

## Palliative medicine

THE PAST FIVE YEARS in palliative medicine have involved a period of review and rapid progress in research and service provision. The development of sound evidence to refine longstanding practice is the hallmark of research programs.

**Pain management.** In pain, useful laboratory models now support observations that have been difficult to confirm. Significant nervous system changes in receptors/neurotransmitters and in anatomy are now known to occur in response to uncontrolled pain.

Studies of the complex interactions of opioid receptors, *N*-methyl-D-aspartate receptors, and substance P and its receptors are broadening our knowledge of what happens in chronic pain. In animal models, there is evidence of nerve growth in response to chronic pain. These results indicate a need to control pain aggressively before irreversible changes in the central nervous system occur. The time scale for such changes in humans is still not clear.

Morphine receptors multiply in response to uncontrolled pain. Their migration to the perisynaptic region of the nerve is necessary for them to modulate pain transmission, and is impaired in states of direct nerve damage. The concept that chronic pain is disease of the CNS, not simply nerves firing because of noxious stimuli, is important and clinically relevant.<sup>1</sup>

Palliative medicine has been dominated by the concept of new ways of using old medications. Research and validation of medications for use subcutaneously and in the syringe driver has been of medicolegal significance, as many common practices were outside recommended administration guidelines. The common combinations of medications in syringe-driver infusions had been based on anecdotal observations; recent research has validated some combinations, and provided some surprises for clinicians.<sup>2</sup> The development of long-acting preparations of common opioids has revolutionised clinical care. New delivery systems for opioids have led to slow-release (8–12 hours) and sustained-release (12–24 hours) oral morphine preparations. Transdermal delivery of fentanyl every three days is now widespread. The plethora of opioid preparations and formulations has assisted in individualising treatment of pain for patients with life-limiting illnesses. The ease of use of new formulations has assisted the trend from inpatient to community-based care, with benefits to patients and their carers.

**Service provision.** Palliative service provision has received closer evaluation, and overview data are now available to demonstrate the benefits of coordinated interdisciplinary palliative care. Important issues in service delivery include better coordination of services (rather than simply adding new services), greater access to out-of-hours support, and the specialised knowledge of someone who can advise because they do it all day, every day. Improved patient outcomes include increased time at home, fewer inpatient



bed-days, better patient and carer satisfaction, and a greater likelihood of people dying where they want to.<sup>3</sup>

The complexity of supporting patients with widely differing diagnoses on a journey with a common end remains the challenge in palliative care. There is a growing emphasis on non-malignant diseases — end-stage organ failure, AIDS and neurodegenerative diseases.

The focus of what is important to patients, recently bereaved families, physicians and other healthcare professionals is being researched. Issues that come to the fore include symptom management, achieving a sense of completion, decisions about treatment preferences, and treatment of the “whole person”. For patients, other strong themes include being mentally aware, having funeral arrangements in place, not being a burden, helping others, and coming to peace with God.<sup>4</sup>

**Research.** Studying palliative-care populations poses ethical dilemmas, but such studies do improve care. One study of signal-averaged EEGs for patients who have entered unconsciousness at the end of life<sup>5</sup> showed the response of unconscious patients to stimuli such as familiar voices, the lightening of consciousness just before death in most patients, and the importance of continued use of analgesics in people with a history of pain. In patients sedated with benzodiazepines, the level of unconsciousness was no deeper than in patients not sedated.

As far as direct therapeutic advances are concerned, there have been few advances for the most common symptom, fatigue. Study is also required into cachexia syndromes and restlessness associated with the terminal state. These are areas where a great deal of work is needed if we are to make a sustained difference to people whose bodies are closing down. Future advances in the mechanisms and management of pain will include preparations and formulations designed to assist with the palliative-care principle of individualisation of symptom control. There is much research on the horizon for better clinical outcomes for palliative patients.

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