonsteroidal anti-inflammatory drugs can be administered.<sup>[55]</sup>

d. The use of additional oxygen to prevent PONV is no longer suggested.<sup>[56]</sup>

In homozygous patients with the A118 variation of OPRM1, the risk of PONV is very high. 5-HT receptors, muscarinic type-3 receptor, dopamine type 2 receptor, catechol-o-methyl transferase, alpha-2 adrenoceptor, adenosine triphosphate binding cassette subfamily B member, cytochrome P450 superfamily enzyme, and uridine 5'-diphosphate-glucuronosyltransferase are among the genes linked to PONV or opioid-induced nausea and vomiting.<sup>[57,58]</sup>

Antiemetics drugs are available <sup>(39-47)</sup>		
Class	Mechanisms of action	Pharmaceutical restrictions Benefits Scheme
<b>Dopamine antagonists</b> Benzamides – metoclopramide Benzimidazoles – domperidone Phenothiazines – prochlorperazine,* chlorpromazine* Butyrophenones – droperidol,* haloperidol* Atypical antipsychotics – olanzapine*	Block dopamine type 2 (D2) receptors centrally in the chemoreceptor trigger zone and peripherally in the gastrointestinal tract. Domperidone blocks peripheral D2 receptors only. At higher doses, effects on other receptors are seen. These include blockade of serotonin, histamine, adrenergic and muscarinic receptors.	Metoclopramide (parenteral) – palliative caremedicine Metoclopramide and paracetamol combinations – available as non-prescriptionmedicines
<b>Serotonin antagonists</b> Ondansetron Granisetron Palonosetron Tropisetron	Block 5-HT <sub>3</sub> receptors in the chemoreceptor triggerzone and gastrointestinal tract.	Ondansetron – chemotherapy or radiation-induced nausea and vomiting Granisetron – chemotherapy or radiation-induced nausea and vomiting Palonosetron – chemotherapy-induced nauseaand vomiting Tropisetron – chemotherapy-induced nauseaand vomiting
<b>Neurokinin antagonists</b> Aprepitant Fosaprepitant Netupitant/palonosetron fixed-dosecombination	Block neurokinin type 1 receptors in the central andperipheral nervous system.	Chemotherapy-induced nausea and vomiting

<b>Antihistamines</b> Doxylamine Cyclizine Pheniramine Promethazine	Block H <sub>1</sub> receptors  Cyclizine, doxylamine, promethazine and pheniramine all block muscarinic receptors.  Promethazine also blocks dopamine D <sub>2</sub> receptors.	Available as non-prescription medicines
<b>Anticholinergics</b> Hyoscine	Block muscarinic receptors in vestibular nuclei, vomiting centre and higher brain centres.	Hyoscine (parenteral) – palliative care medicine.  Hyoscine (oral) – available as non-prescription medicine.
<b>Corticosteroids</b> Dexamethasone	Central inhibition of prostaglandin synthesis and enkephalin release. When combined with 5-HT <sub>3</sub> antagonists there are reduced serotonin concentrations in the gut and increased sensitivity of 5-HT <sub>3</sub> receptors to antiemetics.	Nil
<b>Benzodiazepines</b> Lorazepam	Agonist action at the GABA <sub>A</sub> receptor provides anxiolysis.  Action at the chemoreceptor trigger zone suppresses the activity of dopamine.	Nil
<b>Cannabinoids</b> Tetrahydrocannabinol Nabilone Dronabinol Nabiximos	Activate cannabinoid CB <sub>1</sub> (inhibitory) receptors in the central nervous system and peripheral nervous system to modulate the release of neurotransmitters.	Not applicable

Indications and scheduling for antiemetic drugs <sup>[68-69]</sup>	
Indication	Therapeutic options (Scheduling)
Gastroenteritis	Dopamine antagonists (S4)
	Serotonin antagonists (S4)
Opioid-induced nausea and vomiting	Serotonin antagonists (S4)

	Dopamine antagonists(S4) • Droperidol
Migraine-related nausea and vomiting	Dopamine antagonists(S4) • metoclopramide with paracetamol(S3) • metoclopramide(S4) • prochlorperazine(S3 or S4)
Vestibular causes of nausea and vomiting	Antihistamines(S3)
	Anticholinergics(S3)
	Dopamine antagonists(S4)
Chemotherapy-induced nausea and vomiting	Serotonin antagonists(S4)
	Neurokinin-1 antagonists(S4)
	Corticosteroids(S4) • dexamethasone
	Dopamine antagonists(S4) • olanzapine, haloperidol
	Benzodiazepines(S4) • lorazepam
Radiation-induced nausea and vomiting	Serotonin antagonists(S4)
	Corticosteroids(S4) • dexamethasone
	Dopamine antagonists(S4)
Postoperative nausea and vomiting	Dopamine antagonists(S4)
	Serotonin antagonists(S4)
	Antihistamines(S3)
	Corticosteroids(S4) • dexamethasone
	Neurokinin-1 antagonists(S4)
	Benzodiazepines(S4) • lorazepam

**ADVANTAGES OF MOUTH DISSOLVING TABLETS IN POSTOPERATIVE NAUSEA AND VOMITING.**

1. ODTs provide both the advantages of solid and liquid dosage forms, in addition to specific features like:

2. precise dosing Being unit solid dosage forms, they offer the benefits of precise dosing, simple manufacture, strong physical and chemical stability, and make an excellent substitute for children and geriatric patients.
3. Increased bioavailability: Drugs' bioavailability is increased as a result of



- absorption through the mouth, pharynx, and oesophagus.
4. Rapid action: Quick start to the therapeutic effect as the tablet quickly dissolves and is absorbed into the oral cavity.
  5. Patient adherence The dose form can be swallowed dry. As a result, it is practical for patients who are on the go and do not have quick access to water.
  6. Convenience of administration: Particularly suitable for elderly, young, mentally challenged, and bedridden patients who have trouble swallowing.
  7. Obstruction free: This improves safety and compliance because there is no chance of suffocating in the airways from physical obstruction when swallowed.
  8. Enhanced palatability: Pleasant mouth sensations, especially for young patients as flavour masking techniques are utilised to prevent the bitter taste of the medication.
  9. No specific packaging is needed for simple packaging. Push-through blisters may be used for packaging.
  10. Business Avenue: Create new business opportunities through line extensions, product differentiation, and life cycle management.

11. Economical: The production of tablets is made possible by conventional processing and packaging equipment.<sup>[70,71]</sup>

**Case study of antiemetic in PONV.<sup>[72]</sup>**  
**Study design**

This study was an inpatient retrospective audit conducted at a major tertiary teaching hospital in Australia. Data were collected by reviewing patients’ electronic medical records. The inclusion criteria were patients who were admitted to the hospital for a surgical procedure during a specified 4-week period

The patients were evaluated and inpatient ward medication charts were screened, to exclude if one or more of the following criteria were met: regularly prescribed antiemetics as an inpatient; patients under the age of 16; intensive care unit (ICU) admission; receiving chemotherapy treatment; for non-operative management; deceased during the admission. A chemotherapy agent is defined as a specific chemical agent or drug that is selectively destructive to malignant cells and tissues used for the treatment of cancer.

Specified Unit	Names of units
ORTHO	Orthopaedics
HB	Hepatobiliary
CR	Colorectal
UR	Urology
BOE	Breast/Oncology/Endocrinology
TT	Trauma and Transplant
HNOE	Otolaryngology and Head and Neck
OMFS	Oral Maxillofacial Surgery
CNHP	Combined Head/Neck/Plastics
PLAST	Plastics
EGS	Emergency General Surgery

The primary goals of this study were to identify the most commonly given antiemetics and compare antiemetic prescribing practices for surgical patients to local, national, and worldwide standards for the indication of PONV.

**Obtaining information**

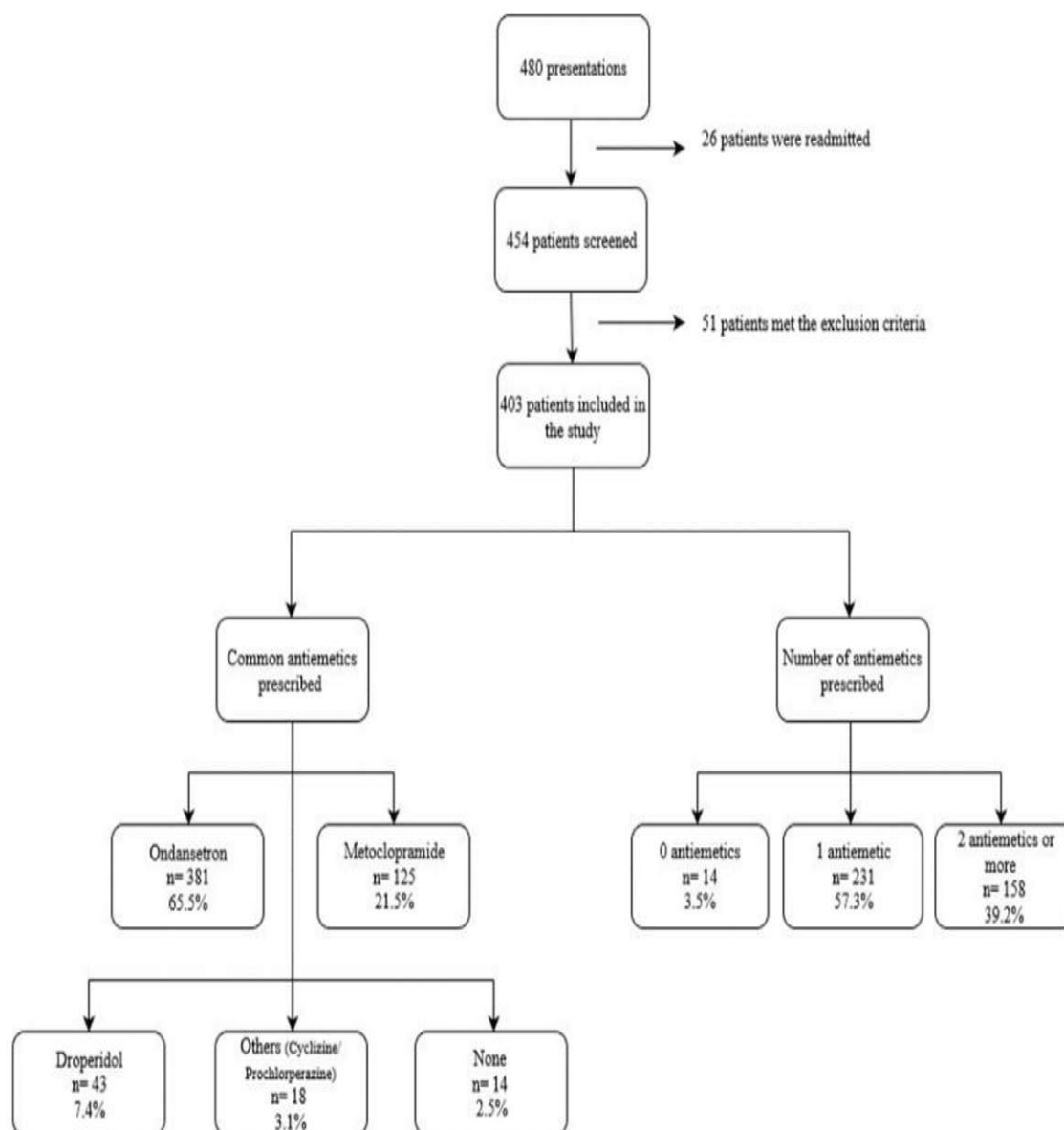
Patient information was collected from medical records using an electronic contents manager (ECM) and the pathology viewer AUSCARE<sup>[73]</sup>. Two auditors entered the data into

Research Electronic Data Capture, an auditing tool. From July 1 to July 31, 2018, surgical patients who were admitted to the hospital for operative management were studied.

**Group of patients**

480 presentations were screened throughout the four weeks. 26 patients were readmitted from the total of 454 patients, with 51

patients meeting the exclusion criteria. Patients who were prescribed regular antiemetics (n=11), patients admitted to ICU (n=14), patients on chemotherapy (n=9), non-operative management (n=15), and lastly dead individuals (n=2) were included in the study, resulting in a total of 403 patients.



**Figure 1:** Flow Diagram of the most common antiemetics and the number of antiemetics administered.

**Characteristics of Patients**

Males made up 58.1 per cent of the entire sample size. This group's median age was 49 years old. Females were lighter than men, while males were taller than females. The smoking status of

65.0 per cent of patients was non-smoker, 19.6percentage of patients' status was unknown, and 15.4 per cent of patients admitted to being current smokers.

<b>Patient Characteristics.</b>			
<b>Patients Characteristic (n=403)</b>	<b>Male</b>	<b>Female</b>	<b>Unknown</b>
Gender	234 (58.1%)	169 (41.9%)	N/A
Age (years)	49±20	50±21	N/A
Weight mean(kilograms)	86.6±19.8 (52.3%)	72.5±19.7 (38.8%)	(8.9%)
Height mean (centimetres)	174.7± (42.7%)	9 161.5±8.8 (30.0%)	(27.3%)
Smoking Status Yes (n=62)	47	15	79
<b>Surgery Unit</b>			<b>Total %</b>
Breast/Oncology/Endocrinology (n=12)	2 (16.7%)	10 (83.3%)	3.0%
Colorectal (n=16)	8 (50.0%)	8 (50.0%)	4.0%
Emergency General Surgery (n=81)	42 (51.9%)	39 (48.1%)	20.1%
Otolaryngology and Head and Neck (n=12)	9 (75.0%)	3 (25.0%)	3.0%
Hepatobiliary (n=20)	10 (50.0%)	10 (50.0%)	5.0%
Oral Maxillofacial Surgery (n=29)	16 (55.2%)	13 (44.8%)	7.2%
Orthopaedics (n=111)	62 (55.9%)	49 (44.1%)	27.5%
Plastics (n=50)	34 (68.0%)	16 (32.0%)	12.4%
Trauma (n=34)	21 (61.8%)	13 (38.2%)	8.4%
Urology (n=38)	30 (78.9%)	8 (21.1%)	9.4%

Orthopaedics (n=111) was the most prevalent surgical unit, followed by emergency general surgery (n=81), plastic surgery (n=50), urology (n=38), trauma, and transplantation (n=34). Oral maxillofacial surgery (n=29), hepatobiliary surgery (n=20), and colorectal surgery (n=16) had the lowest patient representation, with only a tiny number of breast/oncology/endocrine (n=12) patients.

## II. DISCUSSION:-

Nausea and vomiting is a post-operative complication which causes electrolyte imbalance, dehydration, increased pain as well as aspiration.(4) The purpose of the audit was to determine the most commonly prescribed antiemetic agents used. Medication dosages and completeness of

antiemetic prescribing were also portrayed within the findings.

## Results of the primary outcome

The antiemetic ondansetron was found to be the most usually administered (65.5%). Then came metoclopramide (21.5 per cent) and finally droperidol (7.4per cent ). Cyclizine, prochlorperazine, and domperidone were the least prescribed drugs, accounting for only 3.1 per cent of all prescription orders.

## III. CONCLUSION:-

MDTs are solid unit dosage forms containing super disintegrants that impart quick disintegration in the presence of saliva and without producing any difficulty in swallowing the tablet.

As soon as the tablet gets disintegrated in the mouth, the drug is released, then it is dissolved or dispersed in saliva and is absorbed sublingually. This results in greater bioavailability. MDTs offers advantage such as self-administration, quick or immediate onset of action, no water required for swallowing, avoiding first-pass metabolism of the drug, and increased bioavailability. Thus, MDTs can be used as an appreciable alternative shortly.

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