SNS COLLEGE OF ALLIED HEALTH SCIENCE, COIMBATORE

Affiliated to The Tamilnadu Dr.MG.R. Medical University, Chennai

DEPARTMENT OF OPERATION THEATRE AND ANAESTHESIA TECHNOLOGY

COURSE NAME: PRINCIPLES OF ANESTHESIA I

COURSE CODE – 1138

UNIT V

TOPIC – POSTOPERATIVE NAUSEA AND VOMITING

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INTRODUCTION

Definition (Define Stage)

- Postoperative nausea and vomiting (PONV) is a common complication following surgery, characterized by nausea, retching, or vomiting within 24–48 hours post-anesthesia. It affects 20–30% of surgical patients and up to 80% of high-risk individuals, impacting recovery and satisfaction.

DEFINE STAGE

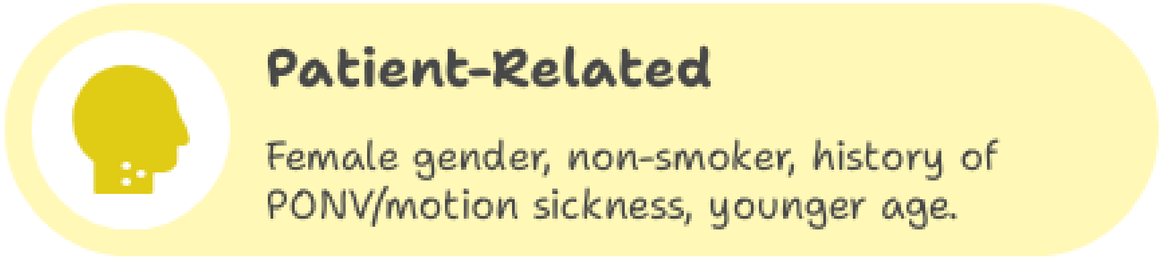
Problem Statement: Ms. Jane Doe, a 45-year-old female undergoing laparoscopic cholecystectomy, experiences PONV, leading to discomfort, delayed recovery, and dissatisfaction due to inconsistent prevention and management strategies.

Key Observations:

- PONV disrupts recovery, increases hospital stay, and causes distress.
- Inconsistent antiemetic protocols contribute to variable outcomes.
- High-risk patients are not always identified preoperatively.

Goal: Create a clear, evidence-based understanding of PONV to guide targeted interventions.

RISK FACTORS (Empathy)



CAUSES (Ideate)

Patient Factors

Genetic predisposition, dehydration, early oral intake.

Anesthetic Factors

Volatile anesthetics and nitrous oxide stimulate the chemoreceptor trigger zone.

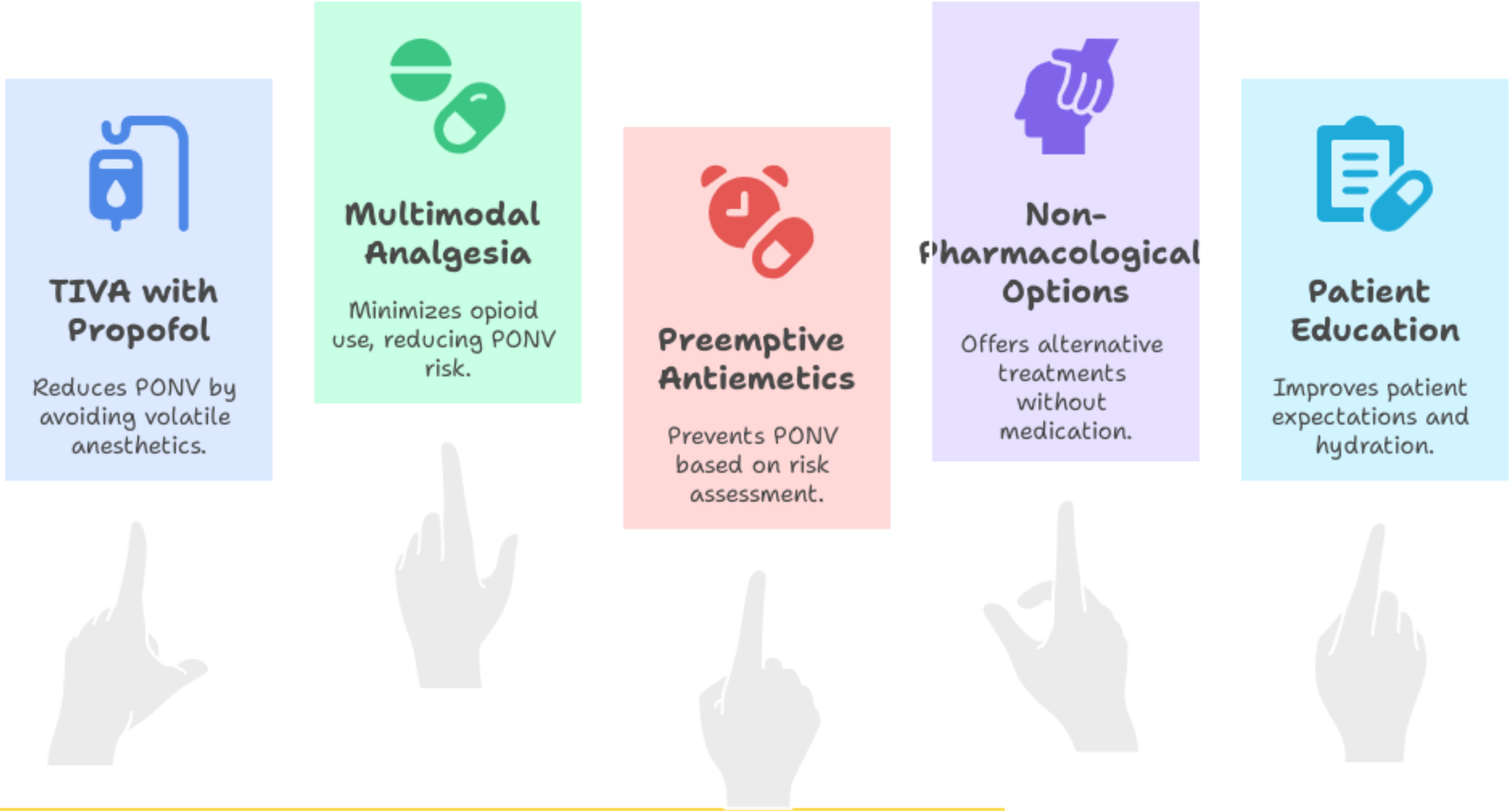
Surgical Factors

Abdominal organ manipulation irritates vagal pathways.

Pharmacological

Postoperative opioids activate mu-opioid receptors.

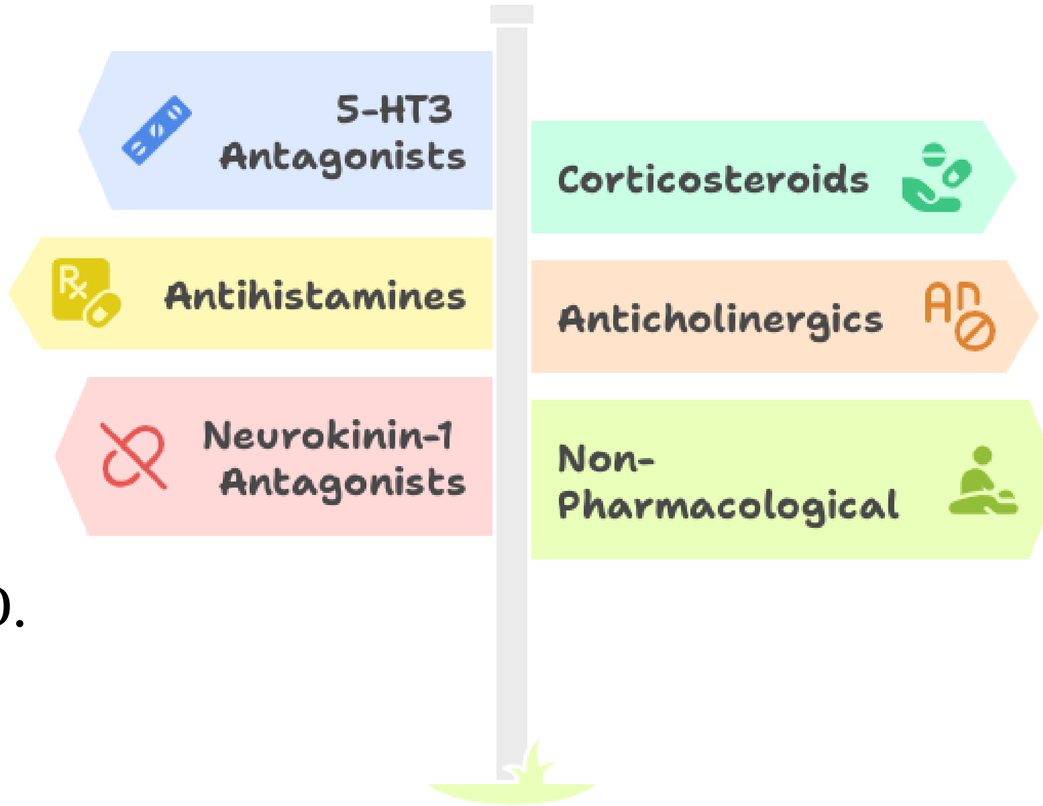
IDEATE STAGE APPLICATION



TREATMENT (Prototype)

Pharmacological:

- **5-HT3 Antagonists**: Ondansetron 4–8 mg IV.
- **Corticosteroids**: Dexamethasone 4–8 mg IV.
- **Antihistamines**: Dimenhydrinate 25–50 mg IV.
- **Anticholinergics**: Scopolamine patch
- **Neurokinin-1 Antagonists**: Aprepitant 40 mg PO.



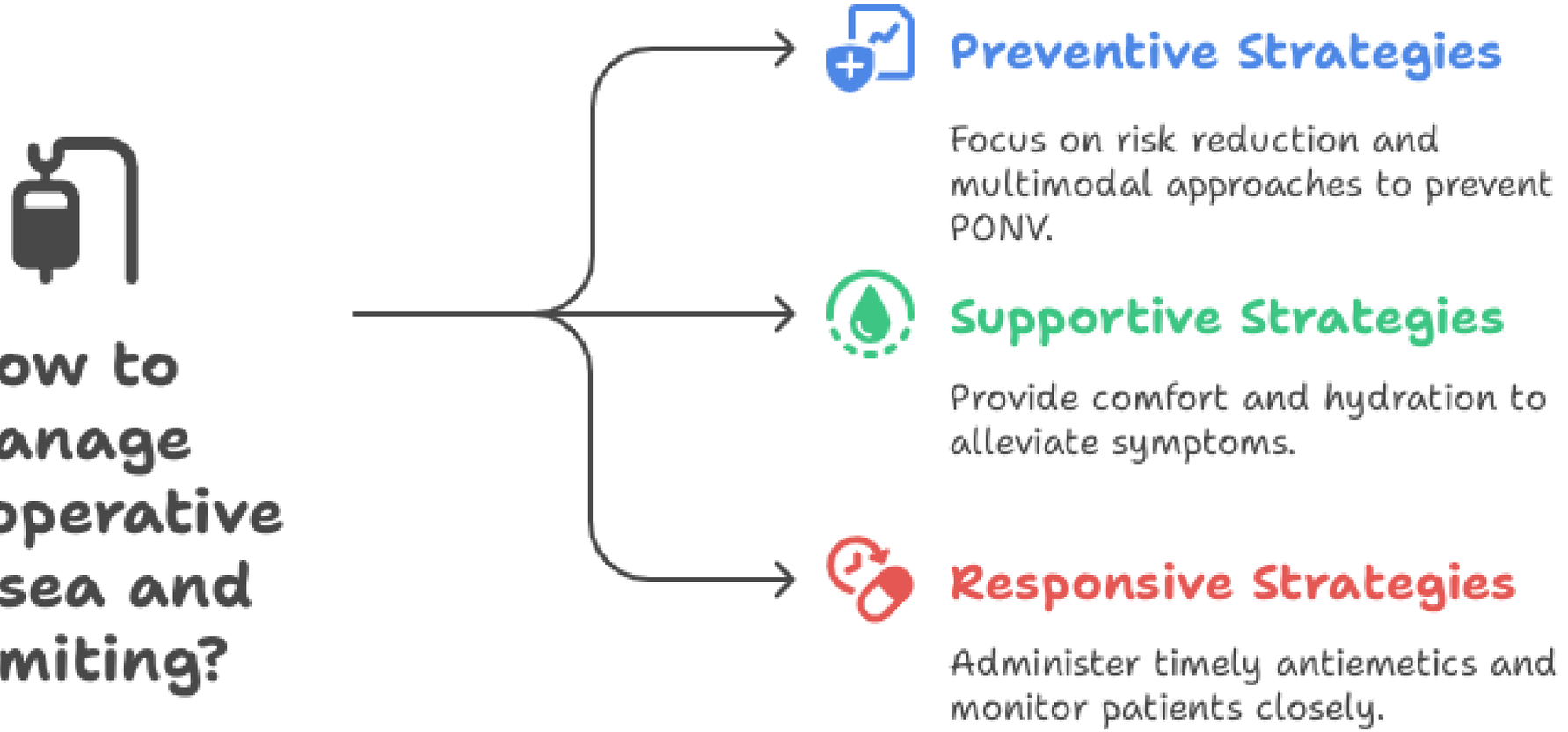
Non-Pharmacological:

- P6 acupressure, aromatherapy (peppermint/ginger oil), controlled breathing.

PROTOTYPE STAGE APPLICATION

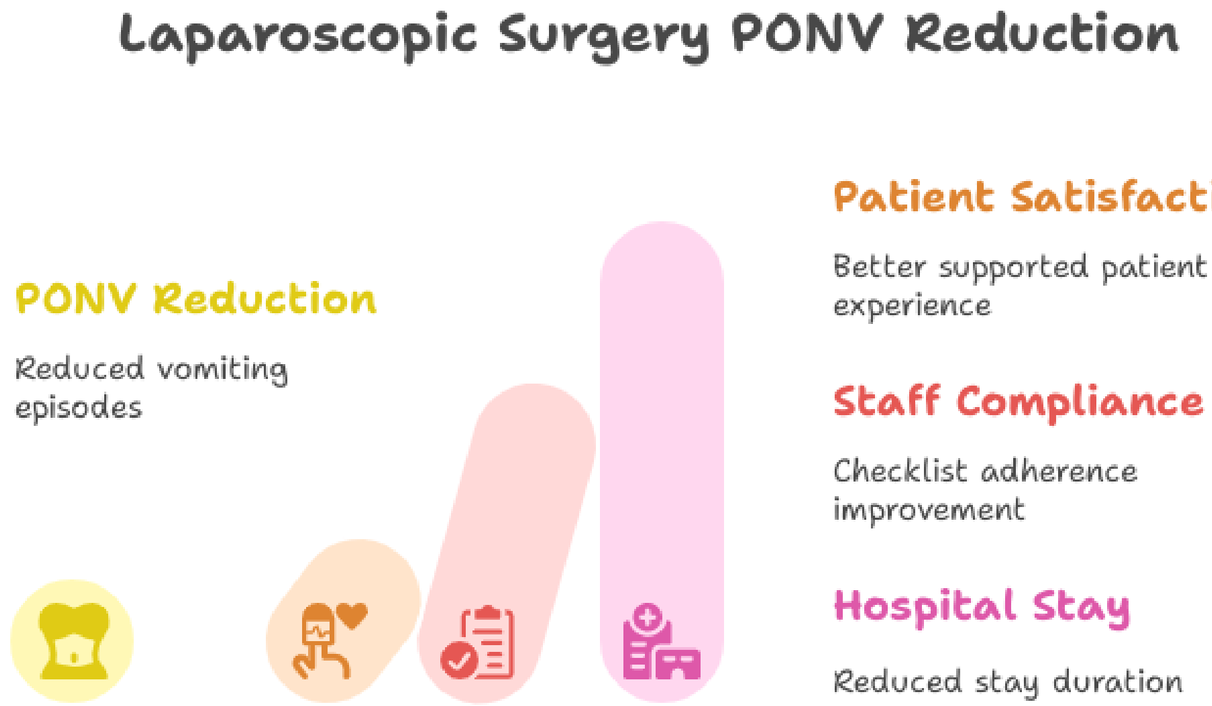
	Standardized Protocol	Patient Education Pamphlet	Acupressure Wristbands
Description	Apfel score based protocol	Guide explaining treatments	P6 wristbands applied preoperatively
Components	Flowchart, checklist, training module	Infographics, QR code for video	Reusable bands, instruction card

MANAGEMENT (Test)



MANAGEMENT (Test)

- **Setting**: Surgical ward, 50 laparoscopic surgery patients.
- **Duration**: 4 weeks
- **Metrics**:
  - PONV incidence (vomiting episodes, nausea severity 0–10).
  - Patient satisfaction (surveys).
  - Staff compliance (EHR audit).
  - Hospital stay duration. .



MANAGEMENT (Test)

Results:

- **PONV Incidence**: Reduced from 30% to 15% in high-risk patients.
- **Patient Satisfaction**: 85% felt better supported.
- **Staff Compliance**: 90% checklist adherence, some EHR alert fatigue.
- **Hospital Stay**: Reduced by 4 hours for PONV-free patients.

MANAGEMENT (Test)

Feedback and Iteration:

- Patients: Larger pamphlet fonts, multilingual options.
- Nurses: Simpler EHR alerts.
- Wristbands: Combine with aromatherapy for severe cases.
- Protocol: Optional ondansetron for low-risk patients.

LEARNING OBJECTIVES

- **Define PONV**: Understand its clinical presentation (Define).
- **Identify Risk Factors**: Assess patient-specific risks (Empathize).
- **Explore Causes**: Brainstorm solutions for root causes (Ideate).
- **Develop Treatments**: Create and test protocols (Prototype).
- **Manage Effectively**: Refine strategies based on feedback (Test).

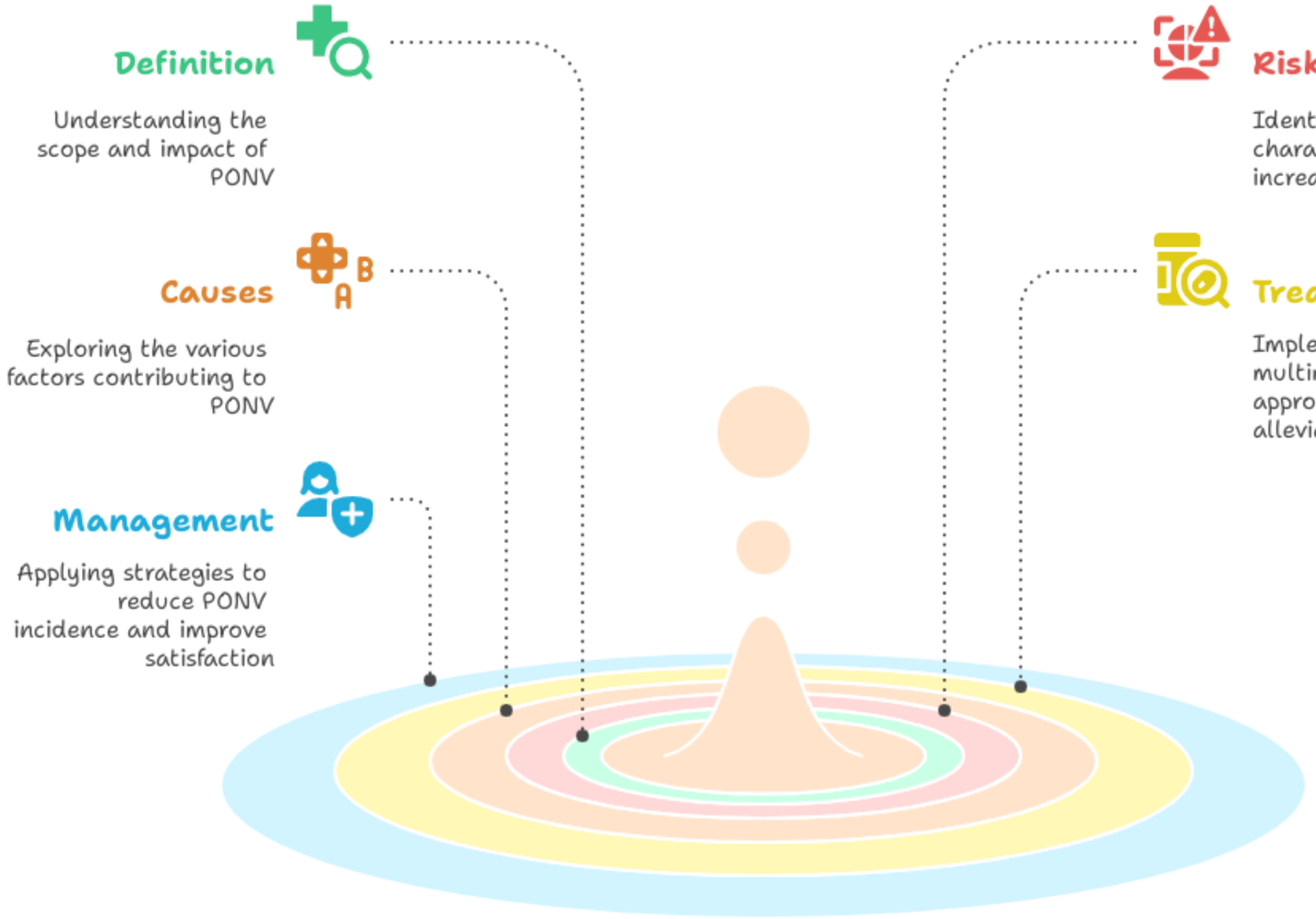
IN CLASS ASSESSMENT

- **Short Answer (5 points)**: List three non-pharmacological treatments for PONV & explain how they work.
- **Group Discussion (5 points)**: In groups, design a patient education tool for PONV. Present one key feature and its benefit.
- **Multiple Choice (5 points)**: What is a common anesthesia-related cause of PONV? a) Propofol-based TIVA b) Volatile anesthetics c) Local anesthesia d) Non-opioid analgesics
- **Reflection (5 points)**: Write a brief paragraph on how empathy in the DT process improves PONV management.
- **Total**: 25 points *Submit written answers and discuss group activity in class.*

SUMMARY

- **Definition**: PONV is nausea/vomiting post-surgery, affecting 20–80% of patients.
- **Risk Factors**: Female gender, non-smoker status, motion sickness, opioids, volatile anesthetics.
- **Causes**: Anesthetic agents, opioids, surgical manipulation, patient factors.
- **Treatment**: Multimodal antiemetics (e.g., ondansetron, dexamethasone), acupressure, aromatherapy.
- **Management**: Risk stratification, patient education, and timely interventions reduce PONV incidence and improve outcomes.
- **Role of Allied Health**: Nurses, pharmacists, and technicians ensure effective protocol implementation and patient support.

SUMMARY


Definition
Understanding the scope and impact of PONV
Causes
Exploring the various factors contributing to PONV
Management
Applying strategies to reduce PONV incidence and improve satisfaction
Risk Factors
Identifying patient characteristics that increase PONV risk
Treatment
Implementing multimodal approaches to alleviate PONV

REFERENCES

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THANK YOU