SYNOPSIS

Pain management

The issue of pain management was highlighted in the 12 November 2003 edition of *JAMA*.

History

Marcia Meldrum, of the Department of History of the University of California-Los Angeles, wrote: 'Pain is the oldest medical problem and the universal affliction of mankind, yet it has been little understood in physiology until very recently.' [1] In Biblical times, pain was regarded as a test of belief, but in more 'enlightened' times, pain became a medical problem, with relief of pain becoming an accepted objective.

Undoubtedly, the introduction of surgical anaesthesia was one of the great revolutions of modern medicine, allowing surgeons to perform longer and more complicated procedures, despite the religious objectors who called anaesthesia a violation of God's law. In the 18th and 19th centuries, opiates were the standard treatment for pain. This provoked the conflict between the physician's desire to relieve pain, and the fear of inducing addiction.

In the early 20th century, many patients suffering unexplained chronic pain syndromes were considered to be deluded, malingerers or drug abusers. Psychotherapy and neurosurgery were often used.

The search for a strong non-addicting analgesic is the aim of an analgesic development programme at the US National Institutes of Health. Many new analgesics have been tested but the ultimate pain-relieving drug has eluded scientists so far.

Repeated regional nerve blocks after nerve injury were used during and after World War I, and 'nerve block clinics' were opened in the USA. World War II provided the information that soldiers injured in battle reported much lower levels of pain than patients investigated in a hospital recovery room setting. This led to the inference that clinical pain was a compound of the physical sensation and a cognitive and emotional 'reaction component'. Arising from this observation, John Bonica campaigned for many years for multidisciplinary pain clinics to promote sharing of clinical and laboratory evidence. But it was not until the publication of Melzack and Wall's 'gate control' article[2] that the 'pain field' became a reality in medicine.

Other important discoveries included the recognition of endogenous petrochemical reactions to pain that could be used therapeutically, and the absence of tolerance or addiction to morphine in cancer patients even with long-term use. During the last 30 years, neuroactive medications, counterstimulation methods and cognitive-behavioural therapies have been developed, with varying degrees of success. New targets currently being investigated include inflammatory mediators, and specific neuropeptide agonists or receptors.

The inescapable fact however, remains: no one treatment works for every patients even for pain of the same type and aetiology.[1]

Current research

Selective cyclo-oxygenase 2 (COX-2) inhibitors are among the new targets for pain management, and were used in a trial for postoperative pain after total knee arthroplasty (TKA). In this double-blind randomised trial, the agent tested was rofecoxib, 50 mg being administered perioperatively at 24 hours, and 1 - 2 hours before TKA, and then daily for 5 days, followed by 25 mg daily for 8 days. The regimen resulted in reduced opioid consumption, pain, vomiting and sleep disturbance, with improved knee range of motion after TKA. [3]

Block *et al*[4]. performed a meta-analysis which examined the efficacy of postoperative epidural analgesia, which indicated that epidural analgesia — regardless of analgesic agent, location of catheter placement, and type and time of pain assessment — provided better postoperative analgesia than parenteral opioids, with the exception of thoracic epidural analgesia for rest pain after thoracic surgery. The complication rates were lower than expected for nausea or vomiting and pruritis, but comparable with existing data for lower extremity motor block.

Research on improvement of depression concomitant with pain is sparse. Lin *et al*[5]. conducted a study to determine whether enhancing care for depression improves pain and functional outcomes in older adults with depression and arthritis. Interventions included antidepressive medication and psychological support therapy. The authors found that the benefits of improved depression care extended beyond reduced depressive symptoms and included decreased pain as well as improved functional status and quality of life.

Possibly allied to the latter, Mäntyselkä and co-workers[6] found that chronic pain is independently related to low self-related health status in the general population. Importantly, it has been shown that self-related health status is an independent predictor of mortality.[7]

The articles published in this issue of *JAMA* cover several methods of controlling pain but, just as important, says Catherine De Angelis, Editor of *JAMA*,[8] 'they point out the necessity for greater awareness of pain as a symptom by clinician, and the need for further research to understand the mechanisms of pain more completely and to find more effective methods of managing pain'.

FNS

1. Meldrum M. *JAMA* 2003; **290**: 2470-2475.
2. Melzack R *et al. Science* 1965; **150**: 971-979.
3. Buvanendran A *et al. JAMA* 2003; **2390**: 2411-2418.
4. Block BM *et al. JAMA* 2003; **2390**: 2455-2463.
5. Lin EHB *et al. JAMA* 2003; **2390**: 2428-2434.
6. Mäntyselkä PT *et al. JAMA* 2003; **2390**: 2435-2442.
7. Idler EL *et al. J Health Soc Behav* 1997; **38**: 21-37.
8. De Angelis CD. *JAMA* 2003; **2390**: 2480-2481.