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Magnetizing: Post Operative Nausea and Vomiting

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Introduction

Prevalence
Postoperative nausea and vomiting (PONV) is the most prevalent postoperative complication occurring within 24 hours of surgery.

Risk Factors
Adults at a higher risk for PONV include:

- Female
- History of PONV, motion sickness and/or gastroparesis
- Postoperative opioid recipient
- Volatile anesthetic and/or nitrous oxide administration intraoperatively
- Pregnancy
- Use of birth control pills

Symptoms
Report of nausea (feeling of imminent vomiting), excessive salivation and swallowing, dilated pupils, tachypnea, pallor, diaphoresis, tachycardia (retching may convert tachycardia to bradycardia).

Implications
PONV can create a plethora of adverse events for the patient: anxiety and a sense of dread, increased risk for bleeding, dehydration and electrolyte imbalance, risk for aspiration and airway obstruction, vasovagal response, wound dehiscence, increased intracranial pressure, and increased cost with use of antiemetics and potential for prolonged length of stay.

Purpose

To guide nursing care in the early recognition and treatment of PONV.

Pathophysiology and Pharmacology

Pathophysiology
Nausea and vomiting are under the control of the central nervous system via the vomiting center (nucleus of tractus solitarius) in the medulla oblongata and the chemoreceptor trigger zone (area postrema) at the caudal end of the fourth ventricle. Chemosensitive receptors sense the presence of emetic agents in the blood and this data is relayed via the chemoreceptor trigger zone to the vomiting center. Neurons from the vomiting center then transmit data to a central-pattern generator which coordinates the various actions involved in the act of emesis.

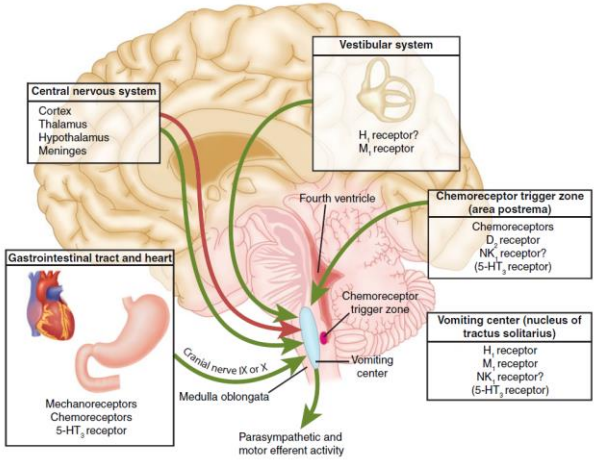

Figure: Neurologic pathways involved in nausea and vomiting (Katzung, Masters, & Trevor, 2012).

Pharmacologic Therapies

- Antiemetics are developed to fill chemosensitive neurotransmitter receptor sites to disrupt the cascade leading to emesis (e.g. ondansetron is a serotonin [5-HT_3] receptor blocker and prochlorperazine is a dopamine and muscarinic [M_1] receptor inhibitor).
- Consider fluid volume replacement in the hypotensive or dehydrated patient.
- Unrelieved headache and eye pain may contribute to NV; assess for pain.
- Supplemental oxygen

Complementary Therapies

Side effects of antiemetics can disrupt recovery from surgery. Studies have concluded that aromatherapy has been effective in the treatment of PONV – specifically ginger and lavender oil. When inhaled, essential oils enter the system and stimulate olfactory receptors that activate the limbic system (temporal lobe, amygdala, and entorhinal cortex).

Although the mechanism of action of ginger oil is not understood, linalool (a component of lavender oil) is thought to be a potent 5-HT_3 antagonist.

Nonpharmacologic Recommendations

- Decrease stimulation of oropharynx (NPO)
- Directed deep breathing
- Aromatherapy as a rescue therapy

When using essential oils as a rescue therapy for PONV it is important to assess for allergies, sensitivities, and patient preference. The clinical nurse does not need a physician order to provide aromatherapy.

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