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SA Palliative Care

Community Pharmacy Update

A joint initiative of SA Palliative Care Services and Ambulatory & Primary Health

With some understanding of management strategies, pharmacists may contribute to supporting patients struggling with nausea and vomiting.

Nausea and Vomiting

Nausea and vomiting is commonly experienced by palliative patients and can be debilitating if left uncontrolled, impacting on nutritional status, psychological wellbeing and quality of life. It may also impact the patient's compliance with other medicines (e.g. opioids). Causes are often multifactorial, including:

- Adverse drug reactions;
- Gastrointestinal tract (GIT) conditions such as bowel obstruction; and
- Increased intracranial pressure.

Pathophysiology

The physiology of nausea is complex, involving primary emetic pathways in the:

- Periphery through the GIT; and
- Central nervous system (CNS) via the cortex, chemoreceptor trigger zone (CTZ) and vestibular apparatus (VA).

In general, stimulation is mediated through dopamine (D), acetylcholine (Ach), histamine (H_1) and serotonin ($5HT_3$). Many anti-emetics work against multiple neurotransmitters (see table 1). Nausea mediated by the cortex has a psychological basis and is not linked with specific neurotransmitters.

Following stimulus from at least one of these areas, the vomiting centre in the brain elicits a neuromuscular response presenting as nausea or vomiting.

Management

Non-drug management strategies such as avoiding strong smells must be used in addition to pharmacotherapy. When selecting therapy clinicians will consider likely causes, what has previously worked for the patient, cost, route of administration (e.g. oral route is not appropriate for intractable vomiting) and availability. Prescribing a combination of drugs or using drugs that act on multiple pathways may address symptoms resulting from various causes. As dopamine is implicated in a broad range of pathways (see table 1), **anti-dopaminergic** medications tend to be the most frequently used. They are useful when the cause is unknown. Adjuvant drugs may be prescribed including:

- corticosteroids (e.g. dexamethasone)
- anxiolytics (e.g. lorazepam)
- prokinetic agents (e.g. erythromycin)

Cyclizine and levomepromazine are not currently registered for use in Australia. They are only available through specialist centres. Contact the Advanced Practice Palliative Care Pharmacist in your area for more information.

Table 1: Sites of Action of Antiemetic Drugs

Receptor / Site of Action / Select Medications	D GIT CTZ VA	ACh VA	H_1 VA	$5HT_3$ GIT CTZ
Haloperidol	++++	-	+	-
Domperidone	++++	-	-	+
Metoclopramide	+++	-	-	++
Promethazine	++	++	++++	-
Hyoscine (hydrobromide)	+	++++	+	-
Ondansetron	-	-	-	++++

Plus signs indicate some (+) to considerable (++++) antagonism. Minus sign indicated no effect.

Useful resources

- Therapeutic Guidelines for Palliative Care V3 2010
- Bolin T. Causes and Treatment of Nausea. The Australian Journal of Pharmacy, Vol. 91, No. 1082, July 2010: 74-75

For more information

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