Nausea and vomiting

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Introduction

Nausea is the unpleasant sensation associated with the urge to vomit. Vomiting is the forcing of the contents of the stomach up through the oesophagus and out of the mouth. Nausea and vomiting generally act as protective reflexes against the absorption of toxins, but can occur as result of a variety of other stimuli. The vomiting centre, located in the brain, initiates the vomiting reflex once it has been activated.

The vomiting centre may be activated by signals from:

• The cerebral cortex: activated by memory, anticipation or fear
• The vestibular apparatus in the middle ear
• The gut
• Sensory input, activated by sight, smell and pain
• The chemoreceptor trigger zone (CTZ).

The CTZ is located on the surface of the brain, in an area which is exposed to blood as well as cerebrospinal fluid but is not protected by the blood-brain barrier. This makes it possible for the CTZ to be stimulated by circulating toxins or drugs. Once these harmful substances have been identified, chemical substances called neurotransmitters relay impulses to the vomiting centre, which initiates vomiting to expel these harmful substances from the body.

What causes nausea and vomiting?

Nausea and vomiting can have a wide variety of underlying causes. Knowing what preceded the onset of nausea and vomiting and what symptoms the patient is experiencing provides important clues regarding diagnosis. The choice of treatment will depend on the cause and will help identify patients who should be referred.

Certain consequences of vomiting, such as dehydration or oesophageal or mucosal rupture, require immediate treatment, regardless of the cause.

When accompanying nausea and vomiting, the following warning symptoms and signs may suggest serious underlying disease and the need for referral:

• Chest pain
• Severe headache and neck stiffness
• Head injury
• Severe abdominal pain
• Central nervous system symptoms, such as confusion or blurred vision
• Fever
• History of immunosuppression
• Hypotension
• Chronic nausea and vomiting (lasting longer than a month)
• Bloody diarrhoea.

The following patients/conditions also require referral:

• Old age
• Children under one year of age
• Late pregnancy
• Suspected poisoning or drug overdose.

Drug, toxin or environmental exposure

Almost any medication may cause nausea and vomiting. It is important to find out what medication the patient is taking, including any alternative medicine or vitamins. If nausea and vomiting occur shortly after taking the medication, it could suggest a possible side-effect. Other common environmental toxins and exposures that may cause nausea and vomiting include excessive alcohol intake and food poisoning. By questioning the patient about exposure to possible toxins and whether family members have been experiencing similar symptoms, it is possible to determine what the patient has been exposed to, and treat or refer accordingly.

Infections

Infections often cause nausea and vomiting. It is particularly common in viral infections of the gastrointestinal tract, although bacteria and their toxins may also cause nausea and vomiting. Nausea and vomiting accompanied by diarrhoea and fever generally suggests viral gastroenteritis, which begins suddenly and resolves quickly. Disease is often self-limiting and patients recover with supportive care. Good hygiene is essential to avoid the spread of infection. Children with vomiting caused by a contagious condition should be kept out of school or day care, until they have not vomited for 24 hours.

Central nervous system conditions

Many conditions that affect the brain or balance control may cause nausea and vomiting. Patients may also experience symptoms in response to emotional or physical stressors. Psychiatric disorders such as anorexia nervosa, bulimia nervosa, depression and anxiety may also present with nausea and vomiting.

Pregnancy

Pregnancy is a common cause of nausea and vomiting, which is most common during the first trimester and should be
considered in any woman of childbearing age. If symptoms are not characteristic of normal “morning sickness”, for example if it has its onset in the second or third trimester or if it is severe, the patient should be referred.

**Pharmacotherapy**

If the patient does not have complications of vomiting that require attention and no symptoms that require referral, he or she can be reassured and treated symptomatically. The decision on how to treat should be made based on the suspected cause, the efficacy of previous treatment, and the ability of the patient to use oral, rectal or injectable medication. Several over-the-counter products are currently available (Table I).

**Complementary therapy**

Although there is debate regarding efficacy, nonpharmacological and complementary therapies are often requested and studies have looked at the efficacy of some of these products in the treatment of nausea and vomiting arising from a variety of causes.

**Acupressure**

Acupressure originated in China. It is based on the principle that the application of pressure to certain points on the body unlocks abnormal energy flow thereby relieving signs and symptoms. The efficacy of this approach has been studied in chemotherapy-induced nausea and vomiting, postoperative nausea and vomiting, nausea and vomiting in pregnancy and motion sickness. Evidence of efficacy for these indications is limited, although anecdotal evidence has supported its use.

**Ginger**

There is a debate regarding the efficacy of ginger in the treatment of nausea and vomiting. Some studies favour the efficacy of ginger over placebo in the treatment of sea sickness, morning sickness and chemotherapy-induced nausea and vomiting.

**Conclusion**

Nausea and vomiting are distressing symptoms that may significantly affect quality of life. The first place many people turn to for help in relieving these symptoms will be the pharmacy. The most important goals in the management of nausea and vomiting are symptomatic relief, the prevention of dehydration and the identification of patients who should be referred. If self-treatment is determined to be appropriate, several over-the-counter products are available, depending on the underlying cause.

**Bibliography**


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**Table I: Medications for the prevention and treatment of nausea and vomiting**

<table>
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<tr>
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<td>Buclizine</td>
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