

Nausea • FREQUENCY Up to 70% of patients with advanced cancer have nausea, defined as the subjective sensation of wanting to vomit.

ETIOLOGY Nausea and vomiting are both caused by stimulation at one of four sites: the GI tract, the vestibular system, the chemoreceptor trigger zone (CTZ), and the cerebral cortex. Medical treatments for nausea are aimed at receptors at each of these sites: the GI tract contains mechanoreceptors, chemoreceptors, and 5-hydroxytryptamine type 3 (5-HT₃) receptors; the vestibular system probably contains histamine and acetylcholine receptors; and the CTZ contains chemoreceptors, dopamine type 2 receptors, and 5-HT₃ receptors. An example of nausea that most likely is mediated by the cortex is anticipatory nausea before a dose of chemotherapy or other noxious stimuli.

Specific causes of nausea include metabolic changes (liver failure, uremia from renal failure, hypercalcemia), bowel obstruction, constipation, infection, GERD, vestibular disease, brain metastases, medications (including antibiotics, NSAIDs, proton pump inhibitors, opioids, and chemotherapy), and radiation therapy. Anxiety can also contribute to nausea.

INTERVENTION Medical treatment of nausea is directed at the anatomic and receptor-mediated cause revealed by a careful history and physical examination. When no specific cause of nausea is identified, many advocate beginning treatment with metoclopramide; a serotonin type 3 (5-HT₃) receptor antagonist such as ondansetron, granisetron, palonosetron, dolasetron, tropisetron, or ramosetron; or a dopamine antagonist such as chlorpromazine, haloperidol, or prochlorperazine. When decreased motility is suspected, metoclopramide can be an effective treatment. When inflammation of the GI tract is suspected, glucocorticoids, such as dexamethasone, are an appropriate treatment. For nausea that follows chemotherapy and radiation therapy, one of the 5-HT₃ receptor antagonists or neurokinin-1 antagonists, such as aprepitant or fosaprepitant, is recommended. Clinicians should attempt prevention of postchemotherapy nausea, rather than simply providing treatment