Palliative Medicine Doctors Meeting

Nausea & Vomiting in advance cancer - Revisit

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Nausea & vomiting are common symptoms in advance cancer, affecting between 40 – 70% of patients

NAUSEA

Nausea is an unpleasant feeling of the need to vomit. It is often accompanied by autonomic symptoms – such as pallor, cold sweat, salivation, tachycardia, and diarrhea. It is usually associated with changes in gut motility patterns, especially gastric stasis. Gastric acid secretion is reduced & salivation increased. Nausea is usually more prolonged & more difficult to control than vomit.

VOMITING

Vomiting is defined as forceful expulsion of the gastric contents via the mouth. It is commonly followed by lethargy & pronounced muscular weakness.

ANATOMY & PHYSIOLOGY (FIG 1 &2)

Stress, anxiety & nausea from any cause induce delayed gastric emptying (via peripheral dopaminergic R on myenteric plexus). This effect is antagonized by the D2-receptor antagonists eg. Metoclopramide & domperidone. In GI tract, enterochromaffin cells in bowel wall is rich in 5HT, which is massively release in response to various stimuli: abdominal RT, chemotherapy & bowel distention and sensitizes the vagal nerve which terminate in CTZ.

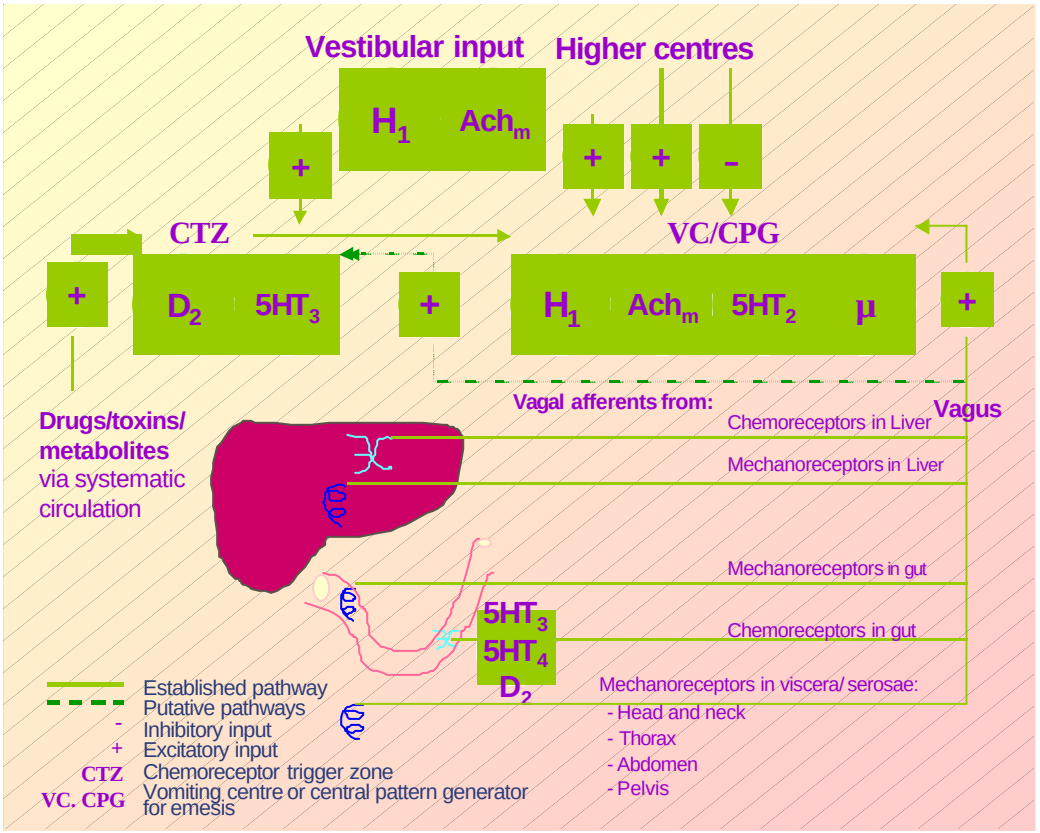

Fig. 1. Major emetogenic pathways

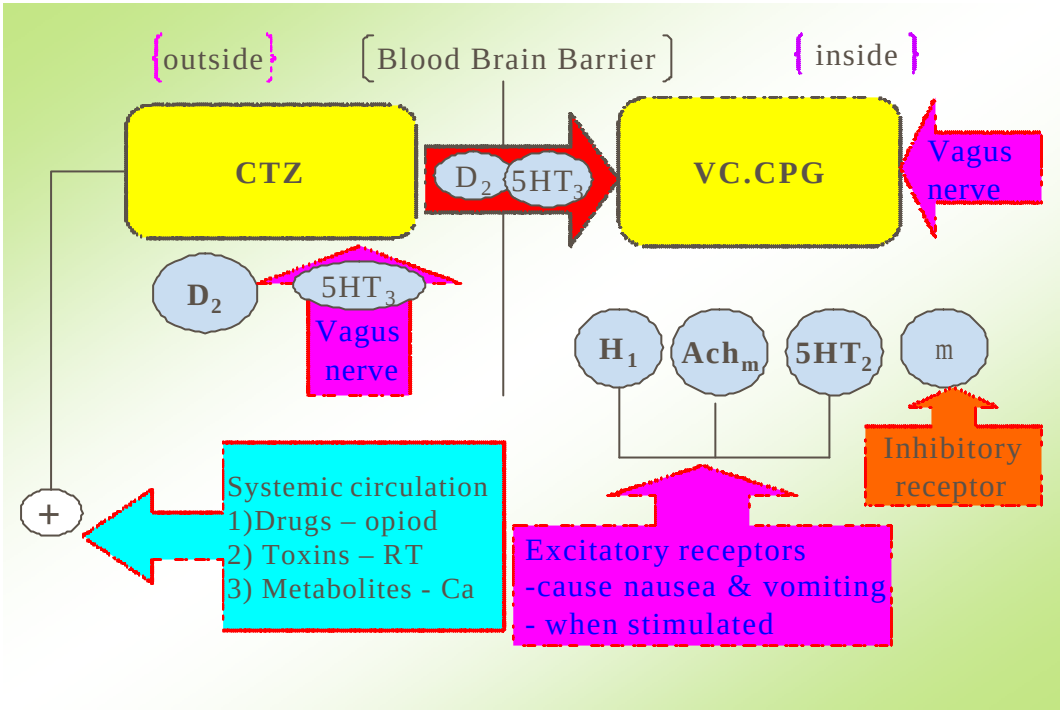

Fig 2.

MANAGEMENT OF NAUSEA & VOMITING

- Evaluation
- Explanation to patient & family
- Individualized treatment
- Supervision & monitoring
- Attention to Detail

EVALUATION – Identify the most likely cause(s)-
(usually caused by several concurrent factors) through detailed history, physical examination, investigation (if appropriate).

1.***Detailed History-***
It is important to distinguish between vomiting & expectoration (by check the pH: gastric secretions – acidic; expectorate – alkaline). Try to evaluate nausea & vomiting separately. Find out the time of onset of symptoms e.g. coinciding with the patient starting morphine. Review drug regimen. Review pattern of vomiting –

- Diurnal variation, related to meal time
- Whether nausea is absent or persistent for prolonged periods after vomiting

Note the content of vomitus - **color** : coffee ground, bile, blood stained, undigested food; **odour** : faeculent. Search for factors which may affect or exacerbate the symptoms of N & V : pain & fear, anxiety, odours : e.g. from fungating wound.

2. Physical examination

3. Investigation if appropriate

1. Common causes of Nausea & Vomiting in advance Cancer

- Metabolic - Hypercalcaemia, renal failure
- Toxic
- RT, Chemotherapy, infection or paraneoplastic phenomenon

- Brain metastases
- Psychosomatic factors – eg. Anxiety or fear
- Pain

2. Record the severity of symptoms

3. Correct reversible causes-

Potentially reversible causes & exacerbating factors should be treated when appropriate –eg. severe pain, infection, cough, hypercalcaemia, tense ascites

4. Non-drug treatments -General measures including:

- A calm, reassuring environment with fresh air
- Unpleasant odors should be minimized e.g. Colostomy, fungating tumour or decubitus ulcer
- Avoidance of exposure to foods known to precipitate N & V
- Avoidance of perfumes, odors of foods that may precipitate N & V
- Sour foods such as lemons & rinsing of mouth with weak lemon juice may reduce nausea
- Small portions, small snacks (esp. for pts with anorexia & early satiety)
- Distraction – talk, music , TV, radio & reading may be of assistance

5. Start drug treatment with an antiemetic if Steps 3 &4 will not give immediate relief

First-line antiemetics:

Prokinetic antiemetic: for gastritis, gastric stasis, functional bowel obstruction
Eg. Metoclopramide

Antiemetic (act in CTZ): for most chemical causes of vomiting eg. Morphine,
Eg. Haloperidol

Antiemetic (act in VC) : for mechanical bowel obstruction, - ICP, motion sickness
Eg cyclizine

■***Do not prescribe* a *prokinetic drug* & an *anticholinergic drug* *concurrently***
■**The final common pathway for prokinetic drugs is cholinergic**
■**Anticholinergic drugs (include cyclizine) block their prokinetic action**

Table 1 Receptor site affinities of selected antimetics

	Dopamine D^2 antagonist	Histamine H^1 antagonist	Acetylcholine (muscarinic) antagonist	$5HT_2$ antagonist	$5HT_3$ antagonist	$5HT_4$ antagonist
Metoclopramide	++	0	0	0	(+)	++
Domperidone	++[2]	0	0	0	0	0
Cisapride	0	0	0	0	0	+++
Ondansetron[b]	0	0	0	0	+++	0
Cyclizine	0	++	++	0	0	0
Hyoscine hydrobromide	0	0	+++	0	0	0
Haloperidol	+++	0	0	0	0	0
Prochlorperazine	++	+	0	0	0	0
Chlorpromazine	++	++	+	0	0	
Levomepromazine (methotrimeprazine)	++	+++	++	+++	0	

Pharmacological activity: 0 none or insignificant, + slight, ++ moderate, +++ marked.

a. Domperidone does not cross the blood-brain barrier and therefore does not cause extrapyramidal effects
b. Other 5HT, antagonists – e.g. granisetron and tropisetron – have comparable receptor affinity.

Pharmacological activity: 0 none or insignificant, + slight, ++ moderate, +++ marked.

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Important factors to consider when prescribing for N & V

- Take account of the effects of antiemetics on GI motility
  - Prokinetic (metoclopramide, domperidone)
  - Antikinetic (anticholinergics, antihistaminic anticholinergics)
- Adjuvant use of antisecretory drugs (eg hyoscine butylbromide, octreotide)
- Use of corticosteroids
- Use of appropriate administration route that ensures delivery of the antiemetic to the site of action
- Appropriate treatment of psychological factors (counselling, benzodiazepines)
- Adverse effects of drugs
- Costs of drugs

6. Re-evaluate at regular intervals

- Optimise the dose of antiemetic every 24 hours
- Change the treatment if there is no improvement after 24 – 48 hours
- Add an appropriate 2nd antiemetic on a 24-48 hour trial basis (~ 1/3 of pts with N&V need >1 antiemetic for satisfactory control)

Explanation

Explain the cause of N & V & discuss the treatment options with patient & the family
Which in turn will enable the patient to maintain some element of control

References

1) Nausea and vomiting in advance cancer – European Journal of Palliative Care, 1998;5(2):39-45
2) The management of nausea and vomiting in advance cancer – Internatinal Journal of Palliative Nursing, 2000 Jan, Vol 6 No1 P18 - 26

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