PRESIDENT’S MESSAGE
2153 Daniel B. Carr, MD, DABPM, FFPANZCA (HON)
“Care” Without Compassion—The Eighth Social Sin?

SPINE SECTION

Original Research Articles

2155 Carrie M. Carr, MD, Christopher T. Plastaras, MD, Matthew J. Pingree, MD, Matthew Smuck, MD, Timothy P. Maus, MD, Jennifer R. Geske, MS, Christine A. El-Yahchouchi, MD, Zachary L. McCormick, MD, and David J. Kennedy, MD

Immediate Adverse Events in Interventional Pain Procedures: A Multi-Institutional Study
In the literature and press there is heightened concern about serious complications resulting from interventional spine procedures. Risk of adverse events may be increased with poor technique. Detailed practice guidelines have been promoted in order to minimize risk; however, these have not been tested quantitatively. This study evaluates the rate of immediate adverse events for interventional spine procedures performed at three separate academic centers where practitioners used evidence-based guidelines of ISIS. No significant adverse events occurred in over 26,000 consecutively performed procedures.

2162 Mats Persson, MD, Jan Sörensen, MD, PhD, and Bjoern Gerdle, MD, PhD
Chronic Whiplash Associated Disorders (WAD): Responses to Nerve Blocks of Cervical Zygopophyseal Joints
The study explores the prevalence of pain in chronic WAD referred from cervical zygopophyseal joints. Forty-seven patients with chronic WAD were scheduled for a diagnostic procedure with double-blinded placebo controlled blocks of cervical medial branches. The study yielded 29% true positive responders, 11% placebo responders, and 60% non responders.

2176 Timothy P. Maus, MD, Christine A. El-Yahchouchi, MD, Jennifer R. Geske, MS, Rickey E. Carter, PhD, Timothy J. Kaufmann, MD, John T. Wald, MD, and Felix E. Diehn, MD
Imaging Determinants of Clinical Effectiveness of Lumbar Transforaminal Epidural Steroid Injections
This study retrospectively reviewed the associations of imaging characteristics of compressive lesions (disc herniation versus fixed lesion, degree of neural compression, presence of tandem lesions) and patient outcomes after lumbar transforaminal epidural steroid injections (TFESI) stratified by steroid formulation used (solution versus suspension). Outcomes for disc herniations were more favorable than for fixed lesions. However, fixed lesions treated with dexamethasone had outcomes indistinguishable from disc herniations. Tandem lesions had poorer outcomes.

Review Article

2185 Yakov Vorobeychik, MD, PhD, Anil Sharma, MD, Clark C. Smith, MD, MPH, David C. Miller, MD, MA, Milan P. Stojanovic, MD, Steve M. Lobel, MD, Marc A. Valley, MD, MPH, MS, Belinda Duszynski, BS, and David J. Kennedy, MD on behalf of the Standards Division of the Spine Intervention Society
The Effectiveness and Risks of Non–Image-Guided Lumbar Interlaminar Epidural Steroid Injections: A Systematic Review with Comprehensive Analysis of the Published Data
The Spine Intervention Society's Standards Division performed a systematic review assessing the effectiveness and risks of non-image-guided lumbar interlaminar epidural steroid injections. Current evidence suggests that in patients with lumbar radicular pain secondary to disc herniation or neurogenic claudication due to spinal stenosis, these injections appear to have clinical effectiveness limited to short-term pain relief. In a contemporary medical practice these procedures should be restricted to the rare settings where fluoroscopy is not available.

continued.
Does a Brief Educational Session Produce Positive Change for Individuals Waiting for Tertiary Chronic Pain Services?

Tertiary pain services frequently have lengthy wait-lists which have been associated with patient deterioration. Pre-clinic interventions are becoming increasingly utilised to mediate wait-times but optimal program intensity is unclear. A brief pre-clinic education session was piloted and the impact of waiting six-months to access treatment assessed. Session attendance did not improve function. Waiting did not result in deterioration. Rather, referral (not treatment) was associated with short-term functional improvements. Implications for clinical practice are discussed.

Graded Activity for Older Adults with Chronic Low Back Pain: Program Development and Mixed Methods Feasibility Cohort Study

The study reports the development of a graded-activity program especially for older adults with chronic low back pain and its evaluation within a mixed methods feasibility pilot-study. Sixteen community-dwelling older adults (73.9 ± 5.9 years on average) and three physical therapists participated in the study. The interviews revealed high acceptance, satisfaction, and practicality. Self-rated assessment indicates preliminary effectiveness of increase in function, decrease of pain intensity, and reduction in catastrophizing and avoidance behavior.

Deconstructing Chronic Low Back Pain in the Older Adult—Step-by-Step Evidence and Expert-Based Recommendations for Evaluation and Treatment: Part XII: Leg Length Discrepancy

A multidisciplinary expert panel came together to create an algorithm and supportive materials to help guide primary care providers in planning treatment for older adults with leg length discrepancy (LLD), an important and often overlooked contributor to chronic low back pain (CLBP).

Deconstructing Chronic Low Back Pain in Older Adults: Summary Recommendations

How Do Patients with Chronic Pain Benefit from a Peer-Supported Pain Self-Management Intervention? A Qualitative Investigation

Patients and peer coaches who participated in a peer support intervention for pain self-management described three elements of the intervention that they believe conferred benefit: 1) Making interpersonal connections; 2) Providing/receiving encouragement and support; 3) Facilitating the use of pain self-management strategies. Understanding how peer support may benefit patients is essential to optimize the effectiveness of peer support interventions and increase the implementation potential of peer-supported pain self-management into clinical practice.

Patterns of Cerebral Blood Flow Modulation During Painful Stimulation in Fibromyalgia: A Transcranial Doppler Sonography Study

The study analyzed the temporal dynamics of cerebral blood flow (CBF) modulations during painful anticipation and stimulation in fibromyalgia vs. controls using functional transcranial Doppler sonography. A complex pattern of CBF modulations with four components was observed: an anticipatory, an early increase, a transient decrease and a final increase. The anticipatory, early, and decrease CBF components were of greater amplitude in patients vs. controls, especially for the right anterior artery. Clinical pain correlated with CBF responses.
Drug Overdose: Differing Risk Models for Women and Men among Opioid Users with Non-Cancer Pain
This study offers the first sex-specific models assessing risk for drug overdose after starting opioid therapy. Although all persons with a history of alcohol abuse or substance use disorder have significantly increased risk for drug overdose; this risk appears to be even greater for women. Even though women were more likely to fill prescriptions for multiple risky drugs, men had a greater risk of drug overdose from receiving multiple drugs.

Development and Preliminary Evaluation of an Integrated Cognitive-Behavior Treatment for Chronic Pain and Substance Use Disorder in Patients with the Hepatitis C Virus
We detail an iterative process for developing an integrated cognitive-behavior treatment for chronic pain and comorbid substance use disorder in patients with the hepatitis C virus. Preliminary testing of the intervention revealed positive results for improving pain and addiction-related outcomes. Further testing of the intervention appears warranted.

National Action Plan for Adverse Drug Event Prevention: Recommendations for Safer Outpatient Opioid Use
Adverse drug events (ADEs) have been highlighted as a major patient safety and public health challenge by the National Action Plan for Adverse Drug Event Prevention (ADE Action Plan), which was released by the Office of Disease Prevention and Health Promotion (ODPHP) in August 2014. The ADE Action Plan focuses on surveillance, evidence-based prevention, incentives and oversights, additional research needs as well as possible measures and metrics to track progress of ADE prevention within three drug classes: anticoagulants, diabetes agents, and opioids. With outpatient opioid prescriptions being a great concern among many healthcare providers, this article focuses on recommendations and current federal methods in place to prevent opioid ADEs while also providing evidence to encourage providers and hospitals to innovate new systems and practices to increase prevention.

“Managing” the Placebo Effect: The Single-Blind Placebo Lead-in Response in Two Pain Models
‘Placebo effects’ in analgesic medication trials for chronic pain are pervasive, however, little is known regarding mechanisms or factors that may influence the presence or magnitude of these effects. Our objective is to consider elements of the placebo response in the context of two pain models using a ‘single blind placebo lead in’ design (SBPLI). Placebo effects emerged across psychometric and performance-based measures, indicating the pervasiveness of this phenomenon. In this design, diagnostic and (to a lesser extent) gender categories differentials were observed during the placebo period.

Spinal Cord Stimulation Provides Pain Relief with Improved Psychosocial Function: Results from EMP3OWER
The study demonstrated that the Eon Mini SCS device provides pain relief for the majority of patients subjects with high levels of satisfaction and improved QoL. A significant reduction of anxiety, catastrophizing, and disability were noted; mental and physical health was improved.

High-Frequency Spinal Cord Stimulation for Chronic Pain: Pre-Clinical Overview and Systematic Review of Controlled Trials
High frequency spinal cord stimulation (HFSCS) may provide paresthesia-free pain relief for chronic pain, in contrast to conventional spinal cord stimulation (SCS) which produces paresthesias. In this systematic review, pre-clinical studies characterize the current state of knowledge about the mechanism of HFSCS. Clinically, 8 trials met inclusion criteria and followed 160 patients prospectively. Growth in this evidence base suggests HFSCS differs from conventional SCS in mechanism and efficacy, while current knowledge gaps require high-quality trials that standardize reporting and properly mask patients.
NEUROPATHIC PAIN SECTION

Original Research Articles

2337 Catelijne M. van Bussel, MD, Dirk L. Stronks, PhD, and Frank J. P. M. Huygen, MD, PhD

*Phenotypic Variation in Complex Regional Pain Syndrome: Comparison Between Presentation in Knee Alone or in Ankle/Foot*

We retrospectively compared the symptoms and the signs of CRPS confined to the knee with CRPS of the ankle/foot. To our knowledge, this was the first study that compared the phenotype of CRPS of these two locations. We conclude that the phenotypic variation in terms of symptoms and signs of CRPS of the knee compared to CRPS of the ankle/foot is limited, but the phenotypes are not identical.

2344 Piotr K. Janicki, MD, PhD, Guillermo M. Alexander, PhD, Jill Eckert, DO, Marek Postula, MD, PhD, and Robert J. Schwartzman, MD

*Analysis of Common Single Nucleotide Polymorphisms in Complex Regional Pain Syndrome: Genome Wide Association Study Approach and Pooled DNA Strategy*

The objective of this study was to use a genome-wide association (GWAS) approach and pooled DNA strategy to search for new genomic loci associated with complex regional pain syndrome (CRPS). Despite the fact that we interrogated about 83% of all of common SNPs in the human genome, we did not find evidence that the investigated common SNPs may be associated with CRPS phenotype.

2353 Michael Bullen, MBBS, Postgrad Dip Anat, Coran Lang, MBBS, FFPMANZCA, and Phong Tran, MBBS, FRACS (orth) FAOrthoA

*Incidence of Complex Regional Pain Syndrome I Following Foot and Ankle Fractures Using the Budapest Criteria*

This study aimed to prospectively determine the incidence of complex regional pain syndrome following foot and ankle fractures using the Budapest criteria. A total of 306 consecutive eligible patients were included. The incidence of CRPS in this study was 0.3%.

Case Report

2360 Kenji Seo, DDS, PhD, Makoto Terumitsu, DDS, PhD, Yuji Inada, MD, Tatsuho Nakamura, MD, Keiji Shigeno, DDS, PhD, and Yutaka Tanaka, DDS, PhD

*Prognosis After Surgical Treatment of Trigeminal Neuropathy with a PGA-c Tube: Report of 10 Cases*

Ten cases of surgical treatment of intractable pain due to lingual or inferior alveolar nerve neuropathy were reported. Use of a PGA-c tube for the surgical repair helps alleviate sensory impairment. However, possibility of new dysesthesias emerging postoperatively should be noted.

MUSCULOSKELETAL SECTION

Original Research Article

2369 Ester Cerezo-Téllez, MSc, PhD, María Torres-Lacomba, PhD, Orlando Mayoral-del Moral, PT, MSc, Beatriz Sánchez-Sánchez, PT, PhD, Jan Dommerholt, PT, DPT, and Carlos Gutiérrez-Ortega, PhD

*Prevalence of Myofascial Pain Syndrome in Chronic Non-Specific Neck Pain: A Population-Based Cross-Sectional Descriptive Study*

Myofascial pain syndrome is a common source of pain in chronic non-specific neck pain patients. The most affected muscles are the trapezius, levator scapulae, multifidi, and splenius cervicis muscles.

ACUTE & PERIOPERATIVE PAIN SECTION

Original Research Articles

2378 Stephen E. Daniels, DO, Tong J. (TJ) Gan, MD, Douglas A. Hamilton, MBA, Neil Singla, MD, Peter G. Lacouture, PhD, Olufunmilobi Johnson, PharmD, Lauren H. Min, BA, Christian R. D. Reyes, MS, and Daniel B. Carr, MD

*A Pooled Analysis Evaluating Renal Safety in Placebo- and Active Comparator-Controlled Phase III Trials of Multiple-Dose Injectable HP\(b\)CD-Diclofenac in Subjects with Acute Postoperative Pain*

Pooled analysis of data from two randomized, placebo- and active comparator-controlled phase III trials was conducted to examine the renal safety of HP\(b\)CD-diclofenac when given for up to 5 days following surgery. No significant difference in renal AE risk was detected for patients receiving HP\(b\)CD-diclofenac - or the active comparator ketorolac - versus placebo. The results suggest that HP\(b\)CD-diclofenac use for acute postoperative pain may not be associated with added renal safety risks over placebo.
Trends in Opioid Analgesic Use in Encounters Involving Physician Trainees in U.S. Emergency Departments

Opioid analgesic utilization in emergency departments (EDs) has risen dramatically in the past two decades. We studied trends in the use of five distinct opioid analgesics among ED visits involving physician trainees at two time intervals (2001-2 and 2009-11). Overall, opioid prescribing increased significantly. Prescribing by trainees paralleled that of attending physicians. Interventions to promote safe and appropriate opioid use should target physicians in training as well as attending physicians.

Effect of Local Anesthetic Concentration (0.2% vs 0.1% Ropivacaine) on Pulmonary Function, and Analgesia After Ultrasound-Guided Interscalene Brachial Plexus Block: A Randomized Controlled Study

Use of 0.1% ropivacaine for interscalene block for analgesia of the shoulder after shoulder arthroscopy was associated with better lung mechanics when compared to 0.2% concentration in a fixed 20 ml volume. In the high concentration group, sensory block lasted longer and patients used less opioids throughout the assessment period. Clinical significance of improvement in the lung mechanics needs to be elucidated in further studies.

Intrathecal Therapy for Cancer-Related Pain

Intrathecal therapy is an alternative to oral therapies for patients with cancer-related pain because it has fewer systemic concerns. Morphine and ziconotide are approved for intrathecal analgesia. Randomized, controlled studies of intrathecal therapy for cancer-related pain are limited; tolerance and safety concerns may deter use of intrathecal morphine. Ziconotide may reduce cancer-related pain; however, proper dosing and titration must be used. Additional research is needed to support the effectiveness of these therapies in cancer survivors.

Local and Generalized Endogenous Pain Modulation in Healthy Men: Effects of Exercise and Exercise-Induced Muscle Damage

Exercise-induced muscle damage (EIMD) and delayed on-set muscle soreness (DOMS) were induced to examine the effects of acute changes in localized pain sensitivity on endogenous pain inhibition. DOMS did not alter endogenous pain inhibition during or following isometric exercise to fatigue. During exercise pressure pain threshold increased in both the exercising and contra-lateral quadriceps muscles. Following exercise pressure pain thresholds remained elevated in the exercised quadriceps, but returned to baseline in the contra-lateral quadriceps.

LETTERS TO EDITOR

Cervical Myelitis Presenting as Occipital Neuralgia

Ultrasonographic Imaging of a Pancoast Tumor Presenting with Breakthrough Pain and Not Visualized by Plane Radiograph

Comment on “Perforator-Guided Drug Injection in the Treatment of Abdominal Wall Pain”

Ultrasound of Small Nerves and Perforator-Guided Treatment of ACNES

Errata