One of the less pleasant facts of working in health care is the death of our patients. For some patients, this follows a short period of evident decline; in others a long rollercoaster of ill health before their ultimate demise. These variances are described using the term ‘illness trajectory’.

For pharmacists it may prove difficult to identify a patient’s position on their personal illness trajectory. There may be ‘trigger’ medicines that might raise suspicions; for example initiation of an opioid analgesic may raise our suspicions of a painful malignant process. However, these triggers are not absolute. It is estimated that approximately 50–65% of patients with cancer will present with moderate to severe pain as a symptom. Pain itself is not a good predictor of anticipated life span and opioids are often used for symptoms other than just pain, for example managing dyspnea.

How then can the pharmacist support the patient and their family as they enter a terminal phase of their illness when:

- it’s difficult for us to identify when this occurs;
- the medication-related needs of this patient may not be identified; and
- pharmacists are generally poorly prepared to be able to offer this support?

A pharmacist working in palliative care may feel insecure and ineffective in communicating appropriately with dying patients and their relatives until they receive both didactic and experiential training and the opportunity to practice their communication skills in scenario-based situations where discussions can become more refined and effective.

There is an Australian Department of Health and Ageing project designed to introduce some elements of palliative care into the educational framework at an undergraduate level. However, this is mainly didactic in nature as advanced communication skills are required for a pharmacist to be effective in this emotionally sensitive area of practice.

REVIEWING THE CONSUMER’S MEDICINES

The use of medicines in palliative care is more than just pain management. It also requires optimising drug use through the:

- careful titration of medications to symptom management;
- anticipation of adverse effects of medicines and their management; and
- management of the overall medication burden in the context of the consumer’s individual position on their illness trajectory.

End of life care

By Anthony Hell, clinical pharmacist in palliative care and senior lecturer, School of Pharmacy, Griffith University, Queensland.

MEDICINES IN PALLIATIVE CARE ARE USED FOR MORE THAN JUST PAIN MANAGEMENT. SYMPTOM RELIEF AND COMMUNICATION ARE ALSO CRITICAL IN THIS EMOTIONALLY SENSITIVE AREA OF PRACTICE.
chronic disease medications may be ceased after careful deliberation, consultation and negotiation with patient, carers and the GP. The balance between the risks, adverse effects and benefits of each medicine requires regular evaluation.

Delirium is a relatively common symptom experienced by patients at end of life. Successful management of end of life delirium is important for both patient and their family as clear and meaningful communication in the last few days or hours of life is highly valued by all. Identification of reversible causes like infections, or hypoxemia, is necessary but the careful review of a patient’s medicines to identify potential medication-related causes for delirium (like opioid metabolite accumulation associated with renal impairment and the influence of cholinergic burden) is something that requires the pharmacist’s consideration.

**MEDICINES THAT MAY BE REQUIRED AT THE END OF LIFE**

Patients may require access to a small number of medicines to manage symptoms associated with the dying process. These may include:

- **Opioid analgesics for emergent or break-through pain**;
- **an antiemetic agent (e.g. haloperidol) for sensations of nausea or symptoms of vomiting (haloperidol can also be used at a slightly higher dose to manage symptoms of agitation or delirium)**;
- **a short-acting benzodiazepine like midazolam for management of feelings of agitation or anxiety; and**
- **an anticholinergic, antisecretory agent (e.g. glycopyrrrolate or hyoscine) to suppress oral pharyngeal secretions that may accumulate in the upper airway of a week and dying patient and produce what is commonly called ‘death rattle’. (This symptom, while distressing to carers, is not thought to adversely affect the patient.)**

All these medicines are, most commonly, given via the unlicensed but highly effective subcutaneous injectable route. Subcutaneous injections are an easy, convenient method of administration; not associated with the ‘trauma’ of an intramuscular injection or the invasive nature of intravenous therapy, but producing a rapid onset and predictable pattern of absorption and onset of action.

Morphine is the most commonly used injectable opioid although hydromorphone and oxycodone can also be used. Pethidine is another agent that may be used, but it is rather short acting with an expected duration of action of only 1–2 hours although it has the advantages of an absence of active metabolites and is not dependent on renal excretion. Haloperidol is an effective antiemetic at low doses (0.5–1.0mg subcutaneously); it has a more sedating antipsychotic action as doses escalate (1.0–5.0mg subcutaneously).

Midazolam is the injectable benzodiazepine of choice although it is very short acting and liable to cause tachyphylaxis. Clonazepam is a longer-acting alternative and the oral drug formulation is a useful mechanism for oral use. Absorption of clonazepam through buccal mucosa seems to occur where swallowing mechanisms are impaired.

Glycopyrrrolate is now commonly used, especially within the hospital environment, as a substitute for hyoscine (hydrobromide or N-butyryl bromide) salts because, as a quaternary ammonium compound, it is not able to cross the blood-brain barrier and so will not contribute to cholinergic burden.

**CONTINUOUS SUBCUTANEOUS ADMINISTRATION OF MEDICINES**

Although many consumers are able to reliably absorb medications from oral route until their death, others require the administration of medications by continuous subcutaneous infusions. All infusion devices used for this route of administration share a common mechanical process; the contents of a reservoir of medicine(s) are infused slowly into subcutaneous tissue. The advantages are:

- **medicines can be reliably administered even when consumers are unable to swallow oral medications; and**
- **blood levels of medicines are maintained consistently which may reduce some adverse effects associated with variations in plasma drug levels consistent with administration by other routes.**

From a pharmaceutical perspective pharmacists are often asked questions about the compatibility of medicines in those devices. The limited evidence available seems to support admixtures of one-to-four medications over periods of up to 24 hours. The most commonly used diluent is sodium chloride 0.9% injection. These mixtures are usually of an opioid analgesic, haloperidol, midazolam and an anticholinergic agent like hyoscine hydrobromide or glycopyrrrolate, in doses that are determined by patient need. Limiting the duration of storage and use of infusions is important as these infusions are usually prepared in non-aseptic clinical conditions.

**ROLE OF THE CARER**

Since many patients may not have the capacity, interest or energy to manage their own medicines towards the end of their lives, the support provided to the carer (informal and formal) becomes increasingly important. Like the consumer, carers need to be able to clearly understand:

- what a medication is intended to do;
- how long it normally takes to work;
- what adverse effects may occur and how these may be recognised;
- when doses may be safely repeated; and
- what to do if the symptom is not resolved.

They may need training and assistance with the preparation of doses. Coordination with the community-based palliative care nursing service or the GP may be required to resolve any identified issues.

Anticipation of a consumer’s needs at end of life is vitally important if the person is to remain symptom free. To facilitate this objective many palliative care services are introducing the Liverpool Care Pathway which brings the best practice model from hospice care into routine clinical practice. The Liverpool Care Pathway was developed to offer guidance by helping clinicians recognising the dying process, outlining goals for care and allowing measurable outcomes to be identified.

The pharmacist does have a role in the care of patients at end-of-life since medicines are often employed at this time. The pharmacist may feel uncomfortable or not competent in their abilities to communicate with the patient or their carers during this emotionally difficult time. Emotional distress is, however, one symptom that may be reduced or alleviated by the use of a kind word, or the performance of a professional service.


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