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, Denmark; Dominic Chamberlain, Future Medicine Ltd, London, UK

Koivisto A, Pertovaara A. Transient receptor potential ankyrin 1 (TRPA1) ion channel in the pathophysiology of peripheral diabetic neuropathy. *Scand. J. Pain* 4, 129–136 (2013).

Diabetes is often associated with painful polyneuropathy, which can be very difficult to treat. This paper suggests that sustained activation of the TRPA1 receptor contributes to mechanical and cold hypersensitivity in streptozocin diabetic rats. Pretreating with a TRPA1 antagonist also prevented the later loss and dysfunction of cutaneous pain fiber endings with minimal side effects. While there are of course many contributing mechanisms to painful diabetic neuropathy and all functions of TRPA1 channels are incompletely understood, this study proposes that TRPA1 antagonists may be beneficial in diabetes-related sensory hypersensitivity and may also modify the disease. The related TRPV1 receptor is similarly suggested to be involved in pain mechanisms; however, TRPV1 antagonists have caused unstable temperature regulations and can therefore not be used in pain treatment. This study proposes that TRPA1 antagonists may be an alternative and maybe safer class of analgesic drugs.

– Written by Nanna B Finnerup

Racine M, Choinière M, Nielson WR. Predictors of suicidal ideation in chronic pain patients: an exploratory study. *Clin. J. Pain* doi:10.1097/AJP.0b013e31829e9d4d (2013) (Epub ahead of print).

Patients with severe chronic pain are at higher risk of suicide compared to the

rest of the population, and better knowledge of risk factors are important for targeted prevention. This is a cross-sectional study of 88 chronic pain patients where those reporting having a suicidal ideation (24%) were compared with the remaining patients. Patients who were unemployed or on disability leave were more likely to report suicidal ideation. Depressive symptoms did not significantly predict suicidal ideation but poor perception of own mental health and pain-related helplessness were predictors. With regard to physical predictors, poor sleep quality was an important determinant, while pain duration or severity did not significantly and independently predict suicidal ideation. In addition, patients who had used illicit drugs as pain relief or antidepressants were at a higher risk of having suicidal ideation. This study adds to a better understanding of risk factors, which are important to identify and prevent suicide.

– Written by Nanna B Finnerup

Hechler T, Ruhe AK, Schmidt P et al. Inpatient-based intensive interdisciplinary pain treatment for highly impaired children with severe chronic pain: randomized controlled trial of efficacy and economic effects. *Pain* doi:10.1016/j.pain.2013.09.015 (2013) (Epub ahead of print).

In this study the authors investigated the efficacy of an intensive interdisciplinary pain treatment within a randomized controlled trial by comparing an intervention group (n = 52) to a waiting list control group (n = 52). Pediatric pain can result

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in deleterious effects for the child and also contains a risk of progression into adulthood. Intensive interdisciplinary pain treatment may have the potential to be an effective treatment considering the advantages associated with consulting with multiple professionals on a daily basis; however, the evidence to date is fairly limited.

The authors assessed the subjects before and immediately after treatment, as well as at short- and long-term follow-up. A combined end point of 'improvement' was identified measuring pain intensity, disability and school absence. Additionally, three extra outcome domains of anxiety, depression and catastrophizing were investigated. Finally, the authors also investigated changes in economic parameters (healthcare use, parental work absenteeism and subjective financial burden) and their relationship to the child's improvement.

Assessment immediately after treatment demonstrated that significantly more children in the intervention group than in the waiting-list control group were assigned to improvement (55 vs 14%; Fisher $p < 0.001$; 95% CI for incidence difference: 0.21–0.60). However, although immediate effects were achieved for disability, school absence, depression and catastrophizing, pain intensity and anxiety did not change until short-term follow-up. The authors reported that more than 60% of the children in both groups were improved long-term and that parents reported significant reductions in all economic parameters.

The authors conclude that the results from this study support the efficacy of intensive interdisciplinary pain treatment, and that future research should investigate

differences in treatment response to understand the changes in economic parameters in nonimproved children.

– Written by Dominic Chamberlain

Pappagallo M, Breuer B, Lin HM. A pilot trial of intravenous pamidronate for chronic low back pain. *Pain* doi:10.1016/j.pain.2013.09.016 (2013) (Epub ahead of print).

Previously, intravenous (iv.) bisphosphonates have been demonstrated to relieve pain in conditions such as Paget's disease of bone, metastatic bone disease and multiple myeloma. Following on from positive findings in a case series, the authors of the current paper conducted a randomized, placebo-controlled study assessing the analgesic effect of iv. pamidronate in subjects with chronic low back pain and evidence of degenerative disease of the spine.

Subjects were enrolled into four groups of 11 participants (seven active and four placebo) at escalating dose levels of 30, 60, 90- and 180-mg pamidronate (the latter administered as two 90-mg infusions). The primary outcomes of the study were safety and change from baseline in average daily pain scores, which were recorded at 1-, 2-, 3- and 6-months postinfusion using electronic diaries. Secondary outcomes included responder rate, daily worst pain and pain-related interference of daily function.

The authors reported no serious pamidronate-related adverse events or other significant safety findings. Additionally, the authors observed a statistically significant

overall treatment difference in pain scores, with clinically meaningful effects persisting for 6 months in the 180-mg pamidronate group. The lowest square mean changes in daily average pain score were -1.39 (standard error [SE]: 0.43) for placebo, and -1.53 (SE: 0.71), -1.26 (SE: 0.81), -1.42 (SE: 0.65) and -4.13 (SE: 0.65) for pamidronate 30, 60, 90 and 180 mg, respectively ($p = 0.012$ for pamidronate 180 mg vs placebo). The proportion of responders, changes in worst pain and pain interference of daily function were also significantly improved for pamidronate 180 mg compared with placebo.

From the findings, the authors concluded that iv. pamidronate administered as two 90 mg infusions, decreased pain intensity for 6 months in subjects with chronic low back pain.

– Written by Dominic Chamberlain

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