FAST FACTS AND CONCEPTS #5
THE CAUSES OF NAUSEA AND VOMITING (V.O.M.I.T.)
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**Background**  By understanding the pathophysiology of nausea and targeting antiemetics to specific receptors, therapy can be optimized and side effects minimized. An easy way to remember the causes of vomiting is the **VOMIT** acronym. In the table below receptors involved in different types of nausea are highlighted using this acronym. Blockade of these receptors allows rational, focused therapy.

<table>
<thead>
<tr>
<th>Cause</th>
<th>Receptors Involved</th>
<th>Drug Class Useful</th>
<th>Drug Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vestibular</strong></td>
<td>Cholinergic, Histaminic</td>
<td>Anticholinergic, Antihistaminic</td>
<td>Scopolamine patch, Promethazine</td>
</tr>
<tr>
<td><strong>Obstruction of Bowel by Constipation</strong> (See FF #294 and #295)</td>
<td>Cholinergic, Histaminic, likely 5HT3</td>
<td>Stimulate myenteric plexus</td>
<td>Senna products</td>
</tr>
<tr>
<td><strong>DysMotility of upper gut</strong></td>
<td>Cholinergic, Histaminic, 5HT3, 5HT4</td>
<td>Prokinetics which stimulate 5HT4 receptors</td>
<td>Metoclopramide</td>
</tr>
<tr>
<td><strong>Infection, Inflammation</strong></td>
<td>Cholinergic, Histaminic, 5HT3, Neurokinin 1</td>
<td>Anticholinergic, Antihistaminic, 5HT3 antagonists, Neurokinin 1 antagonists</td>
<td>Promethazine (e.g. for labyrinthitis), Prochlorperazine</td>
</tr>
<tr>
<td><strong>Toxins stimulating the chemoreceptor trigger-zone in the brain such as opioids (see FF 25) or chemotherapy (see FF #285)</strong></td>
<td>Dopamine 2, 5HT3</td>
<td>Antidopaminergic, 5HT3 Antagonists</td>
<td>Prochlorperazine, Haloperidol, Ondansetron</td>
</tr>
</tbody>
</table>

**Notes**
- 5HT3, 5HT4 refer to the serotonin receptors, subtypes 3 & 4.
- Promethazine and prochlorperazine are very different drugs. Promethazine is most useful for vertigo and gastroenteritis due to infections and inflammation. Prochlorperazine is preferred for opioid related nausea.
- There is no evidence supporting the use of lorazepam as a sole agent for nausea. Sedated patients are more prone to aspiration.
- ‘O’ here relates to ‘obstruction’ of bowels by constipation, not mechanical blockage (see Fast Facts #45, 119 for management of mechanical obstructions).
- See FF #93 & #279 for information on cannibinoids and cannabis for nausea and vomiting.

**References**

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