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Critical Reviews

781 Local Infiltration Analgesia for Postoperative Pain After Hip Arthroplasty: A Systematic Review and Meta-Analysis

Jun-Bin Yin, Guang-Bin Cui, Ming-Shan Mi, Yu-Xia Du, Sheng-Xi Wu, Yun-Qing Li, and Wen Wang

Postoperative pain after hip arthroplasty is very common and painful. Currently, use of routine analgesic methods is often accompanied by adverse events. Local infiltration analgesia (LIA) for controlling pain has been a therapeutic option in many surgical procedures. However, its analgesic efficacy and safety remain unclear. This is the first pooled database meta-analysis to assess the analgesic effects and safety of LIA after hip arthroplasty. The derived information indicates that LIA can be useful for reducing pain scores and analgesic consumption, without any additional adverse events.

800 Self-Efficacy and Chronic Pain Outcomes: A Meta-Analytic Review

Todd Jackson, Yalei Wang, Yang Wang, and Huiyong Fan

This article presents a meta-analysis that was performed to evaluate overall strengths of relation between self-efficacy and functioning in chronic pain samples, as well as potential moderating effects of sociodemographic characteristics and methodologic factors on these associations. The authors report that self-efficacy has significant overall associations with impairment, affective distress, and pain severity within chronic pain samples. The analysis also identified several factors that contribute to variability in effect sizes. Findings highlighted self-efficacy as a robust correlate and potentially important risk/protective factor for subsequent adjustment in affected groups.

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ON THE COVER

Using a matched pain intensity paradigm, where pain intensity was kept constant across participants but pain unpleasantness was left free to vary among participants, this report studied the relationship between pain unpleasantness and pain-evoked brain activity in healthy men and women separately. This article presents neuroimaging findings demonstrating that subjective unpleasantness ratings are associated with different pain-evoked brain responses between the sexes, which have potentially important implications regarding sex differences in the risk of developing chronic pain. See Girard-Tremblay et al, page 867.

Original Reports

815

Altered Resting State Connectivity of the Insular Cortex in Individuals With Fibromyalgia

Eric Ichesco, Tobias Schmidt-Wilcke, Rupal Bhavsar, Daniel J. Clauw, Scott J. Peltier, Jieun Kim, Vitaly Napadow, Johnson P. Hampson, Anson E. Kairys, David A. Williams, and Richard E. Harris

Previously these authors demonstrated that fibromyalgia patients have greater connectivity between the insula and the default mode network at rest, and that changes in the degree of this connectivity were associated with changes in the intensity of ongoing pain. This report provides further support for altered resting-state connectivity between the insular cortex and other brain regions known to participate in pain perception/modulation, which may play a pathogenic role in conditions such as fibromyalgia. The authors speculate that altered insular cortex connectivity is associated with the experience of chronic pain in individuals with fibromyalgia.

827

Forced Treadmill Running Suppresses Postincisional Pain and Inhibits Upregulation of Substance P and Cytokines in Rat Dorsal Root Ganglion

Yu-Wen Chen, Jann-Inn Tzeng, Min-Fei Lin, Ching-Hsia Hung, and Jhi-Joung Wang

Exercise causes a variety of psychophysical effects (eg, alterations in pain sensation). Tissue injury induces mediator releases in the spinal cord resulting in pain hypersensitivity; however, the contribution of the dorsal root ganglion is poorly understood. This article presents the management of postoperative pain by controlling the expression of substance P, IL-6, and IL-1 β in dorsal root ganglion. This finding could potentially help clinicians and physical therapists who seek to examine how exercise may attenuate postsurgical pain and its mechanism.

835

Safety and Efficacy of Once-Daily Hydromorphone Extended-Release Versus Twice-Daily Oxycodone Hydrochloride Controlled-Release in Chinese Patients With Cancer Pain: A Phase 3, Randomized, Double-Blind, Multicenter Study

Shiyong Yu, Wei Shen, Lu Yu, Yanyan Hou, John Han, and Henry M. Richards

Chronic moderate to severe pain is an inevitable symptom associated with advanced stages of cancer, making alleviation of pain an important pursuit. This article demonstrates clinical noninferiority of the efficacy of once-daily hydromorphone extended-release compared with twice-daily oxycodone controlled-release in alleviating cancer pain in Chinese patients, with comparable safety profiles between the 2 treatment groups. This presents a treatment option with the potential for a reduced dosing frequency for health care providers and patients.

845

Repetitive Transcranial Magnetic Stimulation Increases the Corticospinal Inhibition and the Brain-Derived Neurotrophic Factor in Chronic Myofascial Pain Syndrome: An Explanatory Double-Blinded, Randomized, Sham-Controlled Trial

Letizzia Dall'AgnoI, Liciane Fernandes Medeiros, Iraci L. S. Torres, Alicia Deitos, Aline Brietzke, Gabriela Laste, Andressa de Souza, Júlia Lima Vieira, Felipe Fregni, and Wolnei Caumo

Myofascial pain syndrome (MPS) is considered a leading cause of musculoskeletal pain. Chronic MPS has been related to defective descending inhibitory systems. This report shares results from a study of 24 females aged 19-65 years with chronic MPS. Subjects were randomized to receive 10 sessions of repetitive transcranial magnetic stimulation (rTMS) or a sham intervention. Findings reveal that rTMS was superior to placebo/sham, improving clinical, neurophysiological, and biochemical outcomes in patients with chronic MPS.

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Opioids Enhance CXCL1 Expression and Function After Incision in Mice

Yuan Sun, Peyman Sahbaie, DeYong Liang, Wenwu Li, and J. David Clark

Chronic opioid consumption increases postoperative pain. Epigenetic changes related to chronic opioid use and surgical incision may be partially responsible for this enhancement. The CXCL1/CXCR2 signaling pathway, implicated in several pain models, is known to be epigenetically regulated via histone acetylation. This work investigated the role of CXCL1/CXCR2 signaling and elucidates the possible epigenetic mechanism underlying CXCL1/CXCR2 pathway-mediated regulation of nociceptive sensitization in mice.

867

Sex Differences in the Neural Representation of Pain Unpleasantness

Lydia Girard-Tremblay, Vincent Auclair, Kathya Daigle, Guillaume Léonard, Kevin Whittingstall, and Philippe Goffaux

Sex differences in pain perception are still poorly understood, but they may be related to the way the brains of men and women respond to the affective dimensions of pain. Using a matched pain intensity paradigm, where pain intensity was kept constant across participants but pain unpleasantness was left free to vary among participants, this report studied the relationship between pain unpleasantness and pain-evoked brain activity in healthy men and women separately. This article presents neuroimaging findings demonstrating that subjective unpleasantness ratings are associated with different pain-evoked brain responses in men and women, which has potentially important implications regarding sex differences in the risk of developing chronic pain.

878**Correlation Between Ventral Striatal Catecholamine Content and Nociceptive Thresholds in Neuropathic Mice**

Anna M. W. Taylor, Niall P. Murphy, Christopher J. Evans, and Catherine M. Cahill

Neuropathic pain is characterized by persistent, intractable pain following damage or dysfunction of the nervous system. In this study, the authors used a C57Bl/6 mouse model of neuropathic pain to describe the changes in neurotransmitter content in the striatum and their relationship to evoked pain thresholds. Results show significant loss of ventral striatal dopamine in neuropathic pain conditions, and the relationship of ventral striatal catecholamines to pain thresholds is changed in neuropathic pain. These results complement human imaging studies and provide evidence that chronic pain alters the function of reward systems.

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