JOURNAL WATCH

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Our panel of experts highlight the most important research articles across the spectrum of topics relevant to the field of pain management

Expert panel: Nanna B Finnerup, Aarhus University Hospital, Denmark; John D Loeser, University of Washington, WA, USA

Gaskin DJ, Richard P. The economic costs of pain in the United States. *J. Pain* 13, 715–724 (2012).

The authors have used the Medical Expenditure Panel Survey for 2008 to estimate the portion of US healthcare costs and the loss of worker productivity that can be attributed to pain. Their data do not include costs of pain in nursing home residents, children, military personnel and those who are incarcerated, so it is a conservative estimate for the country. The authors report that the total healthcare costs in 2010 ranged from US\$560 to \$635 billion and those due to pain were between \$261 and \$300 billion. This is an annual cost of \$261–\$300 per person in the USA over a base amount of \$4250 per person for those without pain. Approximately 100 million adults were afflicted by chronic pain. Lost productivity ascribed to pain ranged from \$299 to \$335 billion.

The annual cost of pain was greater than the cost of heart disease (\$309 billion), cancer (\$243 billion), injury (\$205 billion), endocrine, metabolic and nutritional (\$127 billion), respiratory diseases (\$112 billion) and diabetes (\$188 billion). Previous reports have indicated that disability costs in the USA for chronic pain in the working years (18–55 years) are greater than the sum of the costs for cancer, heart disease, stroke and AIDS. Although the per person costs of pain are less than for some of these diseases, the total cost of pain is much higher than any of these disease groups because of the greater number of pain sufferers.

It is about time that the many agencies

of the US government increased their interest in, and expenditures for pain, both for research and management. The recent Institute of Medicine report called for a dramatic increase in pain education, research and care based upon similar data. Perhaps we will see a change in the near future but the relentless focus on diseases will be difficult to overcome.

– Written by John D Loeser

Mazzola L, Isnard J, Peyron R, Mauguire F. Stimulation of the human cortex and the experience of pain: Wilder Penfield's observations revisited. *Brain* 135, 631–640 (2012).

The cortical homunculus is a visual representation of which areas of the cortex innervates which body parts. Wilder Graves Penfield (1891–1976) mapped the sensory and motor cortices of the brain through more than 20 years of cortical surface stimulation. During this work, he could not identify a 'pain cortex'. In this recent paper, Mazzola and colleagues analyzed videotaped behavioral responses to 4160 cortical stimulations during presurgical evaluation of epilepsy. Although pain responses were scarce, painful sensations could be elicited from stimulation in the deep-located medial part of the parietal operculum and neighboring posterior insula, and not from other cortical sites. In addition, thermal sensations could also be elicited from these areas. This cortical region may thus be a primary site for sensing pain and temperature.

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– Written by Nanna B Finnerup

Boyle J, Eriksson ME, Gribble L *et al.* Randomized, placebo-controlled comparison of amitriptyline, duloxetine, and pregabalin in patients with chronic diabetic peripheral neuropathic pain: impact on pain, polysomnographic sleep, daytime functioning, and quality of life. *Diabetes Care* doi:10.2337/dc12-0656 (2012) (Epub ahead of print).

Tricyclic antidepressants, gabapentin/pregabalin and serotonin–noradrenaline reuptake inhibitors are first-line treatments for neuropathic pain. We know little about relative efficacy and tolerability of these drugs. This is a double-blind, randomized, parallel-group study of amitriptyline (up to 75 mg), pregabalin (up to 600 mg) and duloxetine (up to 120 mg) in painful diabetic polyneuropathy. There was no difference between the medications with regard to pain reduction and sleep interference. None of the drugs showed a dose–response function. There were a few differences in secondary outcomes; pregabalin improved sleep continuity whereas this was reduced by duloxetine and there

was a decreased performance on a sensory–motor task with pregabalin. Patients reported a higher number of adverse events with pregabalin, in particular fatigue, somnolence and dizziness, but a higher proportion of patients requested to continue with pregabalin at the end of the study. Thus, while this small study could not document differences in analgesic efficacy, there were differences in some secondary parameters.

– Written by Nanna B Finnerup

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