

# Canadian Pain Society Conference

May 27 – 30, 2009, Quebec City, Quebec

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## PAIN EDUCATION DAY THURSDAY MAY 28, 2009

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9:15 AM – KEYNOTE SPEAKER

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### 1 DIFFUSE PAIN IN FIBROMYALGIA: FROM NEUROPHYSIOLOGY TO CLINICAL OBSERVATION

Chair: **André Bélanger**

Speaker: **Serge Marchand PhD**

Serge Marchand PhD, Director of Pain Research, Université de Sherbrooke, Faculty of Medicine, Neurosurgery, Sherbrooke, Québec

#### Learning Objectives:

1. Understanding the basic neurophysiological mechanisms of fibromyalgia.
2. Recognizing the factors predisposing to chronic widespread pain.
3. Being introduced to the factors implicated in the heterogeneity of fibromyalgia patients and their responses to treatment.

**BRIEF DESCRIPTION:** Patients suffering from fibromyalgia present diffuse pain symptoms that are not characteristics of neurogenic pain. However, some neurophysiological mechanisms, such as a disturbance of endogenous pain modulation systems, may help understanding the mechanisms implicated. During this talk I will introduce some of our work on different factors that are affecting the efficacy of these endogenous pain modulation mechanisms and discuss how diffuse pain may result from a central imbalance in endogenous excitatory and inhibitory mechanisms. Recent data will be presented supporting our understanding of the neurophysiological mechanisms of diffuse pain in fibromyalgia with some references to the clinical signs observed in the fibromyalgia patients.

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11:00 AM – SESSION 101

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### 2 CURRENT MODELS IN PAIN KNOWLEDGE TRANSLATION

Chair: **Michael McGillion**

Speakers: **Manon Choinière PhD, James Henry PhD**

Manon Choinière PhD, Department of Anesthesiology, Faculty of Medicine, Université de Montréal, Montreal, Quebec; James Henry PhD, Michael G DeGroote Institute for Pain Research and Care, Department of Psychiatry and Behavioural Neurosciences, Department of Anesthesia, McMaster University, Hamilton, Ontario

#### Learning Objectives:

1. Participants will understand key knowledge translation principles underlying major programs of clinical and basic science research.
2. Participants will understand the balance between knowledge generation and knowledge translation as they apply to improved quality of life for those who suffer chronic pain.
3. Participants will understand the elements and challenges clinical scientists face when doing research on pain knowledge exchange.
4. Participants will understand key knowledge translation principles underlying major programs of clinical and basic science research.
5. Participant will understand the balance between knowledge generation and knowledge translation as they apply to improved quality of life for those who suffer chronic pain.

### 2A

#### ACCORD – AN EXAMPLE OF A CLINICAL RESEARCH PROGRAM ON PAIN KNOWLEDGE EXCHANGE

**Manon Choinière PhD**

Department of Anesthesiology, Faculty of Medicine, Université de Montréal, Montreal, Quebec

**BRIEF DESCRIPTION:** The creation of community alliances in which patients, clinicians, and policy/decision makers are involved as active players with pain researchers is not only an innovation, it is a necessity. Such alliances are needed to foster knowledge exchange on pain, to enhance mutual learning and collaboration, and to conduct research of relevance to community groups. However, translating and exchanging the knowledge among all stakeholders in the pain arena underlies a new and different way of doing research, and it requires a switching of paradigms. The Programme ACCORD (Application Concertée des Connaissances et Ressources en Douleur) is a community alliance of researchers and non-researchers whose main objective is to reduce the gap between the best possible care and the actual care chronic pain patients receive using innovative and effective knowledge translation and exchange (KTE) strategies related to the prevention, assessment, and management of chronic pain. Three main audiences are targeted: primary caregivers, policy/decision makers, and patients/public. The efficacy and impact of the KTE strategies are assessed from a clinical, social and economic point of view using pragmatic studies performed in real world settings. After having overviewed the various projects included in the Programme ACCORD, this presentation will include a discussion of the elements and challenges researchers, health care providers and patients encounter when confronted with the challenge of doing high quality KTE research.

### 2B

#### KNOWLEDGE GENERATION VS. KNOWLEDGE TRANSLATION FOR THE BASIC SCIENTIST

**James Henry PhD**

Michael G DeGroote Institute for Pain Research and Care, Department of Psychiatry and Behavioural Neurosciences, Department of Anesthesia, McMaster University, Hamilton, Ontario

**BRIEF DESCRIPTION:** Knowledge management applied within an organizational framework ensures growth, continuity and sustainability, as action outcomes are measured as life habits and quality of life, and these outcomes are applied to refresh the cycle of knowledge management. The entry point to this organizational framework can be at any point of a number of levels, including new discoveries, such as those from basic science laboratories, but also from environmental scans and needs assessments. It is important that knowledge generation accompany knowledge translation along the path toward ensuring that Canadians live well, as free as possible from undue pain and suffering. Innovations from basic science research on the pathophysiology of chronic pain have helped some patients, but these innovations have not addressed the needs of many others who may be suffering a different type of pain. Innovation can be accelerated, but this would require a different approach from what we have had in the past, and this is governed by policy. It is clear from critical perusal of the scientific literature that, in general, innovation comes most from the best-funded research efforts attracting the most innovative minds. The translation of laboratory-based, scientific discoveries into practical, clinical applications is a current need. Such translational research has a reasonable probability of leading to practical outcomes within the foreseeable future and likewise resultant clinical findings should stimulate new areas of basic research. Inherent in translational research is the recognition of both efficacy (i.e., does the intervention work in a controlled setting) and effectiveness (i.e., does the intervention work in the natural environment) research. Effective translational research is extremely important in pain research and is needed to bridge the inherent differences in approach between basic

## Abstracts

studies of pain and the clinical study of pain conditions. Therefore, we need to recognize that if we intend to ramp up innovation, we need to increase funding. Canada prides itself on its health services and health care. Many who suffer chronic pain, though, do not share this pride. If we are going to see benefits, even eventually, we need to recognize the impact of funding policy, or the lack of it, on our ability to generate new knowledge about the pathophysiology of chronic pain. Medical need should be driving policy. CAHR-pain is a network of researchers spanning knowledge translation strategies and tools, ranging from self-management to support for policy decisions. The objectives of this network are to accelerate the capture of the benefits of research for Canadians through improved health, more effective and responsive services and products, and a strengthened health care system through promoting and integrating six internationally-recognized success stories to bring about health reform and health care reform across Canada as it pertains to the one in five Canadians living with chronic, disabling pain. An organizational framework will maximize opportunities for partnerships with non-governmental organizations to participate in applying capacity with process to put evidence into practice.

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11:00 AM – SESSION 102

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### 3 FIBROMYALGIA UPDATE

**Chair:** Serge Marchand

**Speaker:** [Juliana Barcellos de Souza PhD](#)

**Juliana Barcellos de Souza PhD, Department of Collective Health, Universidade Federal de Santa Catarina, Florianópolis, Brésil**

#### Learning Objectives:

1. Updating multidisciplinary treatment for fibromyalgia.
2. Learning strategies to increase fibromyalgia adherence and treatment outcomes.
3. Understanding the heterogeneity of fibromyalgia patients.

**BRIEF DESCRIPTION:** Multidisciplinary approaches are used more and more to treat fibromyalgia, despite a lack of proof of their long-term efficacy and despite the large inter-subject variability regarding improvement. During this talk I will describe some multidisciplinary programs and introduce some strategies to increase outcomes, reporting the results of our Interactional School of Fibromyalgia. Not only is the improvement significant but it is also persistent after treatment and the abandon rate was only 3%. In addition, I will introduce the identification of two sub-groups of FM patients, distinguishable by symptoms. This distinction could explain in large part the heterogeneity of the clinical manifestation of FM.

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11:00 AM – SESSION 103

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### 4 ARTHRITIS IN THE ELDERLY

**Chair:** André Bélanger

**Speaker:** [Philip A Baer MDCM FRCPC FACR](#)

**Philip A Baer MDCM FRCPC FACR, Co-chair, Therapeutics Committee, Canadian Rheumatology Association; Vice-president, Ontario Rheumatology Association; Chair, Section of Rheumatology, Ontario Medical Association, Toronto, Ontario**

#### Learning Objectives:

1. Manage OA pain in the elderly individual taking into account comorbidities and the risk/benefit implications of different therapeutic modalities.
2. Distinguish pseudogout from inflammatory arthritis and other forms of crystal-induced arthritis, and manage pseudogout appropriately.
3. Suspect, diagnose and treat polymyalgia rheumatica while minimizing the adverse effects of steroid therapy.

**BRIEF DESCRIPTION:** This will be an interactive, case-based session covering several common forms of arthritis affecting older individuals. Osteoarthritis, pseudogout and polymyalgia rheumatica will be emphasized. Typical presentations, diagnostic testing, and management

challenges will be reviewed. Alterations in presentation and management related to advanced age will be highlighted.

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11:00 AM – SESSION 104

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### 5 ACUTE POSTOPERATIVE PAIN AND THE TRANSITION TO CHRONICITY

**Chair:** Pierre Dolbec

**Speakers:** [Avinash Sinha MBChB FRCA \(UK\)](#), [Joel Katz PhD](#)

**Avinash Sinha MBChB FRCA (UK), Assistant Professor, Department of Anaesthesia, McGill University, Director of Acute Pain Services, MUHC Department of Anaesthesia, Montreal General Hospital, Montreal, Québec; Joel Katz PhD, Department of Psychology, York University, Department of Anesthesia and Pain Management, Toronto, Ontario**

### 5A ACUTE PAIN MANAGEMENT STRATEGIES

**Speaker:** [Avinash Sinha MBChB FRCA \(UK\)](#)

**Assistant Professor, Department of Anaesthesia, McGill University, Director of Acute Pain Services, MUHC Department of Anaesthesia, Montreal General Hospital, Montreal, Québec**

#### Learning Objectives:

1. Review current literature for the benefits of [regional] anaesthesia and analgesia.
2. Assessing rehabilitative outcomes [rather than just 'pain']
3. Pre-Per-Post-operative management strategies outlined

**BRIEF DESCRIPTION:** The morbidity and mortality benefits of good peri-operative [regional] analgesia have been recognized by authors in review [Liu et al 2007]. Also the reduction of 'soft indicators' such as nausea, sedation and pruritis have been related to the diminution of opiate requirements, resulting in a decreased hospital stay. The progression of surgical technique and hospital resource utilisation, towards minimally invasive surgery and dramatically reduced hospital stay with accelerated rehabilitation, have encouraged the evolution of novel anaesthetic and multi-modal analgesic strategies based around regional anaesthetic techniques. In this "brave new world order" the necessity for consistent & adequate acute pain control is an integral part of the patient's [rehabilitative] outcome.

Furthermore the health system cost & social consequence of failure is considerable in the short term [unplanned admission] and in the long term [chronicity of acute pain]; delaying a patient's return to being a productive member of society.

### 5B THE TRANSITION OF ACUTE TO CHRONIC POST-SURGICAL PAIN

**Speaker:** [Joel Katz PhD](#)

**Department of Psychology, York University, Department of Anesthesia and Pain Management, Toronto, Ontario**

#### Learning Objectives:

1. To understand the links between pain physiology and pain psychology
2. To become familiar with current concepts and terminology in pain
3. To be able to specify the incidence of and risk factors for chronic post surgical pain
4. To identify the rationale for and approaches to preventive analgesia

**BRIEF DESCRIPTION:** A little appreciated fact is that every chronic pain was, at one time, acute. And yet not all acute pain becomes chronic. Regardless of the cause, the vast majority of people recover and do not go on to develop long-term pain. However, in the case of post-surgical pain, certain procedures are followed by an alarmingly high rate of long-term pain and discomfort. What factors are responsible for the transition of acute post-operative pain to chronic, intractable, pathological pain? We do not have an answer to this important question, but research points to

the severity of perioperative pain as a risk factor for the development of chronic pain. What must be determined is the aspect(s) of pain that is predictive. Is it something about the pain per se, or the individuals who report the pain? Will aggressive management of acute pain alter the course and decrease the incidence of chronic pain? This presentation will address these questions as they relate to the development of chronic post surgical pain using a biopsychosocial framework.

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2:00 PM – SESSION 105

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**6**  
**FIBROMYALGIA PRIMARY CARE CHE PROGRAM**

**Chair: Serge Marchand**

**Speaker: Christian Cloutier BSC MD FRCS(C)**

**Christian Cloutier BSC MD FRCS(C), Neurochirurgien, Professeur agrégé département de chirurgie, Responsable de la clinique multidisciplinaire de douleur CHUS, Sherbrooke, Québec**

**Learning Objectives:**

1. Participants will be able to give the prevalence and etiologic theories for fibromyalgia.
2. Participants will be able to list the diagnostic criteria, differential diagnosis and investigations for fibromyalgia.
3. Participants will be able to explain the diagnosis to patients with fibromyalgia in a positive, hopeful and respectful manner.
4. Participants will be able to provide a treatment strategy for patients diagnosed with fibromyalgia.
5. Participants will obtain resources to assist patients in the management of their fibromyalgia.

**BRIEF DESCRIPTION:** This educational program was developed in collaboration with the University of Calgary and Université de Sherbrooke to address some of the key challenges primary care physicians face in diagnosing, treating and managing patients with fibromyalgia. This program, which is based on a national needs assessment that was conducted with over 300 physicians, uses a variety of learning methods to enhance knowledge and skills with the aim of building a better understanding of fibromyalgia and creating a sense of hope for physicians that they can convey to their patients.

*This program was supported by an unrestricted educational grant from Pfizer Canada Inc.*

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2:00 PM – SESSION 106

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**7**  
**FIBROMYALGIA – THE MEDICAL TREATMENTS**

**Chair: Aline Boulanger**

**Speaker: Mary-Ann Fitzcharles MB ChB MRCP(UK) FRCP(C)**

**Mary-Ann Fitzcharles MB ChB MRCP(UK) FRCP(C), Rheumatology Division, McGill University Health Centre, Montréal, Québec**

**Learning Objectives:**

1. To have a knowledge of current evidence-based treatment recommendations.
2. To have a better understanding of the range of treatment interventions that may be used in treating the varied symptoms of fibromyalgia.
3. To be able to apply rational management tailored to individual patient needs.

**BRIEF DESCRIPTION:** Fibromyalgia (FM) is a syndrome that presents three important challenges to the treating health care professional. Firstly, the exact pathogenesis still remains an enigma. It therefore follows that successful treatment may be elusive. Secondly, no single gold standard of treatment for this condition exists, although increasing evidence indicates that treatments tailored to the individual patients' needs is likely to be most effective. And third, there is no clinical measurement of success of treatment other than subjective patient report.

Although pain is the cardinal symptom in FM, other symptoms are commonly present to variable degrees in individual patients, affect quality of life and well-being, and contribute to global patient outcome. Any successful treatment therefore requires attention to all symptoms present,

which may include apart from pain, sleep disturbance, fatigue, and mood disorder. It is increasingly appreciated that best management for patients with FM requires active participation from the patient perspective, as well as a therapeutic approach from different angles, which may include both pharmacologic and non-pharmacologic interventions. Although symptom relief is important from the patient perspective, treatment goals must be realistic and should always include improved function. Guidelines from numerous respected groups have recommended treatments numbering in the 30's for symptoms of FM. This may seem daunting to both patient and health care professional, but with time and patience it is generally possible to find some treatment intervention or combination thereof that will give some relief to symptoms. The outcome in these patients is not universally dismal, and community-based studies indicate that over 50% of patients improve considerably with time.

In this session, we will review and explore current treatment options for FM, which will range from alternative complimentary treatments, to non-pharmacologic as well as pharmacologic treatments.

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2:00 PM – SESSION 107

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**8**  
**OROFACIAL PAIN**

**Chair: Eric Lessard**

**Speaker: Gary M Heir DMD**

**Gary M Heir DMD, Clinical Professor, Clinic Director, Department of Diagnostic Science, Division of Orofacial Pain, University of Medicine and Dentistry, New Jersey Dental School, Newark, New Jersey, USA**

**Learning Objectives:**

1. The ability to obtain an accurate patient history.
2. The ability to process the information and assess that history to arrive at a reasonable differential diagnosis.
3. The ability to know what additional information is necessary in order to request adjunctive diagnostic or radiographic testing.
4. The ability to institute an appropriate treatment plan based on your differential diagnosis, or refer appropriately.

**BRIEF DESCRIPTION:** Chronic, complex orofacial pain disorders are a significant challenge to the dental and medical practitioner. Many patients present, or are referred for the evaluation of pain complaints often inappropriately thought to have dental etiologies. In fact, there are many chronic and acute pain disorders that not only mimic pain of odontogenic causes, but also are all too frequently treated inappropriately with dental remedies. It is our responsibility to evaluate and diagnosis these disorders correctly in order to affect an appropriate course of treatment.

When examining and managing orofacial pain patients, it is important to use goals to achieve an acceptable degree of success. The first goal is to establish a specific diagnosis. The diagnosis, cannot be based only on the patient's complaint of pain, but on the history, clinical examination, and radiographic and laboratory findings.

This presentation will review dental pain of non dental origin for the physician and non dentist. It will include a brief discussion of dental pain, but will focus on conditions and pathologies that may present in the orofacial region and mimic dental pathology.

Orofacial Pain Dentists frequently receive referrals from physicians who are not familiar with dental pain, or who may confuse pain of non odontogenic origin with that of true odontalgia. This is also true for the dentist naïve to the orofacial pain disorders.

This presentation will be strictly clinical and case-based to serve as an introduction to the various aspects of pain of the head face and neck of dental and non-dental origin. There will be an introduction to the concepts of orofacial pain, dental pain, musculoskeletal pain, neuropathic pain, neurovascular pain, and psychogenic pain. Those in attendance will become familiar with the concepts necessary to aid in the differential diagnosis orofacial pain.

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 2:00 PM – SESSION 108
 

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9

**PLACEBO EFFECT****Chair:** André Bélanger**Speaker:** Anh Nguyen

Anh Nguyen, Information/Project Coordinator, Strategic Research Initiatives, Heart and Stroke Foundation of Canada, Ottawa, Ontario

**Learning Objectives:**

1. Understand the definition and conceptualization of the placebo effect.
2. Characterize the neurobiological mechanisms of the placebo effect.
3. Apply the knowledge about the placebo effect to improve the therapist-patient interaction.

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 4:15 PM – INTERPROFESSIONAL PAIN EDUCATION  
 AWARD PRESENTATION
 

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10

**THE CHALLENGES OF INTERPROFESSIONAL EDUCATION****Chair:** Michael McGillion**Speaker:** Anita M Unruh PhD MSW OT(C)RegNS

Faculty of Health Professions, Dalhousie University, Halifax, Nova Scotia

**BRIEF DESCRIPTION:** In the past ten years, interprofessional education has gained ever increasing attention as a compelling and intriguing alternative or supplement to separate education of health professionals especially for health situations in which a high degree of interprofessional collaboration is beneficial. Pain assessment and management is a valuable example of the benefits of interprofessional work. From the outset, an interprofessional stance has been taken to the establishment of professional pain associations and the way in which pain education curricula have been developed by the international association of the study of pain. Pain research has repeatedly identified that interprofessional pain management is more likely to have maximum benefit for the chronic pain patient. Nevertheless, interprofessional pain education is a challenge to implement and there are only a few examples of interprofessional pain education programs. In this presentation, Dr. Unruh will examine some of the challenges of implementing interprofessional education and evaluating its outcomes by reflecting on her own experience in pain education and by reviewing the existing research in interprofessional education with discussion about implications and potential strategies for future endeavours.

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**SCIENTIFIC PROGRAM DAY ONE**  
**FRIDAY MAY 29, 2009**


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 8:15 AM – KEYNOTE SPEAKERS
 

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11

**TRANSLATING MECHANISMS OF PAIN****Chair:** Michael McGillion

11A

**FROM CENTRAL SENSITIZATION TO PAIN: WHAT IS THE EVIDENCE?**

Fernando Cervero MD PhD DSc, Director of the Alan Edwards Centre for Research on Pain, McGill University, Montréal, Québec

**Learning Objectives:**

1. Attendants will learn the relevance of sensitization of nociceptive pathways to pain sensitivity.
2. Attendants will be made aware of the current evidence regarding central sensitization to pain.

3. Attendants will learn the relationship between central sensitization to pain and chronic pain syndromes.

**BRIEF DESCRIPTION:** The concept of a “central sensitization” to pain is often quoted as being the cause of many pain states, yet there are various and different interpretations of what this concept means and of its significance to the perception of pain. The talk will address this problem by linking clinically relevant pain states with the appropriate basic science data.

11B

**PROTEINASE ACTIVATED RECEPTORS AND PAIN**

Nathalie Vergnolle MD PhD, Director of Research INSERM U563, Toulouse, France/Associate Professor, Department of Pharmacology and Therapeutics, University of Calgary, Calgary, Alberta

**BRIEF DESCRIPTION:** Proteases, through the activation of Protease-Activated Receptors (PARs) can signal to sensory neurons and interfere with the transmission of pain. Depending on the proteolytic environment of nerves and on the type of PARs that is activated, pro- or anti-nociceptive effects can be observed. Evidences have now been raised that proteases and their receptors have to be considered as potential therapeutic targets for the treatment of pain.

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 10:00 AM – PLENARY SESSION 201
 

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12

**KNOWLEDGE TRANSLATION: LESSONS LEARNED FROM THE CIHR TEAM IN CHILDREN'S PAIN****Chair:** Bonnie Stevens

**Speakers:** Bonnie Stevens RN PhD, Shannon Scott RN PhD, Janet Yamada RN MSc

Bonnie Stevens RN PhD, Signy Hildur Eaton Chair In Paediatric Nursing Research and Associate Chief Nursing Research, The Hospital for Sick Children and Professor, Lawrence S Bloomberg Faculty of Nursing and Faculty of Medicine, University of Toronto, Toronto, Ontario; Shannon Scott RN PhD, Assistant Professor, Faculty of Nursing, and Assistant Professor (Adjunct), Department of Pediatrics, Faculty of Medicine and Dentistry, University of Alberta, Edmonton, Alberta; Janet Yamada RN MSc, Research Associate, Child Health Evaluation Sciences, Research Institute, The Hospital for Sick Children and PhD Candidate, Lawrence S Bloomberg Faculty of Nursing, University of Toronto, Toronto, Ontario

**Learning Objectives:**

1. To explore the role of local and research evidence within a multidimensional knowledge translation (KT) strategy.
2. To discuss the influence of context on knowledge translation in child health settings.
3. To describe the development and use of a process evaluation checklist to evaluate the implementation of knowledge translation strategies in the NICU.

12A

**IMPLEMENTING MULTIDIMENSIONAL KNOWLEDGE TRANSLATION STRATEGIES TO ENHANCE PAIN PRACTICES IN PAEDIATRIC HOSPITALS IN CANADA****Bonnie Stevens RN PhD**

Signy Hildur Eaton Chair In Paediatric Nursing Research and Associate Chief Nursing Research, The Hospital for Sick Children and Professor, Lawrence S Bloomberg Faculty of Nursing and Faculty of Medicine, University of Toronto, Toronto, Ontario  
 M Barwick, F Campbell, C Chambers, J Cohen, G Cummings, CA Estabrooks, GA Finley, C Johnston, T Kavanagh, M Latimer, S Lee, S LeMay, P McGrath, J Rashotte, C Rosmus, D Sawatzky-Dickson, S Scott, S Sidani, J Stinson, R Stremler, A Synnes, A Taddio, E Villeneuve, F Warnock, A Willan, J Yamada  
**BACKGROUND:** Hospitalized children undergo multiple painful procedures; yet, despite an abundance of empirical and research evidence,

inadequate pain practices prevail. The Evidence Based Practice, Identification and Change (EPIC) intervention (Lee, 2002) is a multifaceted KT strategy that integrates local and research evidence for practice change. The Promoting Action on Research Implementation in Health Services (PARIHS) model (Rycroft-Malone, 2004) focuses on the interplay of evidence, context and facilitation to enhance clinical and process outcomes.

**DESIGN AND METHODS:** The Canadian Paediatric Pain Research web-based database was used to collect data on painful procedures, pain assessment and pharmacological, physical, psychological pain management interventions from 120 children in each of 32 inpatient units across Canada. Key practice changes were identified.

**RESULTS:** 85% of children had at least 1 painful procedure per day with a mean of 6.9 (range: 1 – 55) per child. A validated pain measure was used in 38% and only 31% had a pain management intervention documented that was directly linked to the procedure. Based on local evidence, key practice changes were identified related to evidence-based pain assessment and pharmacological, behavioural and psychological pain management strategies.

**CONCLUSIONS:** Hospitalized children experience a substantial number of painful procedures daily; however, only about one third have pain practices documented. Key areas of practice change have been identified. The challenge is now to integrate evidence within a multidimensional KT intervention to change process and clinical outcomes.

## 12B TAKING CONTEXT INTO CONSIDERATION WHEN IMPLEMENTING KNOWLEDGE TRANSLATION STRATEGIES

**Shannon Scott RN PhD**

Assistant Professor, Faculty of Nursing, and Assistant Professor (Adjunct), Department of Pediatrics, Faculty of Medicine and Dentistry, University of Alberta, Edmonton, Alberta  
C Estabrooks, G Cummings, S Kang, A Hutchinson

**BRIEF DESCRIPTION:** Increasingly investigators have called for focused research exploring the influence that the work environment (organizational context) has on how research is used in clinical practice. Yet up until recently, the lack of research tools to identify and quantify these aspects of the work environment important to research use has significantly hampered these efforts. In response to these gaps, the *Alberta Context Tool (ACT)* was developed to assess the influence of organizational factors on research utilization in various health care professional groups. The purpose of this presentation is to present select findings using the ACT to elicit pediatric and neonatal health professionals' perceptions of the environment where they work and their use of research in practice. Findings will be presented from the initial piloting testing of the ACT in three pediatric units and as well as results from 32 nursing units in eight Canadian Children's Hospitals.

The results of this work suggest that the more positive an organizational context the greater use of research in practice. These findings have important implications improving the adoption and uptake of research-based practices to improve pain management.

## 12C EVALUATING THE PROCESS OF IMPLEMENTING MULTIDIMENSIONAL KNOWLEDGE TRANSLATION STRATEGIES

**Janet Yamada RN MSc**

Research Associate, Child Health Evaluation Sciences, Research Institute, The Hospital for Sick Children and PhD Candidate, Lawrence S Bloomberg Faculty of Nursing, University of Toronto, Toronto, Ontario

B Stevens, J Watt-Watson, S Sidani, K Dionne, C McNair, S Oliver-Homewood, KS Lee, N de Silva

**BACKGROUND:** Evaluating the process of implementing complex, tailored knowledge translation (KT) strategies can be used to monitor intervention fidelity.

**DESIGN AND METHODS:** The Process Evaluation Checklist (PEC) was developed and tested in a tertiary care NICU. Evidence based KT

strategies including educational outreach, educational materials, reminders and audit and feedback were used to facilitate sucrose administration for acute procedural pain in hospitalized infants. KT strategies were implemented and organized by 4 health care professionals who formed an interdisciplinary Research Practice Council and pain champions in the NICU. **RESULTS:** Pilot data using the PEC were collected from July 2008 to March 2009. A variety of KT strategies were used to promote sucrose use. Educational outreach strategies included resident/ fellow orientation classes, nursing education day, and 1:1 bedside teaching sessions for nurses. Educational materials included posters for both parents and NICU staff, and stickers on admission charts and medication administration records to remind staff about the importance of ordering and administering sucrose for acute procedural pain. Audit and feedback of sucrose practice changes were communicated through electronic memos to staff, staff meetings and newsletters.

**CONCLUSIONS:** The PEC successfully yielded information about the dose and reach of the KT strategies implemented, which contributes to implementation fidelity. Further application of the PEC to determine other key aspects of fidelity including the usefulness of KT strategies will contribute to the process evaluation of tailored complex behavioural interventions.

**ACKNOWLEDGEMENTS:** The authors for all 3 presentations acknowledge the CIHR Team in Children's Pain for contributions to this study. Funding was provided by the Canadian Institutes of Health Research (CTP-79854 and MOP-86605). J Yamada is supported by a CIHR Fellowship, Pain in Child Health (PICH) and the Canadian Nurses Foundation.

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10:00 AM – SESSION 202

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## 13 DIET & PAIN II

**Chair: Dr Yoram Shir**

**Speakers: Yoram Shir MD, John Pereira MD**

Yoram Shir MD, Director, McGill Pain Centre, McGill University Health Centre, Montreal Quebec; John Pereira MD, Chronic Pain Centre, Calgary Health Region, Calgary, Alberta

**WORKSHOP OBJECTIVE:**

To show the impact of diet on chronic pain as a follow-up to the highly successful Diet & Pain presentation at the CPS Annual Meeting in 2008.

**Learning Objectives:**

1. To show how the consumption of soy protein may both prevent and treat some types of chronic pain.
2. To show how Vitamin C supplementation may prevent the majority of Chronic Regional Pain Syndrome (CRPS) cases.
3. To show how widespread vitamin D deficiency may be contributing to chronic pain in Canada.

## 13A DIETARY MODIFICATION: TREATING AND EVEN PREVENTING CHRONIC PAIN

**Yoram Shir MD**

Director, McGill Pain Centre, McGill University Health Centre, Montreal, Quebec

**BRIEF DESCRIPTION:** This presentation is a follow-up to the highly successful Diet & Pain presentation given at the 2008 CPS Meeting. Many in the audience expressed a wish to learn more on the topic. Diet and Pain II contains all new material, assumes no prior knowledge and will appeal equally to clinicians, researchers and patients.

Dr. Shir will present how dietary modification may both treat and even prevent the very occurrence of chronic pain. A soy-enriched diet can potentially reduce the risk of developing chronic post-mastectomy pain and diminish the symptoms of long-standing trigeminal neuralgia. Vitamin C supplementation may be able to prevent a majority of Chronic Regional Pain Syndrome (CRPS) cases if given immediately after trauma. Dr. Shir will also preview upcoming trials focusing on diet on pain.

13B

**THE HIGH PREVALENCE OF VITAMIN D DEFICIENCY AND CHRONIC PAIN**

John Pereira MD

Chronic Pain Centre, Calgary Health Region, Calgary, Alberta

**BRIEF DESCRIPTION:** Dr. Pereira will present primarily on Vitamin D and pain. Hypovitaminosis D affects a majority of Canadians and is the most common deficiency in the industrialized world. It is associated with a number of chronic pain conditions and has an interesting clinical presentation that will be discussed. Low vitamin D levels are easily treated and can substantially improve certain chronic pain conditions. Dr. Pereira will also present on the powerful anti-inflammatory properties of curcumin, the active compound in the Indian spice known as turmeric. History, pharmacology and clinical studies will be discussed.

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10:00 AM – SESSION 203

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14

**IMPLEMENTING THE ALBERTA PRIMARY CARE LOW BACK PAIN CLINICAL PRACTICE GUIDELINE: A MULTIDISCIPLINARY CASE-BASED WORKSHOP APPROACH**

Chair: Paul Taenzer

Speakers: Paul Taenzer PhD, Christa Harstall BSc MLS MHSA, Ted Findley BSc DO CCFP FCFP

Paul Taenzer PhD, Calgary Health Region Regional Pain Program, Calgary; Christa Harstall BSc MLS MHSA, Institute of Health Economics, Edmonton; Ted Findley BSc DO CCFP FCFP, Calgary Health Region Chronic Pain Centre, Calgary, Alberta

**WORKSHOP OBJECTIVE:**

The aim of this workshop is to provide participants with an overview of the development of the Alberta Primary Care Low Back Pain Clinical Practice Guideline and provide them with an opportunity to participate in an abbreviated simulated experiential workshop designed to inform primary care providers about the guideline recommendations and provide them with tools to overcome barriers to implementing the guideline in clinical practice.

**Learning Objectives:**

1. Participants will become aware of the multi-agency multidisciplinary collaborative process used to develop the guideline.
2. Participants will learn about the scientific methodology and telehealth based strategy used to generate recommendations suitable for the current Alberta context by adapting the best available published evidence-based guidelines.
3. Participants will learn the knowledge translation (KT) strategy developed for implementing the guideline in primary care practice through participating in an abbreviated simulated workshop.

14A

**OH NO, NOT ANOTHER GUIDELINE: HISTORY AND RATIONALE FOR THE ALBERTA HTA CHRONIC PAIN AMBASSADOR PROGRAM'S INVOLVEMENT WITH GUIDELINE DEVELOPMENT**

Paul Taenzer PhD

Calgary Health Region Regional Pain Program, Calgary, Alberta

**BRIEF DESCRIPTION:** Low back pain is among the most prevalent chronic conditions in Canada. Unfortunately most healthcare providers have little formal pre- or post-licensure education related to evidence inform practice for the management of low back pain. In 2004 the Alberta ambassador project began exploring the use of multidisciplinary case-based interactive workshops for conveying the best research evidence to practicing primary care clinicians. The first project involved providing actionable information about discrete primary care interventions to clinicians throughout the province. Feedback from this project indicated that the workshop format and brief paper-based clinical summaries were well accepted and appeared to promote practice change. The current project

engages a pan-Albertan multi-agency partnership and a multidisciplinary development team to develop clinical practice guidelines for primary care management of low back pain and headache. The first brief presentation by Paul Taenzer will review the project history and the development of the project structure and multi-agency collaboration. The second brief presentation by Christa Harstall will review the scientific methods used to develop the evidence informed recommendations. The third and final brief presentation by Ted Findley will review the interactive telehealth-based multidisciplinary process developed by the project team to engage clinical experts and primary care providers in the development process. The final workshop activity involving all three authors will be a simulation engaging the workshop participants in the interactive case-based knowledge translation strategy used to implement the guideline.

14B

**THE TRIALS AND TRIBULATIONS OF ADAPTING EXISTING GUIDELINES: THE ALBERTA AMBASSADOR PROGRAM STRATEGY**

Christa Harstall BSc MLS MHSA

Institute of Health Economics, Edmonton, Alberta

**BRIEF DESCRIPTION:** Guideline developers face important trade-offs between the level of scientific rigor and the level of resources required. The most scientifically rigorous approach to guideline development involves comprehensive searches, critical appraisals of the primary literature and the synthesis of the findings based on the quality and strength of the research evidence presented. This approach is time consuming and requires a significant investment in scientifically trained personnel. The least rigorous approach involves appraising existing guidelines and endorsing the most relevant and highest quality single guideline. The Alberta Ambassador Program approach involved a compromise where the best available existing guidelines were examined by an interdisciplinary team, updated and adapted to the Alberta context. This presentation will detail the scientific methodology developed and used throughout this process.

14C

**A MULTIDISCIPLINARY APPROACH TO ADAPTING AND UPDATING EXISTING GUIDELINES: A COLLABORATIVE APPROACH AMONGST CLINICIANS, RESEARCHERS AND DECISION-MAKERS**

Ted Findley BSc DO CCFP FCFP

Calgary Health Region Chronic Pain Centre, Calgary, Alberta

**BRIEF DESCRIPTION:** This presentation will describe the collaborative telehealth-based multidisciplinary process used to review the evidence-base for individual recommendations from existing guidelines. Issues confronted by the Guideline Development Group included using the evidence base to resolve differences in clinical opinion based on discipline specific perspectives, resolving substantive incongruities among recommendations on the same topic from different source guidelines through subgroup deliberations, and adapting recommendations to the Alberta practice environment. The geography of Alberta prohibited extensive use of face-to-face meetings. The processes used by the Guideline Development Group, telehealth and teleconferencing by subgroup committees will be described. Finally the approach used to encourage the endorsement and dissemination of one guideline provincially will be presented.

14D

**SIMULATED AMBASSADOR WORKSHOP: OKAY I'M HERE; NOW TELL ME SOMETHING I DON'T ALREADY KNOW**

Paul Taenzer PhD<sup>1</sup>, Christa Harstall BSc MLS MHSA<sup>2</sup>, Ted Findley BSc DO CCFP FCFP<sup>3</sup>

<sup>1</sup>Calgary Health Region Regional Pain Program, Calgary; <sup>2</sup>Institute of Health Economics, Edmonton; <sup>3</sup>Calgary Health Region Chronic Pain Centre, Calgary, Alberta

**BRIEF DESCRIPTION:** This interactive portion of the workshop will simulate portions of the workshop format being used in Alberta to disseminate

and implement the low back pain guideline in primary care settings. The workshop begins with a very brief overview of the guideline development process. The majority of the workshop involves engaging participants in using the guideline to manage the care of a representative clinical case. At decision points in the trajectory of care the research evidence base for various treatment options are explored, specific clinical skills required for physical and psychosocial assessment and patient communication are demonstrated and discussed. The Ambassador Workshop strategy as applied to the low back pain guideline will be part of an ongoing evaluation funded in part through the Community Alliances for Health Research and Knowledge Exchange in Pain that has been recently funded by CIHR.

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### 11:30 AM – HOT TOPICS IN PAIN RESEARCH

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#### 15

##### STUDENT PRESENTATIONS

Chair: Michael McGillion

Speakers: Geneviève Beaumont, Candidate to PsyD;  
Rosée Bruneau-Bhérec, Candidate for PhD in Psychology;  
Vincent Maida MD BSc CCFP ABHPM, Christine B Novak BScPT  
MSc

#### 15A

##### IMPROVING THE MENTAL REPRESENTATION OF ACTION TO DECREASE PHANTOM LIMB PAIN

Geneviève Beaumont, Candidate au DPsy/Candidate to PsyD, 1) Université Laval/Laval University, 2) Centre interdisciplinaire de recherche en réadaptation et intégration sociale/Center for interdisciplinary in rehabilitation and social integration; Jean-Nicolas Carrier BA, 1) Université Laval/Laval University, 2) Centre interdisciplinaire de recherche en réadaptation et intégration sociale/Center for interdisciplinary in rehabilitation and social integration; Martine Fortin BA, 1) Université Laval/Laval University, 2) Centre interdisciplinaire de recherche en réadaptation et intégration sociale/Center for interdisciplinary in rehabilitation and social integration; Alexandra Gosselin BA, 1) Université Laval/Laval University, 2) Centre interdisciplinaire de recherche en réadaptation et intégration sociale/Center for interdisciplinary in rehabilitation and social integration; Pierre-Emmanuel Michon PhD, 1) Université Laval/Laval University, 2) Centre interdisciplinaire de recherche en réadaptation et intégration sociale/Center for interdisciplinary in rehabilitation and social integration; Catherine Mercier PhD, 1) Université Laval/Laval University, 2) Centre interdisciplinaire de recherche en réadaptation et intégration sociale/Center for interdisciplinary in rehabilitation and social integration; Francine Malouin PhD, 1) Centre interdisciplinaire de recherche en réadaptation et intégration sociale/Center for interdisciplinary in rehabilitation and social integration; Philip Jackson PhD, 1) Université Laval/Laval University, 2) Centre interdisciplinaire de recherche en réadaptation et intégration sociale/Center for interdisciplinary in rehabilitation and social integration

**AIM:** To verify if a new intervention, combining observation and imagination of actions of the missing limb, can reduce phantom limb pain (PLP).

**METHODS:** A single-case multiple baseline design was conducted across six patients with chronic PLP. All patients were firstly assigned to a baseline (3, 4, or 5 weeks) and, after the baseline, they followed a four week intervention, which combined observation and mental imagery of the missing limb in action, twice a week with a therapist and three times a week at home. The home-only intervention was then continued three times a week for four weeks. Participants rated their levels of pain daily in a logbook through out the study. A follow-up assessment was done after six months.

**RESULTS:** Time series analyses showed that pain was reduced gradually for 3 out of the 6 patients (3.7% to 11.7% weekly) during the intervention, for a total mean decrease between 9.3 % and 22.9% at home-only

intervention phases. For other patients, one had a pain increase while two did not show any significant change.

**CONCLUSIONS:** Some people with chronic PLP, who had already tried a number of interventions to control their pain, but without significant success, seemed to benefit from a new imagery-based intervention that aimed at improving the motor representation of the missing limb. However, more studies are necessary to determine the factor through which this intervention operates and identify the individuals that are most responsive.

#### 15B

##### THE PERCEPTION AND EVALUATION OF OTHERS' PAIN IN CHILDREN

Rosée Bruneau-Bhérec, Candidate for PhD in Psychology, School of Psychology, Laval University, Center Interdisciplinary for Research in Rehabilitation and Social Integration (CIRRIS); Marie-Suzanne Mathieu, Candidate for BA in Psychology, School of Psychology, Laval University, Center Interdisciplinary for Research in Rehabilitation and Social Integration (CIRRIS); Morasse Karine PhD, School of Psychology, Laval University, Hotel-Dieu de Lévis research center; Philip Jackson PhD, School of Psychology, Laval University, Center Interdisciplinary for Research in Rehabilitation and Social Integration (CIRRIS)

**AIM:** In an evolutionary perspective, the function of pain expression and the ability to perceive it is important. The sufferer's behaviour and facial expression is an important cue for self-protection and to provide help (Williams, 2002). Thus, sensitivity to the pain of others should be partly innate and universal. There is evidence that empathic responding can occur at a very young age, but little is known about the development of this capacity. A number of neuroimaging studies have shown that the perception of pain activate the neural circuits involved in the sensorial and affective dimensions of the pain experience (Jackson et al., 2006), and this phenomenon also exist in children (Decety, Michalska, & Akitsuki, 2008). Therefore, the abilities to experience, to perceive and to evaluate pain are necessary to produce empathic reaction for pain. The ability to perceive facial expression of pain in others is already developed by the age of 5 or 6, and this capacity seems to refine through early adulthood (Deyo, Prkachin, & Mercer, 2004). On the contrary, the capacity to use an ordinal scale to evaluate the pain intensity at this early age remains unclear. This study aimed to determine the capacity of school aged children to perceive and to evaluate the pain intensity of hands and faces stimuli. Afterward, this task will be used to evaluate empathy with an electroencephalogram.

**METHODS:** Participants: Seventy-three healthy children between 6 and 12 years old from first, third and sixth grades, were recruited in nearby schools. They were separated in three groups (n = 20-23 for each) according to their grade and age (mean age are 6.7, 8.9 and 11.6) were included in this study. Material: The material comprised 112 stimuli display on computer screen pseudo-randomly and a visual scale of pain intensity (0-10). The hands stimuli show hands in a daily painful situation (e.g. hand stuck in a drawer) or neutral situation. The faces stimuli showed actors expressing no pain or one of the 3 levels of pain (low, medium, high). Each trial consisted of a set of three static pictures presented rapidly, thus providing some illusion of movement and represent hands or faces. Procedure: Children were asked to observe the stimuli and to evaluate the pain intensity on the 10 points scale, between no pain (0) and the worse pain you can imagine (10).

**RESULTS:** Hands: The mean scores for the two conditions (pain vs no pain) are significantly different (p=0.000), but there is no groups effect (p=0.185), nor any interaction (p = 0.383). Faces: The mean scores for the four faces conditions were all significantly different from each others (p=0.000). The difference between groups failed to reach statistical significance (p=0.179), but there is a clear tendency in which the older seem to score higher on the pain intensity scale than the younger.

**CONCLUSIONS:** The three groups were able to perceive the presence or the absence of pain in the displayed situations and this capacity do not seems influenced by age. It also appears that the children of different age groups are not equally sensitive to diverse pain levels in facial expressions. In fact, despite the tendency failed to reach significance level these results

## Abstracts

suggest that children get more sensitive to the faces' pain stimuli from 6 to 12 years old. Furthermore, most of even the youngest children were able to use the intensity scale to make judgments of pain in others. Therefore, this task can be used in future research on neurophysiological correlates of empathy for pain in children as the stimuli effectively evoke pain and children can use the scale.

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## 15C

### ADJUNCTIVE NABILONE IN CANCER PAIN AND SYMPTOM MANAGEMENT

**Vincent Maida MD BSc CCFP ABHMP, William Osler Health Centre, Division of Palliative Medicine; Marguerite Ennis PhD, University of Toronto, Toronto, Ontario**

**AIM:** To demonstrate the efficacy of the synthetic cannabinoid, nabilone, in the pain and poly-symptom management of cancer patients.

**METHODS:** A prospective observational study was carried out to assess the effectiveness of adjuvant nabilone therapy in the pain and symptom management of advanced cancer patients. The primary outcomes of the study were the difference between treated and untreated patients at 30 days follow-up, in Edmonton Symptom Assessment System (ESAS) pain scores and in total morphine sulfate equivalent (MSE) use, after adjusting for baseline differences. To adjust for baseline differences between the nabilone and non-nabilone group, the propensity score method was employed. Secondary outcomes included other ESAS parameters and frequency of use of other drug therapies.

**RESULTS:** Data from 112 patients (47 nabilone, 65 non-nabilone treated) met criteria for analyses. The propensity-adjusted pain scores and total MSE use in nabilone treated patients were significantly reduced compared with patients who did not receive nabilone (both  $P < .0001$ ). Other ESAS parameters that improved significantly in patients receiving nabilone were nausea ( $P < .0001$ ), anxiety ( $P = 0.0284$ ) and overall distress (total ESAS score) ( $P = 0.0208$ ). Appetite was borderline improved ( $P = 0.0516$ ). Nabilone therapy also resulted in a lower initiation rate or a higher tendency to discontinue nonsteroidal anti-inflammatory agents, tricyclic antidepressants, gabapentin, dexamethasone, metoclopramide, and ondansetron.

**CONCLUSIONS:** Nabilone is an effective adjuvant in the management of cancer related pain, nausea, anxiety and overall distress. The use of nabilone is also associated with reduced utilization of other drugs.

## 15D

### PATIENT REPORTED OUTCOME FOLLOWING A TRAUMATIC PERIPHERAL NERVE INJURY

**Christine B Novak BScPT MSc, University of Toronto, Toronto, Ontario; Dimitri J Anastakis MD FRCS, Division of Plastic Surgery, University of Toronto, Toronto Western Hospital, Toronto, Ontario; Dorcas E Beaton PhD, Department of Health Policy, Management and Evaluation, University of Toronto, Toronto, Ontario, Institute for Work and Health, Toronto, Ontario and Mobility Program Clinical Research Unit, St Michaels Hospital, Toronto, Ontario; Joel Katz PhD, Department of Psychology, York University, Toronto, Ontario and Department of Anesthesia and Pain Management, Toronto General Hospital, Toronto, Ontario and Department of Anesthesia, University of Toronto, Toronto, Ontario**

**AIM:** Outcome following traumatic peripheral nerve injury (PNI) is variable and depends on multiple factors related to the injury and to the patient. The purpose of this study was to evaluate patient reported

outcome and the presence of pain and disability following an upper extremity PNI.

**METHODS:** Following Research Ethics Board approval, the medical charts were reviewed of patients who met the following inclusion criteria: adult patients who at the initial consult were at least 6 months from an upper extremity traumatic PNI and had completed a DASH questionnaire and the SF-36. For the SF-36, comparisons were made between the Canadian norms and the nerve injured patients. Patients were classified as having high pain if they exceeded 2 standard deviations from the normative data. Comparisons of the DASH scores were performed using t-tests or a one-way ANOVA between the following independent variables; pain, workers' compensation or litigation involvement, gender, time since injury, nerve injured. Multiple linear regression was used to evaluate the variables (gender, workers' compensation or litigation involvement, dominant hand injured, time since injury, age, nerve injured, bodily pain) that predicted outcome as measured by the DASH.

**RESULTS:** There were 84 patients (19 women, 65 men) with a mean age 38 years (sd 14 yrs). The mean time following injury was 4 years and the most frequent injury was to the brachial plexus ( $n = 27$ ). For all 8 domains of the SF-36 and the physical and mental component scale, the mean values of the nerve injured patients indicated significantly more impairment compared to the normative values ( $p < 0.001$ ). The mean DASH score was 52, which indicated an elevated level of disability and patients with more bodily pain ( $p < 0.001$ ) and brachial plexus injuries ( $p = 0.023$ ) had significantly more disability. Using manual backward elimination (0.1 level of significance for removal), the final regression model contained the predictor variables bodily pain ( $\beta = -.481$ ,  $p < 0.001$ ), age ( $\beta = .424$ ,  $p = 0.002$ ) and nerve injured ( $\beta = -4.683$ ,  $p = 0.024$ ) and 45% of the variance was explained with this model.

**CONCLUSIONS:** In patients with traumatic peripheral nerve injuries, disability as measured by the DASH is associated with more bodily pain, older age and brachial plexus involvement. Assessment of chronic pain following PNI and further investigation into the associated factors may provide an opportunity for efficacious treatment and better health related quality of life.

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1:30 PM – TRAINEE SESSION 204

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## 16

### MAXIMIZING CAREER SUCCESS AFTER GRADUATE STUDIES

**Chair:** Melanie Noel

**Speakers:** Simon Beggs MSc PhD, Anna C Wilson PhD

**Simon Beggs MSc PhD, Research Associate, Hospital for Sick Children, Assistant Professor, Faculty of Dentistry, University of Toronto, Toronto, Ontario; Anna C Wilson PhD, Assistant Professor, Pediatric Psychologist, Anesthesiology and Peri-Operative Medicine, Division of Clinical Pain and Regional Anesthesia Research, Oregon Health & Science University, Portland, Oregon, USA**

**Learning Objectives:**

1. To become exposed to possible career paths following graduate school.
2. To gain information about career development from both clinical and basic science perspectives.
3. To learn about how to seize opportunities both during and after graduate school in order to maximize career success.
4. To understand the range of options available in postdoctoral clinical research positions.
5. To be able to identify key features in a positive mentoring relationship.
6. Understand decision making approaches for making choices during this transition.

## 16A

**IF YOU'RE NOT PART OF THE SOLUTION, YOU'RE PART OF THE PRECIPITATE: STAYING AFLOAT IN BASIC SCIENCE****Simon Beggs MSc PhD**

Research Associate, Hospital for Sick Children, Assistant Professor, Faculty of Dentistry, University of Toronto, Toronto, Ontario

## 16B

**FROM STUDENT TO TRAINEE AND BEYOND: TIPS FOR EARLY CLINICAL RESEARCH CAREER DEVELOPMENT****Anna C Wilson PhD**

Assistant Professor, Pediatric Psychologist, Anesthesiology and Peri-Operative Medicine, Division of Clinical Pain and Regional Anesthesia Research, Oregon Health &amp; Science University, Portland, Oregon, USA

**BRIEF DESCRIPTION:** The transition from graduate school to faculty or other independent research positions can be difficult to navigate. However, this is a key period for developing a clinical research career and increasing independence. There are a number of advanced training options available during the postdoctoral years, including clinical and research positions, and the choices that a trainee makes during this period are likely to impact his or her long-term career trajectory. The advantages and disadvantages of a variety of options available to recent graduates who are interested in pursuing an independent research career related to pain will be reviewed. Mentorship is key during this transition, and core characteristics of the ideal mentorship situation will be identified. Decision-making tools for choosing appropriate mentors and the best fitting postdoctoral position will also be reviewed.

1:30 PM – SLIDE SESSION 205

## 17

**SLIDE SESSION****Chair:** Judy Watt-Watson**Speakers:** Niklas Schuelert PhD Post Doctoral Fellow, Claire-Dominique Walker PhD, Mai Thanh Tu PhD, Bryan A Liang MD PhD JD, Jose A Martinez MSc, EG Subocz

## 17A

**ENDOCANNABINOID ENHANCEMENT BY LOCAL INJECTION OF THE FATTY ACID AMIDE HYDROLASE INHIBITOR URB597 REDUCES NOCICEPTION IN A RAT MODEL OF OSTEOARTHRITIS****Niklas Schuelert**, Post Doctoral Fellow, Department of Physiology and Biophysics, University of Calgary; **Jason J McDougall**, Associate Professor, Department of Physiology and Biophysics, University of Calgary, Calgary, Alberta

**AIM:** The present study examined whether enhancement of the endogenous cannabinoid level by local administration of the fatty acid amide hydrolase inhibitor URB597 into the knee joint could modulate joint nociception in a rat model of osteoarthritis (OA).

**METHODS:** OA was induced in male Wistar rats by a intra-articular injection of 3 mg sodium monoiodo-acetate with a recovery period of 14 days. Prior to recordings, animals were deeply anaesthetised with ethyl carbamate (urethane; 2 mg kg<sup>-1</sup> i.p.). Joint nociception was objectively measured in these animals by recording electrophysiologically from knee joint primary afferents in response to normal rotation and noxious hyper-rotation of the joint both before and following close intra-arterial injection of URB597 (30ug;100ul bolus). The number of action potentials per movement were determined every 2 min until 15 min after URB597 application.

**RESULTS:** A single injection of URB597 caused afferent firing rate to be significantly reduced by up to 50% during normal rotation and during hyper-rotation of the rat knee joint. This desensitizing effect was found to be maximal 15 min after URB597 injection. In addition URB597 reduced spontaneous activity in a subgroup of recorded joint afferents. Systemic

co-administration of the cannabinoid CBI/CB2 receptor antagonists AM251 and SR144 (1mg/kg, i.p.) abolished the antinociceptive effect of URB597, confirming that the analgesic effect is mediated via cannabinoid receptors

**CONCLUSIONS:** These findings indicate that intra-arterial injection of URB597 into OA rat knee joints alleviated peripheral sensitization of knee joint afferents and reduces pain transmission during movement of the joint. The reduction of spontaneous activity reflects the decrease of chronic rest pain. The results provide evidence that endogenous cannabinoids are released into the OA joint, indicating an important role of the endocannabinoid system in peripheral pain modulation. Targeting cannabinoid metabolizing enzymes in the peripheral nervous system could offer novel therapeutic approaches for an efficient treatment of OA pain, minimizing centrally mediated side effects.

## 17B

**NATURALLY OCCURRING VARIATIONS IN MATERNAL CARE MODULATE THE EFFECTS OF REPEATED NEONATAL PAIN ON BEHAVIORAL SENSITIVITY TO THERMAL PAIN IN THE ADULT OFFSPRING****Claire-Dominique Walker PhD**, McGill University, Douglas Mental Health University Institute; **Zhifang Xu**, Research Assistant, Douglas Mental Health University Institute; **Joseph Rochford PhD**, McGill University, Douglas Mental Health University Institute; **Celeste Johnston PhD**, McGill University, Montreal, Quebec

**AIM:** Preterm neonates subjected to several painful procedures in the NICU experience long-term behavioral and physiological consequences and in particular display changes in pain thresholds and decreased stress responsiveness later in life. Recent studies have determined that maternal comfort measures can reduce the acute and long-term effects of pain in preterm infants. Using an animal model of repeated mild neonatal pain (needle prick), we demonstrated earlier that maternal behavior was significantly modified by the state of the pup, leading to increased licking and grooming (LG) of the pups subjected to pain. In this study, we tested 1) whether repeated inflammatory pain during the first 2 weeks of postnatal life had a significant effect on pain behavior and stress responses in the adult offspring and 2) whether naturally occurring variations in maternal care (amount of licking & grooming, LG) could modulate these responses.

**METHODS:** Repeated scoring of maternal behavior during the first 6 days of life allowed to divide mothers into either high (H), middle (M) or low (L) LG mothers. Offspring from the 3 maternal groups were either unhandled (UH) or injected twice daily with formalin (0.5-1%, F) or saline (SAL) in the hind paw between PND3-14. As adults, male rats were tested for their pain sensitivity in the Hargreaves and the formalin (2.5%) tests as well as hormonal responses to restraint stress.

**RESULTS:** We confirmed that the phenotype of the mother (LG scores) in the 45 min following daily injections of her pups remained the same as that observed under basal resting conditions. Maternal phenotype had a significant effect on the latency to withdraw the paw in the Hargreaves test ( $p < 0.002$ ), as rats from the L mothers showed reduced latencies compared to those from H or M mothers, irrespective of neonatal treatment. Thus, provision of greater sensory stimulation to the pups by the mother reduces thermal pain sensitivity. In contrast, neonatal repeated exposure to formalin significantly ( $p < 0.001$ ) increased pain scores to an acute injection of formalin in adulthood compared to SAL or UH rats, an effect that was observed for rats originating from either H, L or M maternal groups. Integrated pain score for the second phase of the formalin response and the minimum reached between the 2 phases of the response were significantly higher in the F ( $p < 0.001$ ) compared to SAL or UH group, suggesting a long-term effect of early inflammatory pain on adult pain responsiveness. Corticosterone responses of adult offspring to restraint stress were not influenced by neonatal treatment or maternal phenotype.

**CONCLUSIONS:** Together, these results suggest that 1) natural variations in maternal care can affect some, but not all modalities of pain responses in the adult offspring and 2) early inflammatory pain during a critical period of pain pathways development could lead to enduring consequences on pain behavior in adulthood.

Supported by CIHR.

17C

### DOES REACTIVITY TO PAIN OF IMMUNIZATION INJECTIONS DIFFER IN PRETERM COMPARED TO FULL-TERM INFANTS AT 4 MONTHS CORRECTED AGE?

Ruth E Grunau PhD, Pediatrics, University of British Columbia, Vancouver, British Columbia; Mai Thanh Tu PhD, Centre for Community Child Health Research, Child & Family Research Institute, Vancouver, British Columbia; Joanne Weinberg PhD, Cellular & Physiological Sciences, University of British Columbia, Vancouver, British Columbia; Timothy F Oberlander MD (FRCPC), Pediatrics, University of British Columbia, Vancouver, British Columbia; Michael F Whitfield MD (FRCPC), Pediatrics, University of British Columbia, Vancouver, British Columbia

**AIM:** Procedural pain during neonatal intensive care triggers a cascade of physiological, behavioral and hormonal disruptions which may impact nociceptive systems and reset stress reactivity in the long term. Pain sensitivity tested later in childhood is altered in children born preterm (Hermann et al., 2006). However, the developmental trajectory from infancy is unclear. Oberlander et al. (2000) found no differences between preterm and full term infants to a minor finger lance at 4 months corrected age (CA), but there were differences at 8 months (Grunau et al. 2001). To our knowledge, pain reactivity to a more invasive procedure has not been compared in preterm and full term infants, and no studies have concurrently examined cortisol (stress hormone) reactivity in preterm compared to full-term infants, with pain behavior and cardiac responses. The aim was to examine cortisol, behavioral and cardiac reactivity to pain of multiple immunization injections in preterm compared to full-term infants at 4 months CCA.

**METHODS:** Participants (N=90) were 62 preterm (39 boys, 23 girls; born  $29.4 \pm 2.6$  weeks gestation) and 28 full-term (17 boys, 11 girls; born  $40.0 \pm 1.2$  weeks gestation) infants receiving immunization (3 vaccine injections) at  $4.3 \pm 1.0$  months CCA. Videotaping of behavior and on-line recording of heart rate were carried out continuously. Saliva samples to assay cortisol were collected prior to (Basal), 20 min (Reactivity) and 30 min (Recovery) following the first injection. Infants were tested in the morning; any infant fed or napping within 25 min had been excluded.

**RESULTS:** Overall, mean cortisol levels, facial activity (Neonatal Facial Coding System; NFCS) and heart rate increased significantly from Baseline to Injections and decreased during Recovery ( $p=.0001$ ) in both preterm and full term infants. A significant Group by Sex interaction ( $p=.023$ ) indicated preterm boys had lower Basal ( $p=.025$ ), Reactivity ( $p=.01$ ) and Recovery ( $p=.02$ ) cortisol levels compared to full term boys. In contrast, preterm girls showed higher basal cortisol than full term girls ( $p=.02$ ). However, facial behaviour and heart rate did not differ by group or sex.

**CONCLUSIONS:** Stress regulation indexed by cortisol prior to and following 3 immunization injections was altered in preterm infants, particularly boys. However, systems more closely related to pain (behavior and heart rate change) did not differ between the groups at 4 months CCA, consistent with a previous study at this age. Longitudinal studies to understand the development of differences in pain responses between preterm and full-term infants over time are needed.

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17D

### PAIN, THERAPEUTIC FAILURE, AND RISKS OF SUBSTANDARD DRUGS: A POLICY ANALYSIS

Bryan A Liang MD PhD JD, Institute of Health Law Studies, California Western School of Law, San Diego Center for Patient Safety, University of California San Diego School of Medicine, California, USA

**AIM:** Therapeutic failure when treating patients with pain is common. An inoptimal or lack of response is often attributed to human variation. Substandard drugs accessed directly by patients are usually not suspected. However, globalization of the illicit drug supply may impact the quality of drugs or their availability with that create clinical ramifications. This study attempted to assess the potential for therapeutic failure and risks of substandard drugs in pain treatment by reviewing drug supply system vulnerabilities and empirical reports.

**METHODS:** Analysis of legal and policy infrastructures that govern international drug supply safety and pharmacoepidemiologic review of confidential industry databases on substandard drug availability, including pain management medications.

**RESULTS:** Parallel trade, which allows drugs to easily move between countries, Internet-sourcing, and a robust globalized counterfeit drug industry creates significant risks for substandard drugs, particularly drugs of abuse such as pain medications. Government policies that promote parallel trade (e.g., EU, Asia) or tacit approval and limited regulation (e.g., USA) result in little effective oversight. Policy accountability for Internet-sourced drugs – a primary source of substandard/counterfeit medications – is nonexistent due to jurisdictional issues and limited international cooperation, and allows access without a prescription. Pharmacoepidemiological analysis of industry databases verified these vulnerabilities and indicates fake/substandard drugs are rampant and are not limited to lifestyle medications, but encompass pain management medicines that include analgesics, Schedule II drugs and other drugs of abuse. Patients may thus be accessing drugs that are either fake and hence clinically show little pain control, or some illicit form of the drug's active ingredient that creates tolerance and a similar appearance of inoptimal clinical effectiveness.

**CONCLUSIONS:** Pain medicine providers must be vigilant with respect to loose regulation and control of globalized pain medications that are now directly accessible by patients. Therapeutic failure may be a result of either a substandard drug or unfettered access and use, which may be indistinguishable. These possibilities should be added to the differential diagnosis of human variation when therapeutic failure occurs.

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17E

### DIFFERENTIAL EFFECTS OF PREGABALIN DELIVERY SITES IN NEUROPATHIC PAIN STATES OF DIABETIC PERIPHERAL NEUROPATHY AND CHRONIC CONSTRICTION INJURY

Jose A Martinez MSc, University of Calgary; Manami Kasamatsu BSc, University of Calgary; Leah R Hanson PhD, University of Minnesota; William H Frey II PhD, University of Minnesota; Cory Toth MD, University of Calgary

**AIM:** Pregabalin therapy benefits neuropathic pain (NeP) in both human and animal conditions, but its main site of pharmacological action has not been strictly determined. We delivered pregabalin using three different methodologies targeting three different regions of the nervous system in models of peripheral neuropathic pain to determine its optimal site of action.

**METHODS:** Pregabalin, an alpha2delta subunit calcium channel ligand, was delivered using different manners in rat models of experimental

diabetic peripheral neuropathy (DPN) and chronic constriction injury (CCI). Intranasal, intrathecal, and near-nerve chamber delivery of varying concentrations of pregabalin or saline were provided in both NeP conditions over a 14 day period. Tactile allodynia and thermal hyperalgesia were evaluated at multiple time points. Harvesting of nervous system tissues was performed and analyzed for molecular and immunohistochemical changes after completion of therapeutic trials. Radiolabelled pregabalin was delivered to determine its localization after intranasal and intrathecal delivery. **RESULTS:** Pregabalin was concentrated in the cerebrum after intranasal delivery, and within the spinal cord after intrathecal delivery. Both intrathecal and intranasal pregabalin administration at high concentrations relieved thermal hyperalgesia, but near-nerve pregabalin delivery failed to show benefit. Molecular analysis for the calcium channel  $\alpha_2\delta$  subunit and related pain-mediated pathways were performed. **CONCLUSIONS:** Pregabalin's benefit in models of NeP is modulated most in the central nervous system, and not at the level of the affected peripheral nerve. Ligation at the cerebral and spinal cord with the  $\alpha_2\delta$  subunit of the calcium channel is responsible for its relief of NeP in animal models of DPN and CCI.

### 17F

#### A PILOT STUDY ASSESSING PAIN AND HEALTH-RELATED QUALITY OF LIFE IN WOMEN AFTER CESAREAN SECTION

**EG Subocz, EG Van Den Kerkhof, WM Hopman, TE Towheed, DH Goldstein, RA Wilson, MB Harrison, M Lam, P McGrath, S Johnston, J Medd, I Gilron**

Kingston General Hospital and School of Nursing of Queen's University, Kingston, Ontario

**BACKGROUND:** Due to complications during childbirth, a Cesarean section (c-section) may be necessary to prevent both maternal and fetal morbidity. Chronic post-surgical pain (CPSP) has been recognized in other abdominal surgery populations with potential risk factors identified; however, there is a paucity of research addressing c-section.

**OBJECTIVE:** Thus, this study assessed the feasibility of conducting a prospective, cohort study to identify predictors of pain and decreased health-related quality of life (HRQOL) in women undergoing c-section.

**METHOD:** Using the theory of unpleasant symptoms as a framework, 40 participants were recruited from Kingston General Hospital two hours prior to their scheduled c-section. Preoperative measures included pain (Brief Pain Inventory [BPI]- Long Form), HRQOL (Short Form - 36 Health Survey [SF-36]), depressive mood (Centre for Epidemiological Studies - Depression Scale), anxiety (State Trait Anxiety Inventory), somatization (Seven Symptom Screen Test), and demographic and healthcare use details, collected by either an online or paper format based on participant preference. Follow-up questionnaires were completed at 6 weeks and 6 months postoperatively.

**RESULTS:** 83.7% of approached women consented to participate, and 85% of consenting women reported online access. Over 80% of participants preferred to answer the preoperative questionnaires online, however, this dropped to 60% at follow-up. With regards to potential preoperative risk factors, 40% reported pain in the prior week of mild but significant intensity and interference, 25% had significantly depressed mood, 22.5% reported high state anxiety, and 7.5% reported high trait anxiety. Over 55% had sought medical help for pain preoperatively, with 18% using an analgesic. Postoperatively, 29% of women were lost to follow-up. Of those completing the follow-up questionnaires, 20% reported only mild pain at 6 weeks, and 8%-13% reported pain or interference at 6 months. Over 30% sought a healthcare professional for pain and 15% were still using pain medication at 6 weeks.

**CONCLUSION:** The planned c-section population is accessible for research, however for a larger study, an alternative time of follow-up should be considered due to the large number of women lost to follow-up. Online data collection was preferred by the majority of women, however a significant proportion preferred paper questionnaires at follow-up. Pain and interference affect women prior to, and following, a planned c-section. A contradiction appears to exist between how women report and rate pain and their actions taken to relieve this pain, which begs further investigation.

### 18

#### PAIN MANAGEMENT IN PEDIATRIC SICKLE CELL DISEASE – PROGRESS AND PARADIGM SHIFT

**Chair: Jennifer Stinson**

**Speakers: Jennifer Stinson RN(EC) PhD, Roberta Cardoso RN PhD, Eufemia Jacob RN PhD**

Jennifer Stinson RN(EC) PhD, Chronic Pain Program, Department of Anesthesia & Pain Medicine, Hospital for Sick Children; Roberta Cardoso RN PhD, Pain Research Centre, Faculty of Nursing, University of Toronto; Eufemia Jacob RN PhD, UCLA School of Nursing

#### WORKSHOP OBJECTIVE:

Vaso-occlusive episodes (VOE) account for 79–91% of emergency room visits and 59–68% of hospitalizations in pediatric patients with sickle cell disease (SCD). Despite opiate therapeutic dosing schedules using continuous infusions or patient controlled analgesia, pain intensity ratings remain moderate to severe during hospitalization for acute painful episodes. The focus of this workshop is to examine the current evidence related to the management of acute painful episodes in children and adolescents with sickle cell disease. Innovative approaches to promote a paradigm shift in thinking about the use of pharmacological and nonpharmacological interventions in both the acute care and ambulatory care settings will be discussed.

#### Learning Objectives:

1. To examine evidence and progress made related to the use of pharmacologic and nonpharmacologic interventions in children with sickle cell disease.
2. To discuss compliance to guidelines related to pain management practices in children with sickle cell disease.
3. To summarize evidence supporting the existence of phases to an acute painful episode and discuss proactive pain management approaches in the context of each phase.

### 18A

#### A RETROSPECTIVE AUDIT OF SICKLE CELL DISEASE PAIN MANAGEMENT PRACTICES IN A PEDIATRIC HOSPITAL: ARE WE MEETING CURRENT STANDARDS?

**Jennifer Stinson RN(EC) PhD**

Chronic Pain Program, Department of Anesthesia & Pain Medicine, Hospital for Sick Children, Toronto, Ontario

**BRIEF DESCRIPTION:** Dr. Stinson is a clinician scientist at the Hospital for Sick Children in Toronto and an Assistant Professor at the University of Toronto. Various pain guidelines have been developed that advocate aggressive pain management during the first 2-3 days of hospitalization for painful VOE. However, results from several studies since these guidelines have been published demonstrate that adequate pain relief is not being achieved during hospitalization in children with SCD and children often received sub-optimal doses of analgesics. Dr. Stinson will summarize the results of a retrospective review of 200 medical records evaluating clinical practice in the management of acute painful episodes during hospitalization in children with sickle cell disease. Discussion of issues related to clinical practice guidelines and challenges in compliance will be addressed. Dr. Stinson will also discuss how a continuous quality improvement framework can be used to identify best practices, develop and implement interventions to improve compliance with best practices and re-audit to determine whether the expected improvement in outcomes is achieved in terms of improved pain management in youth with SCD.

## 18B

**IS THERE ENOUGH EVIDENCE ABOUT THE EFFECTIVENESS OF INTERVENTIONS USED TO MANAGE VASO-OCCLUSIVE CRISES IN A PAEDIATRIC POPULATION?****Roberta Cardoso RN PhD****Pain Research Centre, Faculty of Nursing, University of Toronto, Toronto, Ontario**

**BRIEF DESCRIPTION:** Dr. Cardoso is a Post-Doctoral Research Fellow in the Faculty of Nursing at the University of Toronto. Painful vaso-occlusive crises (VOCs) are the most common reason for emergency department visits and repeated hospitalizations among patients with sickle cell disease (SCD). Painful episodes should be treated as early and aggressively as possible, as acute and persistent pain can result in significant morbidity. Management of VOCs include control of pain with opioid and non-opioid analgesics, increased hydration, bed rest, non-pharmacological strategies such as heat, massage and psychosocial interventions, and treatment of underlying infection or other complications. Dr. Cardoso will critically appraise the current research evidence on the effectiveness of pharmacologic and non-pharmacologic interventions used to manage VOCs in children and adolescents. She will present the results of a systematic review performed where 19 RCTs published in peer-reviewed journals were identified and analyzed. A highlight of the progress, gaps in knowledge and future directions for research related to pain management will be discussed.

## 18C

**ARE THERE PHASES TO THE VASO-OCCLUSIVE PAINFUL EPISODE IN SICKLE CELL DISEASE?****Eufemia Jacob RN PhD****UCLA School of Nursing**

**BRIEF DESCRIPTION:** Dr. Jacob is an assistant professor at the University of California Los Angeles. She will describe the pain experience of children with sickle cell disease who were hospitalized for acute painful episodes. The pain experience, and signs and symptoms as reported by children and/or parents prior to admission (at home and in the ED) and during hospitalization are presented in the context of whether there is evidence to support the existence of phases to an acute painful episode. The current and previous data suggest that patients were taken to the ED when they experienced severe pain. A guiding principle in pain management is that prevention of pain is always better than treatment. Pain that is established and severe is often more difficult to control. Therefore, clinicians may consider establishing an early intervention or prevention protocol that may be instituted in an ED, urgent care, or day hospital setting, where parents can bring their child for hydration and institute early proactive "peak pain" prevention approaches. For example, protocols for outpatient management in a day care center have been developed as an alternative to hospital admission. The day care center provides rest, rehydration with oral or intravenous fluids, and analgesia. "Treat early to prevent peak pain" rather than a "wait and see if it peaks" approach would be a paradigm shift in the management of acute painful episodes in individuals with sickle cell disease.

1:30 PM – SESSION 207

## 19

**CANNABIS FOR THE MANAGEMENT OF PAIN: ASSESSMENT OF SAFETY STUDY (COMPASS)****Chair: Mark Ware****Speakers: Mark Ware MBBS MRCP(UK) MSc, Tongtong Wang PhD(cand)**

**Mark Ware MBBS MRCP(UK) MSc, MUHC Pain Clinic, Departments of Anesthesia and Family Medicine, McGill University, Montréal, Québec; Tongtong Wang PhD(cand), Department of Epidemiology, Biostatistics and Occupational Health, McGill University, Montréal, Québec; on behalf of the COMPASS Investigative team, Vancouver, London, Toronto, Montreal, Fredricton and Halifax**

**Learning Objectives:**

1. Appreciate safety aspects of cannabis when used as part of medical therapy for pain management.
2. Understand issues related to safety studies of medical cannabis use.
3. Reflect on attitudes towards cannabis as a therapeutic agent.

**BRIEF DESCRIPTION:** It is estimated that 10-15% of patients with chronic noncancer pain and multiple sclerosis self-administer cannabis to manage pain, sleep, spasticity and mood. Previous studies have shown that smoked cannabis may be analgesic, however little is known of the safety of such use, and concerns around adverse events (AEs), endocrine, pulmonary and cognitive function are often raised by physicians, patients, and policy makers. Therefore, we conducted a multi-centre cohort study to compare the adverse event profile of patients with chronic pain who reported using cannabis as part of their pain management regimen (cases) with a group of chronic pain patients who were not cannabis users (controls).

4:00 PM – PLENARY SESSION 208

## 20

**DEVELOPMENT AND EVALUATION OF A TRANSFORMATIONAL MODEL OF PAIN MANAGEMENT IN LONG TERM CARE: THE CLINICAL AND PUBLIC POLICY INTERFACE****Chair: Thomas Hadjistavropoulos****Speakers: Thomas Hadjistavropoulos PhD, Gregory P Marchildon PhD**

**Thomas Hadjistavropoulos PhD, Department of Psychology and Centre on Aging and Health, University of Regina; Gregory P Marchildon PhD, Johnson-Shoyama Graduate School of Public Policy, University of Regina**

**WORKSHOP OBJECTIVE:**

To outline and discuss feasible and cost-effective clinical and public policy recommendations designed to address the undermanagement of pain among seniors who reside in long-term care (LTC) facilities. The recommendations are based on a recent consensus meeting of leading United States and Canadian geriatric pain clinicians and public policy experts.

**Learning Objectives:**

1. To familiarize participants with data demonstrating the undertreatment of pain among seniors who reside in long-term care.
2. To familiarize participants with fiscal and administrative constraints that have interfered with the implementation of more effective pain management practices in long-term care facilities.
3. To familiarize participants with a transformational model of improved pain management in long-term care (i.e., a model that takes into account fiscal realities and existing legislation and public policies).

## 20A

**TRANSFORMING PAIN MANAGEMENT IN LONG-TERM CARE: CLINICAL RECOMMENDATIONS****Thomas Hadjistavropoulos PhD****Department of Psychology and Centre on Aging and Health, University of Regina**

**BRIEF DESCRIPTION:** The undertreatment of pain in older adults who reside in long-term care facilities has been well documented, leading to clinical guideline development and professional educational programs designed to foster better pain assessment and management in this population. Despite these efforts, little improvement has occurred and we postulate that focused attention to public policy and cost implications of systemic change is required to create positive pain-related outcomes. The presentation will describe the methodology used during a two-day consensus meeting (on pain management in long term care) of prominent United States and Canadian pain and public policy experts and the clinical recommendations that resulted from the meeting. Information on the reactions of long-term care facility personnel (who were then asked to complete a questionnaire concerning their views on the transformational model will also be outlined [e.g., utility, feasibility, interest in implementation]).

## 20B

**TRANSFORMING PAIN MANAGEMENT IN LONG TERM CARE: PUBLIC POLICY RECOMMENDATIONS****Gregory P Marchildon PhD****Johnson-Shoyama Graduate School of Public Policy, University of Regina**

**BRIEF DESCRIPTION:** The presentation will outline public policies and fiscal realities that have acted as constraints on improving pain management in Canadian long-term care facilities. It will also outline public policy recommendations designed to facilitate the introduction of a new clinical model of long-term care designed to improve pain management along with performance indicators to assess the success of implementation.

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4:00 PM – SESSION 209

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## 21

**HOW TO IMPROVE ACCESS TO SERVICES FOR CHRONIC PAIN USING A COLLABORATIVE MODEL  
THE DEVELOPMENT NOVA SCOTIA CHRONIC PAIN SERVICES****Chair: Mary Lynch****Speakers: Mary Lynch MD FRCPC, Rachele O'Sullivan MBA, Peter MacDougall MD FRCPC****Mary Lynch MD FRCPC, Director Pain Management Unit, Capital District Health Authority; Rachele O'Sullivan MBA, Director of Acute and Tertiary Care, Nova Scotia Department of Health; Peter MacDougall MD FRCPC, Director Nova Scotia Chronic Pain Collaborative Care Network****WORKSHOP OBJECTIVE:**

**Overall Aim of Workshop:** The aim of this workshop is to tell a story of success in improving access to service for patients suffering with chronic pain in Nova Scotia. This success has resulted from a close partnership between the Nova Scotia Department of Health, our tertiary level academic pain center, the community and stakeholders from every District Health Authority. We believe sharing solutions will benefit all Canadians suffering with pain.

**Learning Objectives:**

1. After attending this workshop the participant will appreciate the need for novel solutions to service delivery in the field of chronic pain.
2. The participant will be aware of a multi-pronged strategy used in Nova Scotia to bring evidence based approaches for pain management to patients who suffer from chronic pain.

3. The participant will understand the advantages of a partnership between the Provincial Department of Health, academic pain specialists and the community in initiating and sustaining a province wide strategy for improved management of chronic pain and will be in a position to identify whether this approach has application for other provinces across Canada.

## 21A

**IMPROVING ACCESS TO SERVICES FOR CHRONIC PAIN USING A COLLABORATIVE MODEL: AN OVERVIEW****Mary Lynch MD FRCPC****Director, Pain Management Unit, Capital District Health Authority, Halifax, Nova Scotia**

**BRIEF DESCRIPTION:** The Canadian Medical Association and other members of the Wait Time Alliance have identified national benchmarks for the management of pain with maximum waits of 6 months for adults with chronic pain and shorter benchmarks for specific types of pain that are potentially reversible if treated early (Alliance 2007). A national survey has identified that wait times for treatment at publicly funded pain clinics across Canada exceed these benchmarks with wait times of over 1 year at over 30% of clinics ranging up to 5 years with large areas of Canada having no service (Peng, Chouiniere et al. 2007). Further, it has been identified that people who suffer from chronic pain deteriorate while waiting for access to care. This deterioration includes increased pain and decreased health related quality of life as well as escalating depression (Lynch, Campbell et al. 2008). In addition to the human suffering, chronic pain is associated with a significant economic burden in terms of direct costs of health care as well as indirect costs related to disability caused by the pain. There is a critical need to address the needs of this population but the challenges are significant. In Nova Scotia we have launched a province wide, multi-pronged initiative targeting chronic pain. Nova Scotia Chronic Pain Services is the result of a partnership between the Provincial Department of Health, academic pain specialists and the community.

## 21B

**IMPROVING ACCESS TO SERVICES FOR CHRONIC PAIN USING A COLLABORATIVE MODEL, PERSPECTIVE FROM THE DEPARTMENT OF HEALTH****Rachele O'Sullivan MBA****Director of Acute and Tertiary Care, Nova Scotia Department of Health, Halifax, Nova Scotia**

**BRIEF DESCRIPTION:** In the present climate of limited resources and escalating health care costs it is a constant challenge for provincial health representatives to find solutions. This requires re-allocation of resources in new and creative ways while assuring these solutions are evidence based and congruent with the needs of the community. In response to long wait lists for Chronic Pain Services, the NS Department of Health developed an action plan to increase resources at all levels of the system. Developed by a provincial working group, this Action Plan provides a roadmap to help make available integrated and coordinated quality pain services to Nova Scotians. The major goals of the Action Plan are to develop a seamless continuum of chronic pain services ensuring equitable access, adequate education for providers/patients and quality evidence-informed care through program evaluation and research. Currently, a provincial committee is overseeing the implementation of the Action Plan and the initiative is supported with funding of \$1 million annually. Since November 2007, provincial access to interdisciplinary chronic pain services was increased by establishing six new chronic pain clinics throughout the province and enhancing existing chronic pain services. In addition, there have been educational initiatives to support health professionals, a mentorship pilot for family physicians working with chronic pain patients, and improved access to self management programs. Standardized referral, triage and treatment systems are in use at the clinics which will allow ongoing evaluation and outcome measurement in the areas of demographics, clinical outcomes, healthcare utilization, satisfaction and wait times.

21C

**NOVA SCOTIA CHRONIC PAIN COLLABORATIVE CARE NETWORK (NSCPCCN)**

Peter MacDougall MD FRCPC

Director, Nova Scotia Chronic Pain Collaborative Care Network, Halifax, Nova Scotia

**BRIEF DESCRIPTION:** In addition to the new provincial pain clinic sites the NSCPCCN has been launched. This is a mentor-mentee network designed to increase capacity for pain management through close communication between primary care providers (PCP's) and pain specialists. It will provide a clinical resource for PCP's as well as Continuing Professional Development. A research/quality assurance strategy is built into the model.

The project has been launched in the South Shore District Health Authority as a pilot project involving 20 Family Physicians and 1 nurse practitioner. The PCP's have been divided into two groups, one of whom will receive both the CPD activities and access to a mentor, and a control group that will receive only the CPD activities. Preliminary data collection including focus groups, physician questionnaires and patient questionnaires (SF-30 and POMS) have been completed. Data collection will be repeated at the end of 8 months. We will present both the preliminary and follow-up data.

**FOOTNOTES/REFERENCES:** Alliance, W. T. (2007). Time for Progress: 2007 <http://www.waittimealliance.ca/> accessed June 27, 2008. Lynch, M. E., F. A. Campbell, et al. (2008).

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4:00 PM – SESSION 210

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22

**PSYCHOPHYSICAL INSIGHTS REGARDING THE MECHANISMS OF CHRONIC PAIN**

**Chair:** Gary B Rollman

**Speakers:** Gary B Rollman PhD, Philippe Goffaux PhD, Stefan Lautenbacher PhD

Gary B Rollman PhD, Department of Psychology, University of Western Ontario; Philippe Goffaux PhD, Faculty of Medicine, University of Sherbrooke; Stefan Lautenbacher PhD, Department of Physiological Psychology, University of Bamberg, Germany

**WORKSHOP OBJECTIVE:**

To provide an state of the art examination of psychophysical and electrophysiological techniques, models, and findings relating to the predisposition for chronic pain and the precipitating and perpetuating factors responsible for the presentation of difficult pain conditions

**Learning Objectives:**

1. To understand psychophysical tools and models that can provide insights regarding chronic pain conditions.
2. To understand the interplay between peripheral and central mechanisms involving sensory, affective, and cognitive factors in such disorders as fibromyalgia.
3. To understand the concept of hypervigilance as a potential predisposing factor in the development of chronic postsurgical pain.

22A

**BEHAVIORAL CORRELATES OF CHRONIC PAIN**

Gary B Rollman PhD

Department of Psychology, University of Western Ontario, London, Ontario

**BRIEF DESCRIPTION:** Psychophysical techniques developed in the laboratory, often using induced pain with healthy volunteers, have provided valuable methodological and conceptual insights regarding the mechanisms of chronic pain conditions. When applied to patient populations, they have yielded important data regarding predisposing, precipitating, and perpetuating factors which affect the conversion of acute pain to chronic pain. This presentation will look at models and phenomena related to adaptation level, hypervigilance, additivity, diffuse noxious inhibitory controls, temporal summation and windup. It will examine the

implications of the data for an understanding of central plasticity and both biological and psychosocial factors which may arrest and help manage the progression from acute to chronic pain.

22B

**INTERPRETING THE PSYCHOPHYSICS OF CHRONIC PAIN USING ELECTROPHYSIOLOGICAL RESPONSES**

Philippe Goffaux PhD

Faculty of Medicine, University of Sherbrooke, Sherbrooke, Quebec

**BRIEF DESCRIPTION:** Chronic pain is usually accompanied by profound changes in central nervous system functioning, including spinal and cortical alterations in nociceptive processing. Despite these changes little is known regarding the continued capacity for endogenous pain control in chronic pain patients. Combining psychophysical testing with temporally sensitive electrophysiological recordings allows us to address this issue. Preliminary results indicate that patients suffering from chronic widespread pain (i.e., fibromyalgia patients) can still benefit from the positive feedback provided by their environment, and, therefore, can still show expectancy-mediated analgesia. Surprisingly, the neurobiology underlying expectancy-mediated analgesia is very different when chronic pain is present. Unlike healthy control subjects, expectancy-mediated analgesia is purely a supra-spinal phenomenon, unrelated to the concomitant activation of descending inhibitory (bulbo-spinal) responses. This suggests that, although fibromyalgia patients show a robust deficit in their descending responses, they are capable of cognitive re-appraisal and will likely benefit from cognitive-behavioural approaches to treatment. A historical review of psychophysical findings confirms that baseline pain levels are largely affected when generalized pain is present. However, recent results also indicate that hypervigilance to actual (or potential) damage contributes to the overall appreciation of supra-threshold pain ratings in chronic pain patients. Electrophysiological measurements suggest that this is an early attentional process which probably involves sensory-discriminative channels. These findings demonstrate the importance of paying attention to an ensemble of cognitive control processes when detailing the psychophysical profile of chronic pain patients.

22C

**HYPERVIGILANCE – A PREDISPOSING FACTOR FOR PERSISTENT PAIN?**

Stefan Lautenbacher PhD

Department of Physiological Psychology, University of Bamberg, Germany

**BRIEF DESCRIPTION:** Hypervigilance – a strong attentional bias toward pain – has become known as accompaniment of chronic pain and modulator of the effectiveness of pain management. Its usefulness as predisposing factor for the development and maintenance of pain has repeatedly been discussed. We determined associated psychological factors (affective state, cortisol reactivity, pain sensitivity) to hypervigilance in healthy volunteers for a better understanding of the conceptual distinctness from or overlap with similar concepts. Furthermore, we compared direct (attentional task) and indirect measures (questionnaires) of hypervigilance. Using this conceptual knowledge, we aimed at demonstrating the predictive power of hypervigilance for the development of acute and chronic postoperative pain. Hypervigilance measures proved to be of equal or superior predictive power compared to other psychological predictors under investigation.

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 4:00 PM – SESSION 211
 

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23

**FROM RESEARCH TO CLINICAL PRACTICE: A DEMONSTRATION WORKSHOP ON QUANTITATIVE SENSORY PAIN TESTING (QSPT) IN THE EVALUATION OF NEUROPATHIC PAIN**

Chair: Pam Squire

Speakers: Pam Squire MD CCFP, Mark Ware MBBS MRCP (UK) MSc, Serge Marchand PhD, Misha Backonja MD

Pam Squire MD CCFP, Clinical Assistant Professor, University of British Columbia; Mark Ware MBBS MRCP (UK) MSc, MUHC Pain Clinic, Departments of Anesthesia and Family Medicine, McGill University, Montreal, Quebec; Serge Marchand PhD, Professeur titulaire, Chaire en douleur UQAT-UdeS, Université de Sherbrooke, Faculté de médecine, neurochirurgie; Misha Backonja MD, Professor, Neurology, Anesthesiology and Rehabilitation Medicine, University of Wisconsin

**WORKSHOP OBJECTIVE:**

1. To offer participants a rationale for standardizing the examination and documentation of the sensory examination in patients presenting with symptoms of neuropathic pain.
2. To provide participants with tools and methodology to aid in performing, documenting and interpreting the examination findings.
3. To demonstrate, in a small group interactive hands on format, semi-quantitative methods of eliciting sensory signs of neuropathic pain using bedside quantitative sensory pain testing (QSPT). The workshop will specifically demonstrate methods useful for the documentation of sensory loss and sensory gain. The potential benefits and shortcomings of this examination will be reviewed.

**Learning Objectives:**

1. Diagnosing neuropathic pain can be challenging in some patients. Neuropathic pain results when there are sensory deficits due to nerve injury and subsequent modification of the neuronal function. In order to diagnose disease or injury of either the PNS or CNS there must be demonstration of some degree of loss of neuronal function. Clinical techniques to objectively demonstrate neuronal damage that leads to sensory loss are well established. Evolving research is demonstrating correlation between modification of the transmitted sensory information by facilitation and failure of inhibitory mechanisms and clinical signs of sensory gain (allodynia, hyperalgesia, etc). Clinical skills to evaluate and document these phenomena are not as robust. QSPT offers a simple bedside examination technique that can provide parameters to document sensory loss of small and large fibers as well as neuromodulatory changes and sensory gain. This workshop will provide (for a small fee) two standardized tools and demonstrate the physical examination methodology of a sensory examination that may improve diagnostic accuracy regarding the presence of neuropathic pain.

2. We would like to provide the participants with an examination tool kit that contains a Somic brush, a Neuropen, documentation and interpretation tools. We are suggesting that the cost of this toolkit could be covered through both an unrestricted educational grant that Janssen Ortho would provide to the CPS and by charging a nominal fee of \$30.00 for each participant payable upon registration.

3. Note – We would like to propose that each instructor (Squire, Ware and Backonja to teach the workshops with Marchand as an onsite advisor for the sessions) will teach 2 concurrent 45 minute workshops for a maximum of 10 people each to accommodate up to 60 participants.

23A

**QSPT – A CLINICAL WORKSHOP DEMONSTRATING THE SENSORY EXAMINATION IN THE EVALUATION OF NEUROPATHIC PAIN**

Pam Squire MD CCFP

Clinical Assistant Professor, University of British Columbia, Vancouver, British Columbia

Concurrent workshop

23B

**QSPT – A CLINICAL WORKSHOP DEMONSTRATING THE SENSORY EXAMINATION IN THE EVALUATION OF NEUROPATHIC PAIN**

Mark Ware MBBS MRCP (UK) MSc

MUHC Pain Clinic, Departments of Anesthesia and Family Medicine, McGill University, Montreal, Quebec

Concurrent workshop

23C

**FLOATING ADVISOR DURING THE WORKSHOPS FOR QUESTIONS RELATING TO THE RESEARCH APPLICATIONS OF THIS EXAM**

Serge Marchand PhD

Professeur titulaire, Chaire en douleur UQAT-UdeS, Université de Sherbrooke, Faculté de médecine, neurochirurgie

Floating advisor

23D

**QSPT- A CLINICAL WORKSHOP DEMONSTRATING THE SENSORY EXAMINATION IN THE EVALUATION OF NEUROPATHIC PAIN AND POSSIBLE ADVANCED APPLICATIONS**

Misha Backonja MD

Professor, Neurology, Anesthesiology and Rehabilitation Medicine, University of Wisconsin

Concurrent workshop

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**SCIENTIFIC PROGRAM DAY TWO  
SATURDAY MAY 30, 2009**

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7:30 AM – JANSSEN-ORTHO INC. SPONSORED SYMPOSIUM

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24

**CURRENT PAIN MANAGEMENT PRACTICES & CLINICAL GUIDELINES: BENCHMARK AND OPTIMIZE YOUR PAIN PRACTICE**

Chair: Sol Stern

Speakers: Roman Jovey MD, Philip A Baer MDCM FRCPC FACR

Roman Jovey MD, Program Director, CPM Centres for Pain Management, Physician Director, Addiction and Concurrent Disorders; Philip A Baer MDCM FRCPC FACR Co-chair, Therapeutics Committee, Canadian Rheumatology Association; Vice-president, Ontario

**Learning Objectives:**

1. Benchmark your own clinical pain management practice against that of your colleagues.
2. Identify gaps in your current assessment and management of pain to optimize outcomes of treatment.
3. Classify patients with persistent pain into different subtypes to determine optimum treatment approaches.
4. Review international clinical guidelines for managing pain in OA.

**BRIEF DESCRIPTION:** This symposium will provide information on pain assessment and management in the Canadian family practice setting – results of a recent GP Practice Audit, classification of the various pain sub types by mechanism and by temporal characteristics, discussion of the different treatment options for each pain subtype and a review of recent international guidelines for pain management in OA.

25

**DEPENDENT YET DEVELOPING: NEW THEORIZING ON THE UNIQUE SOCIAL CONTEXT OF INFANT PAIN**

Chair: Jason J McDougall

Speaker: Rebecca R Pillai Riddell BA Spec Hons MA PhD Cpsych  
 Rebecca R Pillai Riddell BA Spec Hons MA PhD CPsych, Canadian Institutes of Health Research New Investigator, Assistant Professor, Department of Psychology, York University, Toronto, Ontario; 2009 Early Career Award Recipient

**Learning Objectives:**

1. Familiarize audience with relevant psychosocial tenets associated with infant development.
2. Explain the importance of the caregiver to understanding pain in infancy.
3. Present future directions in understanding the social context of infant pain.

**BRIEF DESCRIPTION:** The caregiver-infant relationship during the first year of life is often the primary milieu for the early acquisition of distress regulation. Based on a developing program of research focused on empirically exploring the implications of caregivers on infant pain-related distress, new theoretical hypotheses will be presented that accounts for the unique developmental trajectory of infancy.

25A

**THE COMPLEX STORY OF SLEEP RESTRICTION ON PAIN PERCEPTION**

Chair: Jason J McDougall

Speaker: Gilles Lavigne DMD FRCD (oral med) PhD  
 Gilles Lavigne DMD FRCD (oral med) PhD, Canada Research Chair (pain, sleep & trauma), Department of surgery, Hôpital du Sacré Cœur and Faculté de médecine dentaire, Université de Montréal, Montréal, Québec

**Learning Objectives:**

1. Understanding the pain and sleep interaction.
2. Differentiating sleep deprivation from fragmentation and consequences on pain.
3. Teasing out the influence of various sleep stages on pain perception.

**BRIEF DESCRIPTION:** Restrictions in sleep (forced delayed sleep onset, shorter duration) or experimental specific sleep-stage deprivation (deep non-REM or REM) may induce somatic pain complaints in subsequent days and may also influence pain threshold or tolerance ratings. Several dogmas persist on the interaction between pain & sleep and needs to be revisited. Recent data suggest that all sleep stages and their continuity (absence of fragmentation) in the sequences of non-REM to REM sleep cycles are more important than specific disturbances of deep sleep (sleep stages 3&4). Moreover, endogenous analgesic processes (e.g., DNIC) can also be disrupted by interferences in sleep duration and continuity; such observation may contribute to explain changes in pain reports in presence of poor sleep complaints. Finally, the putative role of REM sleep, a specific sleep stage characterized by intense brain and autonomic activity, on pain reports and on subject's expectation of placebo analgesia will be described.

26

**EMERGING TARGETS FOR THE CONTROL OF INFLAMMATORY PAIN**

Chair: Peter MacDougall

Speakers: Jason J McDougall BSc PhD, Jana Sawynok PhD, Andy Dray BSc PhD

Jason J McDougall BSc PhD, Associate Professor, AHFMR Senior Scholar, Arthritis Society Investigator, Department of Physiology & Biophysics, University of Calgary, Calgary, Alberta; Jana Sawynok PhD, Professor, Department of Pharmacology, Dalhousie University, Halifax, Nova Scotia; Andy Dray BSc PhD, Chief Scientist AstraZeneca, Adjunct Professor, McGill University, AstraZeneca R & D Montreal, Montreal, Quebec

**Learning Objectives:**

1. Review the mechanisms of inflammatory pain.
2. Give an overview of some novel approaches to manage inflammatory pain and highlight potential future therapies.
3. Describe some of the challenges facing the pharmaceutical industry when validating these novel targets before they can be made available to chronic pain patients.

26A

**PROTEINASES ACTING AS SIGNALLING MOLECULES ENCODE PAIN IN ARTHRITIS**

Chair: Jason J McDougall BSc PhD

Associate Professor, AHFMR Senior Scholar, Arthritis Society Investigator, Department of Physiology & Biophysics, University of Calgary, Calgary, Alberta

**BRIEF DESCRIPTION:** Serine proteinases are known to be elevated in the joints of arthritis patients where they primarily act to degrade proteins associated with the extracellular matrix. In addition to their enzymatic function, proteinases have recently been found to act as signalling molecules where they regulate pathophysiological events such as pain and inflammation. This signalling process is achieved by cleaving and then activating a group of G protein-coupled receptors called proteinase activated receptors (PARs). There are currently four members of this family of receptors (PAR1-4). In rodent knees, we have found that triggering of PAR4 by a selective peptide agonist (AYPGKF-NH<sub>2</sub>) leads to an increase in joint nociceptor activity and heightened pain behaviour. These pronociceptive effects can be blocked by treatment with the PAR4 antagonist pepducin p4Pal10. In other studies, treating preclinical animal models of arthritis with pepducin p4Pal10 caused a significant reduction in joint pain and inflammation. Mechanistically, it seems that PAR4 activity is mediated in part by the bradykinin-2 (B<sub>2</sub>) receptor as PAR4 responses could be attenuated by the B<sub>2</sub> receptor antagonist HOE140. In summary, PARs show great promise as novel targets for the management of pain associated with inflammatory joint disease.

26B

**NOVEL TOPICAL AND LOCALLY ACTING ANALGESIC AND ANTI-INFLAMMATORY AGENTS**

Chair: Jana Sawynok PhD

Professor, Department of Pharmacology, Dalhousie University, Halifax, Nova Scotia

**BRIEF DESCRIPTION:** Multiple chemical mediators contribute to nociceptive signalling at peripheral nerve endings during inflammation. Compartmental delivery of drugs to peripheral aspects of sensory nerves, either by topical application (e.g. by cream, gel, ointment) or direct application to joints (e.g. by intra-articular injections or infusions), has the potential to deliver active agents to peripheral sites, producing fewer adverse effects and drug interactions due to systemic drug actions, and to play an adjunctive role in treatment. In past decades, NSAIDs have been available for topical delivery and opioids have been explored for intra-articular applications. Recent preclinical studies reveal novel drugs can

have analgesic actions following topical or local peripheral applications in inflammatory models (e.g. selective alpha2-adrenergic receptor agonists, ketanserin, amitriptyline, tramadol). Furthermore, clinical studies explore the potential for intra-articular applications of such agents to produce pre-emptive or analgesic sparing actions perisurgically (e.g. ketorolac/morphine/ropivacaine, eostigmine/clonidine/tenoxicam/morphine/bupivacaine, tramadol/ropivacaine/ketamine, ketoprofen/amitriptyline/oxymentazoline). This presentation will highlight some of these recent preclinical and clinical developments by way of exploring the concept of compartmental delivery of novel pharmacological agents for analgesic properties in conditions of joint inflammation.

## 26C

### CHALLENGES AND OPPORTUNITIES IN THE VALIDATION OF EMERGING TARGETS

**Andy Dray BSc PhD**

**Chief Scientist AstraZeneca, Adjunct Professor, McGill University, AstraZeneca R & D Montreal, Montreal, Quebec**

**BRIEF DESCRIPTION:** Many data support the richness of molecular events associated with inflammatory pain. However target validation for therapeutic interventions continues to be a major challenge. Preclinical and recent translational clinical data have highlighted that dysfunction of ion channels (voltage gated and ligand gated) and neurotrophins (eg nerve growth factor, NGF) are key elements that cause peripheral nerve hypersensitivity in inflammation. I will discuss the emerging data with respect to the validation and risks associated with the usefulness of TRP V1 antagonists as well as NGF inhibitors to manage inflammatory pain.

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10:30 AM – SESSION 302

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## 27

### SUPPORT GROUPS FOR CHRONIC PAIN

**Chair: Barry D Ulmer**

**Speakers: Terry Bremner, Heather Divine Nurse, Barry D Ulmer BA**

**Terry Bremner, The Chronic Pain Association of Canada; Heather Divine, Nurse, The Chronic Pain Association of Canada; Barry D Ulmer, BA, The Chronic Pain Association of Canada, Edmonton, Alberta**

#### WORKSHOP OBJECTIVE:

The primary objective of this workshop is to show participants the overall need for support groups, their ability to improve the treatment of pain and to increase efforts for more advocacy and education by members of the group. To encourage participants to support and assist individuals setting up support groups.

#### Learning Objectives:

1. To improve the understanding of support groups, how to establish them and the need to encourage patients to
2. To show the value of support groups in developing strong social supports, which often requires the help of a pain sufferers professional caregiver.
3. To show the importance of support groups in the area of education, advocacy, partnerships with professionals and show the overall power that support groups may have in creating change.

## 27A

### SUPPORT GROUPS FOR CHRONIC PAIN

**Terry Bremner**

**The Chronic Pain Association of Canada, Edmonton, Alberta**

**BRIEF DESCRIPTION:** The group experience is not only a source of emotional support for its members, but also a forum for an exchange of information. It interrupts the isolation often experienced by the chronic pain sufferer and helps its members see how others have coped and managed their lives living with this invisible disability. All aspects of life – physical, social, work, sexual, spiritual and emotional, are impacted. The sharing of personal experiences – from frustrations to victories – help put each individuals pain situation into perspective. It has been noted that

chronic pain has never been considered to be life-threatening, research confirms that chronic pain is life limiting and in many instances lowers a person's ability to combat other life-threatening diseases. The experience of the group in its collective capacity, not only testifies to the ability of many chronic pain sufferers who have found ways to live a good life, but also offers encouragement to others to continue to search for help. Support groups also assist in helping the pain sufferer better advocate for themselves and the need for better pain management. This workshop is designed to encourage more individuals to establish support groups, how to establish them and maintain them, and how to encourage others to attend groups.

## 27B

### SUPPORT GROUPS FOR CHRONIC PAIN

**Heather Divine Nurse**

**The Chronic Pain Association of Canada, Edmonton, Alberta**

**BRIEF DESCRIPTION:** Chronic pain is frustrating to live with, for the pain sufferer and the people around them. Because, chronic pain is such a personal experience it is often difficult for others to understand exactly what a person is feeling and going through. No one knows your pain like you. In addition when pain takes over, communication usually suffers, many do not feel like discussing their pain or the problems related to it. Family and friends often hesitate to approach certain subjects, but pain sufferers do need family and friends to help manage their pain and move on with their lives. Support groups help the pain sufferer to address many of these situations so the anger and frustration they feel does not interfere with the help they need from others. People with a solid support system have many health advantages. For example they are able to cope better with chronic pain, are less likely to become depressed, are more independent, recover faster from illness and live longer. This workshop brings these points forward and gives ideas about developing a strong support system via a support group which brings about better pain management and gets people involved in their own treatment plan.

## 27C

### SUPPORT GROUPS FOR CHRONIC PAIN

**Barry D Ulmer BA**

**The Chronic Pain Association of Canada, Edmonton, Alberta**

**BRIEF DESCRIPTION:** Support groups are used to serve in the support of its members, but may also serve in the educational and advocacy capacity that goes far beyond the group in its capacity to increase understanding and attitudinal changes about this disease to the general public, to policy makers and regulators. This workshop shows the power that patients can have in creating change in pain management through education and advocacy via the strength of the support group.

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10:30 AM – SESSION 303

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## 28

### AN INTERDISCIPLINARY APPROACH TO THE ASSESSMENT AND MANAGEMENT OF CANCER TREATMENT RELATED PAIN

**Chair: Lucia Gagliese**

**Speakers: Cindy Shobbrook MN CON (C) CHPCN (C) RN (EC), Lucia Gagliese PhD, David Warr MD FRCPC**

**Cindy Shobbrook MN CON (C) CHPCN (C) RN (EC), Princess Margaret Hospital, Toronto, Ontario; Lucia Gagliese PhD, York University & University Health Network, Toronto, Ontario; David Warr MD FRCPC, Princess Margaret Hospital & University of Toronto, Toronto, Ontario**

#### WORKSHOP OBJECTIVE:

Over the years, the number of cancer survivors has increased. This reflects an aging population as well as decreasing mortality associated with some types of cancer. A multi-modal approach to cancer treatment, which may include surgery, radiation, and curative, palliative and adjuvant chemotherapy, may come with the price of chronic morbidity, including cancer

## Abstracts

treatment related pain (CTRP). It was previously thought that pain in cancer survivors was largely due to recurrence. However, a recent survey of ambulatory patients at a major cancer centre found that one half of "cancer pain" occurred in the absence of demonstrable recurrence. Therefore, CTRP might account for a substantial amount of the pain experienced by patients living with cancer. In addition, among survivors, CTRP has been documented more than a decade following active cancer treatment. Therefore, CTRP is highly prevalent and persistent and can have a profound negative impact on quality of life. CTRP is consistent with biopsychosocial models of chronic pain and requires a multidisciplinary approach to assessment and treatment with the primary treatment goals being pain relief and improvements in physical function and psychological wellbeing. This interactive, case-based workshop reviews research evidence for biopsychosocial models of CTRP, common clinical presentations, and an inter-professional approach to assessment and management.

### Learning Objectives:

1. Describe common etiologies for cancer treatment related pain including the role of biomedical and psychosocial factors.
2. Discuss a comprehensive, interdisciplinary approach to assessment of CTRP, including commonly associated characteristics.
3. Describe a multidisciplinary approach to managing different types of CTRP, with particular focus on a systematic approach to neuropathic pain.

## 28A

### THE ASSESSMENT OF CANCER TREATMENT RELATED PAIN

Cindy Shobbrook MN CON (C) CHPCN (C) RN (EC)

Princess Margaret Hospital, Toronto, Ontario

**BRIEF DESCRIPTION:** Cancer treatment related pain (CTRP) often has a conventional presentation that must be distinguished from pain caused by disease recurrence through systematic assessment and interdisciplinary review. Individuals who seek pain relief from cancer pain specialty clinics often fear their pain signals disease recurrence. Health care providers may also share this belief, and, as a result, may misattribute pain to disease recurrence. Therefore, in addition to the characteristics of pain, assessment must consider the meaning of the pain and its impact on the patient's ability to fully engage in relationships, return to work, or perform daily activities. Ms. Shobbrook's interactive case-based presentation will explore common presentations of cancer treatment related pain. She will describe a systematic assessment approach which has been developed to elicit a succinct history. She also will focus on "red flags" suggesting recurrence versus CTRP. Ms. Shobbrook's presentation will demonstrate how this systematic assessment approach is essential to the development of an evidence-based multidisciplinary treatment plan for patients with CTRP.

## 28B

### PSYCHOSOCIAL FACTORS IN CANCER TREATMENT RELATED PAIN

Lucia Gagliese PhD

York University & University Health Network, Toronto, Ontario

**BRIEF DESCRIPTION:** One of the most studied types of cancer treatment related pain (CTRP) is chronic breast cancer surgery pain. From 25 – 60% of women develop chronic pain following breast cancer surgery. Many have significant limitations in arm function including decreased strength and range of motion. Women with chronic breast cancer surgery pain report that the pain impairs their function across life domains including work, life enjoyment, relationships and sleep. Many of these women also experience poor psychological and physical health. The pain and its wide-ranging detrimental impact may persist for many years. Dr. Gagliese's presentation will focus on the psychosocial predictors of the development of chronic pain following surgery for breast cancer including age, anxiety, fear of pain, and depression. In addition, she will review the impact of this type of CTRP on various domains of quality of life. Finally, she will describe psychosocial interventions to improve coping and enhance quality of life in both women with active disease and survivors. Research evidence and clinical case materials will be used throughout the presentation.

## 28C

### THE MANAGEMENT OF CANCER TREATMENT RELATED PAIN

David Warr MD FRCPC

Princess Margaret Hospital & University of Toronto, Toronto, Ontario

**BRIEF DESCRIPTION:** Recent research has shown that cancer treatment related pain (CTRP) may arise as a consequence of chemotherapy, radiation or surgery. It can manifest as neuropathic or nociceptive pain, or a combination of both, and may be managed differently depending upon the etiology. Nociceptive pain is more familiar to the oncologist and more commonly managed in oncology clinics rather than pain clinics. Management requires an interdisciplinary approach with consideration of the special needs of cancer patients. For instance, when the pain is due to systemic, potentially curative, therapy, one objective is to allow systemic therapy to continue if at all possible. In this presentation, Dr. Warr will review the evidence for the mechanisms for CTRP with a special focus on neuropathic pain. Using case materials, he will discuss the treatment of CTRP including the efficacy of pharmacological interventions. Dr. Warr's interactive presentation will explore several different types of CTRP indicating how the potential for cure can influence therapeutic approach.

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12:30 PM – PFIZER CANADA INC. SPONSORED SYMPOSIUM

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## 29

### CENTRAL SENSITIZATION IN VARIOUS NEUROPATHIC PAIN MODELS

**Chair:** Gordon D Ko

**Speakers:** Gordon D Ko MD CCFP(EM) FRCPC FABPM,

Dr Angela Genge

Gordon D Ko MD CCFP(EM) FRCPC FABPM, Sunnybrook Health Sciences Centre, University of Toronto, Toronto, Ontario; Dr Angela Genge, Neurologist, Montréal Neurological Institute, Montréal, Québec

**BRIEF DESCRIPTION:** Objectives of this symposium are: The role of central sensitization in the various neuropathic pain models, a review of the various models (CRPS, CNeP, Fibromyalgia...) and treatment options for the various models.

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2:00 PM – SESSION 304

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## 30

### UNDERSTANDING CHRONIC POST SURGICAL PAIN: AN INTERNATIONAL PERSPECTIVE

**Chair:** Elizabeth VanDenKerkhof

**Speakers:** Julie Bruce PhD, Madelon Peters PhD,

Elizabeth VanDenKerkhof DrPH

Julie Bruce PhD, Epidemiology Group, Department of Public Health, University of Aberdeen, United Kingdom; Madelon Peters PhD, Department of Clinical Psychological Science, Maastricht University, The Netherlands; Elizabeth VanDenKerkhof DrPH, Anesthesiology, Nursing, Epidemiology, Queen's University, Kingston, Ontario

### WORKSHOP OBJECTIVE:

To review the epidemiology of chronic post-surgical pain and provide directions for future research and collaboration.

### Learning Objectives:

1. To examine methodological issues related to the definition and measurement of persistent post surgical pain.
2. To review psychological predictors of acute and chronic post surgical pain and recovery.
3. To discuss future directions for research and collaboration related to chronic post-surgical pain.

## 30A

**A REVIEW OF CHRONIC PAIN AFTER SURGERY****Julie Bruce PhD****Epidemiology Group, Department of Public Health, University of Aberdeen, United Kingdom**

**BRIEF DESCRIPTION:** Chronic post-surgical pain (CPSP) is defined as continuous or recurrent pain persisting beyond normal healing time, usually defined as three months after surgery. As many as 20% of patients seen in chronic pain clinics identify surgery as the main or at least a major contributory cause of their pain. However there is a paucity of information about the etiology and epidemiology of CPSP. It is often neuropathic in character and has been reported after many operative procedures, most notably breast, hernia, cardiac and amputation surgery. The definition and measurement of chronic pain after surgery has proved challenging because this is a late postoperative adverse event; also pain may be a continuation from the preexisting condition and this can be difficult to untangle, particularly within large-scale epidemiological studies. We have previously completed a series of CPSP studies of breast, cardiac, hernia and gastrointestinal surgery, using retrospective cohort designs and a standard approach to assessment and follow-up. This workshop will review published studies of CPSP, considering the methodological issues relating to the definition and accurate measurement of persistent postoperative pain. The workshop will consider the demographic, clinical and psychological risk factors for CPSP and whether a core dataset should be proposed as a basis for future international collaborative research.

## 30B

**PSYCHOLOGICAL PREDICTORS OF ACUTE AND CHRONIC POST OPERATIVE PAIN AND RECOVERY****Madelon Peters PhD****Department of Clinical Psychological Science, Maastricht University, The Netherlands**

**BRIEF DESCRIPTION:** Chronic pain after surgical intervention is more common than previously assumed. Recent studies indicated that psychological factors may contribute to acute post-operative pain intensity, but little is known about the contribution of psychological risk factors to persistent post surgical pain. We performed a study in which we examined the influence of several psychological variables on both acute post-operative pain and on long-term pain and recovery. Pre-operative psychological data were collected in 1490 elective surgery patients. Outcomes were assessed in the acute post-operative phase (0-4 days post-operation) and at 6 and 12 months follow-up.

Surgical fear and pain catastrophizing were predictive of high initial post-operative pain, and optimism was related to better activities of daily living immediately after the operation. At 6 months follow-up, about 10% of patients reported more pain or a new pain problem, and this was approximately 7% at 12 months follow-up. A high level of pain in the acute post-operative phase and operations of longer duration were predictive of chronic post-operative pain. The strongest psychological predictor was surgical fear. In addition, optimism predicted a good perceived global recovery and better QOL at follow-up.

## 30C

**CHRONIC POST SURGICAL PAIN: FUTURE DIRECTIONS FOR RESEARCH AND COLLABORATION****Elizabeth VanDenKerkhof DrPH****Anesthesiology, Nursing, Epidemiology, Queen's University, Kingston, Ontario**

**BRIEF DESCRIPTION:** Varying levels of chronic postsurgical pain (CPSP) are reported with rates as high as 50% after abdominal surgery. Prevention of chronic pain is important because it is difficult to manage once incurred, and is associated with high levels of disability and healthcare utilization. However, collecting information about outcomes after surgery can be time consuming and expensive. In recent studies tablet computers and the internet have been used to collect information about chronic post-surgical pain (CPSP) and health-related quality of life (HRQoL) in women undergoing abdominal surgery. A pilot study involving forty women

undergoing scheduled caesarean section gave participants the option to complete pain, psychological, HRQoL, and healthcare utilization questionnaires on a tablet computer preoperatively and using the internet postoperatively. Over 80% used tablet computers preoperatively and 60% used the internet six weeks after surgery to complete the questionnaires. Similar results were found in a cohort study of women undergoing abdominal surgery - 70% preferred to complete questionnaires preoperatively using a tablet computer, at six weeks 54% completed questionnaires online and at six months 51% completed questionnaires online. There were no significant differences in pain intensity levels across questionnaire completion format. Building on our successes to date, in both pain and informatics research, we have established an international collaboration to develop a set of web-based risk assessment and outcomes surveillance tools. Future directions for research should focus on identifying primary risk factors for CPSP which will enable us to develop tailored prevention and treatment strategies to reduce the burden of CPSP.

2:00 PM – SESSION 305

## 31

**OPIOIDS FOR CHRONIC NON-CANCER PAIN ON TRIAL****Chair: Norm Buckley****Speakers: Roman Jovey MD, Michael Gofeld MD FIPP****Roman Jovey MD, Program Director, CPM Centres for Pain Management, Physician Director, Addiction and Concurrent Disorders Program, Credit Valley Hospital, Mississauga, Ontario; Michael Gofeld MD FIPP Assistant professor, University of Toronto, Toronto, Ontario****WORKSHOP OBJECTIVE:**

In a pro-con debate format, to present the case for and against use of opioids for chronic non-cancer pain, highlighting physiological, psychotherapeutic and humanitarian benefits as well as the short and long term behavioral and physiological impact of both unrelieved pain and use of opioids.

**Learning Objectives:**

1. To become familiar with some of the history of the increase in use of opioids for chronic non-cancer pain.
2. To recognize the risks and benefits of use of opioids over time.
3. To appreciate the dilemma presented to clinicians by their patients with chronic non-cancer pain.

## 31A

**OPIOIDS ARE A SAFE AND EFFECTIVE MEDICATION FOR CHRONIC PAIN****Roman Jovey MD****Program Director, CPM Centres for Pain Management, Physician Director, Addiction and Concurrent Disorders Program, Credit Valley Hospital, Mississauga, Ontario**

**BRIEF DESCRIPTION:** The WHO analgesic ladder is presently the most accepted guideline for the pharmacological management of cancer pain. At least 70% of cancer-related pain can be relieved by following this simple standardized approach. The situation with treatment of chronic non-cancer pain (CNCP) is less straightforward. Although in the late 1990's enthusiasm to apply the same WHO principles to CNCP was running high, later reports and publications have raised numerous concerns. A limited effectiveness, risk of addiction and dramatic increase in the misuse of therapeutic opioids as well as evolving awareness of other long-term opioid side effects have recently drawn the attention of the medical community and general public. Nonetheless, in real life clinicians are often faced with patients suffering from intractable severe pain. When non-opioid options have been exhausted and pain is unrelenting there is an expectation that relief may be found with the use of opiates. In fact, some patients will benefit and enjoy at least partial pain relief and improved quality of life. Furthermore, they will remain on a stable dose of an opioid for long periods of time. However for others, the development of tolerance results in ever escalating opioid doses.

## Abstracts

The crucial clinical question then is: Do the benefits of prescribing opioids in CNCP outweigh the risks? This presentation will use a debate format between two pain clinicians, with audience participation, to discuss the "Yes" and "No" sides of this issue in a "mock-trial" of opioids for CNCP.

### 31B

#### OPIOIDS ARE A SLIPPERY SLOPE IN THE MANAGEMENT OF NON-MALIGNANT CHRONIC PAIN

**Michael Gofeld MD FIPP**

Assistant professor, University of Toronto, Toronto, Ontario

**BRIEF DESCRIPTION:** The WHO analgesic ladder is presently the most accepted guideline for the pharmacological management of cancer pain. At least 70% of cancer-related pain can be relieved by following this simple standardized approach. The situation with treatment of chronic non-cancer pain (CNCP) is less straightforward. Although in the late 1990's enthusiasm to apply the same WHO principles to CNCP was running high, later reports and publications have raised numerous concerns. A limited effectiveness, risk of addiction and dramatic increase in the misuse of therapeutic opioids as well as evolving awareness of other long-term opioid side effects have recently drawn the attention of the medical community and general public. Nonetheless, in real life clinicians are often faced with patients suffering from intractable severe pain. When non-opioid options have been exhausted and pain is unrelenting there is an expectation that relief may be found with the use of opiates. In fact, some patients will benefit and enjoy at least partial pain relief and improved quality of life. Furthermore, they will remain on a stable dose of an opioid for long periods of time. However for others, the development of tolerance results in ever escalating opioid doses.

The crucial clinical question then is: Do the benefits of prescribing opioids in CNCP outweigh the risks? This presentation will use a debate format between two pain clinicians, with audience participation, to discuss the "Yes" and "No" sides of this issue in a "mock-trial" of opioids for CNCP.

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2:00 PM – SESSION 306

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### 32

#### CANNABINOIDS AND FIBROMYALGIA: FROM RESEARCH TO CLINICAL PRACTICE

**Chair: Gordon Ko MD CCFP(EM) FRCPC FABPM**

**Speakers: Stéphane Potvin PhD (physiology), Lena Galimova MD FRCPC, Gordon D Ko MD CCFP(EM) FRCPC FABPM**

**Stéphane Potvin PhD (physiology), CHUS (Centre Hospitalier de l'Université de Sherbrooke), Centre de Recherche, Sherbrooke, Quebec; Lena Galimova MD FRCPC, Section of Physical Medicine and Rehabilitation, University of Manitoba, Winnipeg, Manitoba; Gordon D Ko MD CCFP(EM) FRCPC FABPM, Sunnybrook Health Sciences Centre, University of Toronto, Toronto, Ontario**  
**WORKSHOP OBJECTIVE:**

The aim of this workshop is to provide participants with a review of fibromyalgia and the potential therapeutic benefit of cannabinoids in the treatment of the condition. The workshop will present and in-depth analysis of the neurophysiological mechanisms of fibromyalgia and their implications for clinical management, a review of the clinical trial evidence supporting the effectiveness and safety of cannabinoids in fibromyalgia treatment and case-based examples supporting the scientific and clinical evidence for the inclusion of cannabinoids in fibromyalgia treatment protocols.

#### Learning Objectives:

1. Develop a basic understanding of the neurophysiological rationale for the use of cannabinoids in fibromyalgia.
2. Effectively evaluate the risk-benefit ratio of cannabinoids in fibromyalgia treatment.
3. Implement an effective initiation and titration of cannabinoids required for the successful treatment of fibromyalgia through case-based learning.

### 32A

#### NEUROPHYSIOLOGICAL RATIONALE FOR CANNABINOIDS IN FIBROMYALGIA

**Stéphane Potvin PhD (physiology)**

**CHUS (Centre Hospitalier de l'Université de Sherbrooke), Centre de Recherche, Sherbrooke, Quebec**

**BRIEF DESCRIPTION:** Fibromyalgia is a complex chronic pain condition affecting 900,000 Canadians with women at least 4 times more likely than men to develop the condition (Arthritis Canada Website, 2008). Scientific evidence implicates several chemical pain mediators in the pathogenesis of fibromyalgia (Russell J, 1998). The neuropathophysiology of nociceptive and neuropathic pain will be outlined including mediators, neurotransmitters and neurological changes associated with both types of pain and how they relate to fibromyalgia. The neurophysiological role of cannabinoids in the modulation of chemical pain mediators is well established and an in-depth review of the evidence will be presented as it pertains to the efficacy of nociceptive and neuropathic pain analgesia associated with fibromyalgia. Research indicates that pain perception and response to analgesic interventions, specifically cannabinoids, differs between men and women and that sex hormones may account for these differences (Marchand S. et al., 2002, 2008). A review of the evidence, its potential role in the increased incidence of fibromyalgia in women and the implication for treatment options will be discussed. Proof of widespread pain in fibromyalgia and the connection to a deficit in endogenous pain inhibition (Marchand S et al., 2005) will be presented. The endocannabinoid system plays an important role in the body's endogenous pain network and this system will be explained, including cannabinoid receptor physiology and mechanism of action. A review of the sites and mechanism of action of exogenous cannabinoids as it relates to fibromyalgia pharmacotherapy will also be discussed.

### 32B

#### SAFETY AND RISK-BENEFIT RATIO OF CANNABINOIDS IN FIBROMYALGIA

**Lena Galimova MD FRCPC**

**Section of Physical Medicine and Rehabilitation, University of Manitoba, Winnipeg, Manitoba**

**BRIEF DESCRIPTION:** Cannabis has been used throughout history for medicinal uses and with the introduction of pharmaceutical alternatives, the application of cannabinoids in clinical practice continues to expand. Recent advances in the science of cannabinoids, combined with clinical efficacy, have resulted in an increase in the number of clinical trials pertaining to cannabinoids and fibromyalgia. Preliminary studies indicate that cannabinoids may provide significant pain relief and quality of life improvement for fibromyalgia patients (Skrabek et al., 2008). A review of the clinical trial research conducted by the presenter and others with respect to the efficacy of cannabinoids in fibromyalgia treatment will be presented. With this increased utilization comes a need for an appraisal of the risk-benefit ratio of cannabinoids to ensure their proper clinical application and the safety of patients. The presentation will focus on current research regarding the long-term safety of cannabinoids and their abuse and addiction potential. Information will also be provided concerning the most common adverse events reported in the clinical trials and their implications for the adoption of cannabinoids in the management of fibromyalgia.

### 32C

#### INTEGRATION OF CANNABINOIDS INTO CLINICAL PRACTICE BASED ON CURRENT RESEARCH AND CASE-BASED LEARNING

**Gordon D Ko MD CCFP(EM) FRCPC FABPM**

**Sunnybrook Health Sciences Centre, University of Toronto, Toronto, Ontario**

**BRIEF DESCRIPTION:** This presentation will provide case-based support for the scientific and clinical rationale of the inclusion of cannabinoid therapy in the treatment of fibromyalgia. A review of the available cannabinoids and their clinical application will be discussed. A description of

the current pain treatment algorithms as they relate to fibromyalgia will be presented outlining the most appropriate time to employ the various treatment options. The case presentations will focus on initiation and titration of cannabinoids, successful outcome measures and prevalence/management of side effects.

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## POSTERS FRIDAY MAY 29 AND SATURDAY MAY 30, 2009

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### P1

#### **TAPENTADOL IMMEDIATE RELEASE COMPARED WITH OXYCODONE IMMEDIATE RELEASE FOR THE RELIEF OF MODERATE-TO-SEVERE PAIN IN PATIENTS WITH END STAGE JOINT DISEASE**

**Marc Afilalo MD MCFP(EM) FACEP CSPQ FRCPC(C), SMBD-Jewish General Hospital, Montreal, Quebec; Charles Oh MD, Johnson & Johnson Pharmaceutical Research and Development; Akiko Okamoto ScD, Johnson & Johnson Pharmaceutical Research and Development; Ilse Van Hove MSc, Johnson & Johnson Pharmaceutical Research and Development, Titusville, New Jersey, United States; Jens-Ulrich Stegmann MD, Research and Development, Grünenthal GmbH, Aachen, Germany; David Upmalis MD, Johnson & Johnson Pharmaceutical Research and Development, Titusville, New Jersey, United States**

**AIM:** Tapentadol is a novel analgesic in a single molecule with a dual mode of action:  $\mu$ -opioid receptor agonism and norepinephrine reuptake inhibition. The efficacy of tapentadol immediate release (IR) was studied in a double-blind, randomized, placebo-controlled, multicenter trial of patients with moderate-to-severe pain from end-stage joint disease.

**METHODS:** A total of 666 patients, randomized 1:1:1:1, received an oral dose of tapentadol IR 50 mg, tapentadol IR 75 mg, oxycodone IR 10 mg, or placebo (every 4-6 hours, maximum 6 doses/day).

**RESULTS:** Statistically significant improvements in pain intensity compared with placebo as measured by the primary endpoint, the sum of pain intensity difference over 5 days, were demonstrated by tapentadol IR and oxycodone IR treatment groups ( $P < 0.001$ ). Prespecified comparisons of efficacy indicated that both tapentadol IR dosing regimens (50 and 75 mg every 4-6 hours) were non-inferior to oxycodone IR 10 mg. The most common adverse events were nausea, dizziness, and vomiting. Lower incidences of nausea (tapentadol IR,  $\leq 21\%$ ; oxycodone IR, 41%), vomiting (tapentadol IR,  $\leq 14\%$ ; oxycodone IR, 34%), and constipation (tapentadol IR,  $\leq 7\%$ ; oxycodone IR, 26%) were associated with both doses of tapentadol IR treatment, compared with oxycodone IR 10 mg. Subsequent analyses of the odds ratio and 95% confidence intervals (CI) showed that tapentadol IR 50 and 75 mg have significantly lower odds for the incidence of composite nausea/vomiting and constipation compared with oxycodone IR 10 mg (odds ratios [95% CI]: nausea/vomiting - tapentadol IR 50 mg, 0.21 [0.128, 0.339]; tapentadol IR 75 mg, 0.32 [0.204, 0.501]; constipation - tapentadol IR 50 mg, 0.13 [0.057, 0.302]; tapentadol IR 75 mg, 0.20 [0.098, 0.398]).

**CONCLUSIONS:** These findings indicate that tapentadol IR 50 and 75 mg were comparable to oxycodone IR 10 mg but with an improved gastrointestinal tolerability.

### P2

#### **ATTENTIONAL FUNCTIONING IN MILD TRAUMATIC BRAIN INJURY PATIENTS WITH CHRONIC PAIN SYMPTOMATOLOGY**

**Beaupré Michelle BSc, Department of psychology; McKerral Michelle PhD, Department of psychology, Université de Montréal and CRIR-CRLB, Montreal, Quebec**

**AIM:** Using a pictorial version of the Stroop task, the present study aimed to demonstrate how chronic pain (CP) contributes to the executive function deficits observed in mTBI patients suffering from CP. We also sought to determine if stimuli representing pain had a greater impact on attentional executive functioning than stimuli reflecting an emotion such as

anger or than stimuli perceived as neutral, in patients suffering from mTBI and also from CP, in mTBI patients without CP, as well as in normal controls.

**METHODS:** Mild traumatic brain injury (mTBI) patients frequently present co-morbid chronic pain (CP) conditions. Prior research has demonstrated that taken individually, mTBI as well as CP impact the executive component of the attentional system. A stimulus-driven approach has been adopted by some, who have examined how material perceived by CP patients as threatening (i.e. stimuli representing pain) impacts the executive component. Results of studies making use of the emotional Stroop task, a variant form of the Stroop task which plays on word meaning, suggest that the executive attentional system less efficiently processes stimuli that an individual perceives as threatening. A pictorial version of the Stroop task was designed to further investigate this.

**RESULTS:** Results obtained in both groups of mTBI subjects show a significant ( $p < 0.05$ ) increase in reaction time when compared to controls. Furthermore, mTBI subjects suffering from CP are slower than mTBI patients without CP as well as normal controls, when images representing pain or anger are involved, in comparison to neutral conditions.

**CONCLUSIONS:** In conclusion, our results indicate that CP contributes to poor attentional management in mTBI patients. The modified Stroop pictorial paradigm used is efficient in demonstrating this deficit.

### P3

#### **RANDOMIZED CONTROLLED TRIAL COMPARING PUDENDAL NERVE BLOCK UNDER ULTRASOUND AND FLUOROSCOPIC GUIDANCE**

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**AIM:** To compare the effectiveness of fluoroscopic and ultrasonographic guided techniques to perform transgluteal pudendal nerve blockade for chronic pelvic pain patients.

**METHODS:** Patients receiving bilateral pudendal nerve blocks were randomized to receive either fluoroscopic (Group F) or ultrasonographic (Group US) guided blockade for one side. The contralateral side received the alternative imaging modality. Once needle position was deemed satisfactory, 4 mL of 0.5% bupivacaine and 40 mg of Depo-Medrol was injected around each pudendal nerve. The primary endpoint was the effectiveness of the block as assessed by decreased sensation to cold and pinprick in the perineal area in each of the four quadrants. Secondary endpoints included time for completion of the procedure, time to visualize key landmarks, and side effects.

**RESULTS:** Ten patients (10 fluoroscopic and 10 ultrasound guided blocks) have been included for interim analysis. Two patients in Group F did not develop any sensory block compared with none in Group US although the result was not statistically significant. US guidance takes significantly longer time to perform when compared with fluoroscopic technique ( $447 \pm 50$  vs.  $193 \pm 15$  sec;  $P < 0.001$ ). The incidence of developing numbness in a sciatic distribution is 30% and 10% in Group F and Group US, respectively. Side effects are minimal with no significant difference between either modality.

**CONCLUSIONS:** The use of ultrasound imaging for pudendal nerve blockade is as effective as using fluoroscopy. The ultrasonographic approach takes longer to accomplish but provides greater anatomic detail, avoids exposure to ionizing radiation and potentially reduces sciatic nerve involvement.

**P4**

**A COMPARISON OF THE EFFICACY OF NABILONE AND GABAPENTIN IN THE CONTROL OF NEUROPATHIC PAIN AND THEIR MODIFICATION OF OTHER QUALITY OF LIFE INDICIA**

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**AIM:** Neuropathic pain (NeP) is a common problem in individuals suffering from Peripheral Neuropathy (PN) regardless of the etiology. The aim of this study was to compare the efficacy of Nabilone as monotherapy or add-on treatment with a commonly used medication, Gabapentin for the treatment of NeP. We hypothesized that both treatments would better improve pain and associated features as compared to a non-treatment group.

**METHODS:** We prospectively evaluated patients with PN and related NeP in a tertiary care neuromuscular clinic. Patients were given the opportunity to start monotherapy (Nabilone or Gabapentin) or add one of these two medications to their existing treatment regimen. Neuropathy severity was analyzed using the Toronto Clinical neuropathy score (TCNS). Baseline data was collected including pain quantity and quality (Visual analogue score (VAS), Brief Pain Inventory (BPI)) and quality of life assessments were completed (EuroQol 5 domains (EQ-5D), Medical outcomes Sleep Study Scale (MOSSS), Hospital Anxiety and Depression scale (HADS) and Short Form 36 Health Survey (SF-36)). Patients were reassessed at three and six month intervals with respect to drug side effects, efficacy and quality of life.

**RESULTS:** Treatment groups were comparable prior to initiation of new pharmacotherapy. There were improvements in VAS pain and SF-36 scores amongst all treatment groups. Patients on Nabilone monotherapy had improved sleep scores. No serious side-effects occurred in any treatment group.

**CONCLUSIONS:** NeP poses a significant functional burden in PN patients. Nabilone as monotherapy or as add-on treatment for NeP improves pain scores and quality of life. The results observed with Nabilone are comparable to Gabapentin, a first line agent commonly used in the treatment of NeP. Further comparison studies of pharmacological therapies in PN may be valuable.

**P5**

**USE OF A SYNTHETIC CANNABINOID IN THE IN-PATIENT WITH CHRONIC NON-CANCER PAIN**

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**AIM:** To present the findings of a multi-site, retrospective review of our clinical experience using a synthetic cannabinoid in the pain management of 46 in-hospital chronic non-cancer pain patients.

**METHODS:** The hospital based Chronic Pain Consult Service under the Regional Pain Program in Calgary was created in 2006 and has had 1,333 patient visits from January 1 to September 30, 2008 at three adult acute care hospitals. Extensive baseline demographics were collected including gender, pain diagnosis, pain intensity scores, prior use of multiple analgesics, and associated symptoms. Pain intensity was reported using numeric rating scales (0 = no pain at all; 10 = worst pain imaginable). Pain scores were obtained at baseline (pre-treatment with nabilone) and subsequent visits (post-treatment with nabilone). Average baseline and final NRS scores were compared using paired t-tests. The above data were collected from hospital charts and patient self-report and entered into the database.

**RESULTS:** Forty-six chronic non-cancer pain patients were identified who had been prescribed nabilone over a 9-month period. Initial therapy with nabilone started at a dose of 0.5mg qhs and was titrated to a range between 1.0mg qid – 2.0mg bid. Sixteen (35%) patients reported subjective overall improvement and reduced pain intensity. Pain intensity was reduced by 30% overall. Some beneficial effects included increased appetite, improved sleep, and opioid-sparing effect.

**CONCLUSIONS:** Nabilone may be a useful adjunct medication in the management of a complex chronic non-cancer pain patient and should be further examined in randomized controlled trials. This research has prompted a multi-site, prospective study.

**P6**

**A STRUCTURED REVIEW OF THE EVIDENCE FOR PACING AS A CHRONIC PAIN INTERVENTION**

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**AIM:** Historically the concept of pacing as an intervention has roots in the rehabilitation literature (1,2). Rehabilitation has a theoretical grounding directly addressing people's need for empowerment to assume active self-management of their health and control over their living environment. Within the restorative framework of rehabilitation the term pacing was applied to represent a process of educating patients about how to budget their energy, alternating work with rest to "pace" themselves. This approach to facilitate self-management was applied with most regularity to pain management across a range of chronic health conditions. More recently "pacing" as an intervention strategy has appeared in other health-care professions' literature and especially in publications related to management of chronic pain conditions.

Nielson et al. (3) have stressed that "pacing is a poorly understood concept for which there are no available measures" (p. 111). This statement was the impetus behind the study. Anecdotally there were concerns about whether the intervention represented by "pacing" was consistently understood across the disciplines involved in chronic pain management.

The aim of this poster is to report the findings of a structured review of the literature examining the strength of the evidence for pacing as an intervention for people with chronic pain.

**METHODS:** The McMaster Critical Review guidelines (4) were followed, relevant electronic databases were searched, and experts in the field contacted.

**RESULTS:** The search for outcome studies specific to pacing as an intervention for chronic pain yielded no relevant studies for review. A number of the publications proved to be theoretical in nature and, of the articles reporting primary research, there were no studies done specifically examining the use and outcomes of pacing as a defined clinical intervention.

**CONCLUSIONS:** The lack of consensus for pacing has implications for both practice and research. There is growing consensus among healthcare professionals that there is a need for a clear definition of pacing and further research (5,6). For research purposes, a "pacing" definition would allow studies to be more transparently designed and ultimately, replicated. However, it will be essential to clearly state which concept of pacing is being operationalised in any research. Without a clear working definition and conceptualisation of "pacing" this important work will not be possible.

Because there is no clear definition of what pacing is, its effectiveness as an intervention for chronic pain remains untested. The findings presented in this poster are a necessary first step to build a reliable justification for why this work is, and will be increasingly, important.

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## P7

**SICKLING IS A PAIN MANAGEMENT NIGHTMARE**

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**BACKGROUND:** Pain management for patients in a Sick Cell crisis is a challenge. The interaction of the effects of the disease itself with side effects of treatment creates a dynamic and potentially threatening situation.

**AIM:** The aim of this presentation is to discuss pain management needs in patients with Sick Cell Disease (SCD). In particular, the complex interactions between side effects of treatment and manifestations of the disease itself will be discussed. Threats to patient safety will be identified, with opportunities for improvement of care, particularly those arising out of Root Cause Analysis (RCA) of critical events occurring on an Acute Pain Service (APS).

**METHODS:** A case study of a pediatric patient admitted to hospital for treatment of their sickle cell crisis will be presented. Recommendations for management of pain in patients with SCD will be discussed including the role of opiates, anti-inflammatory drugs and other adjuncts. Timely assessment and treatment will be discussed.

**RESULTS:** In this case the clinical presentation of an unusual but recognized complication of SCD (epidural hemorrhage) was confused with the anticipated side effect of sedation from parenteral opiates. Systemic issues contributing to the development of a critical event in this patient will be explored.

**CONCLUSIONS:** A better understanding of the role of patient assessment in this situation might have led to earlier recognition of the intracerebral event. However systemic factors may have exacerbated the complexity of the situation.

## P8

**A COMPARISON OF NURSE AND MOTHER ATTITUDES REGARDING MATERNAL SKIN-TO-SKIN CARE AS A PAIN RELIEVING STRATEGY DURING HEEL LANCE FOR PRETERM**

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**BACKGROUND:** Maternal skin-to-skin care during heelstick reduces infant pain response; however its use as a pain relieving strategy in the NICU is rarely implemented.

**AIM:** The purpose of this study was to compare mothers and nurses attitudes about providing skin-to-skin care during a routine heel lance in the NICU.

**METHODS:** Mothers of preterm infants participating in a multicentered randomized cross-over trial of skin-to-skin care to reduce pain during heel lance were interviewed and neonatal nurses from the same NICUs were asked to complete a questionnaire related to their attitudes of instituting skin-to-skin care (SSC) as a routine pain relieving strategy. Both interview and questionnaire focused on three issues: how they felt about SSC during heelstick, would they do it again, and would they recommend it to others.

**RESULTS:** All of the mothers (n=173) completed the interview. 80% of the mothers reported positive feelings about providing maternal SSC during heelstick, 99% said they would do it again and recommend it to others. 127 of the 250 nurses approached (51%) completed the questionnaire. 87% felt that SSC during heelstick was beneficial for the neonate. 90% reported that they would be willing to help mothers to use this intervention but 59% of those who responded positively would do so under very specific conditions. 61% would not recommend its routine use to others. Nurses identified maternal stress and possible maternal reluctance to provide SSC as a barrier to implementing SSC as part of their care. 34% felt that SSC was stressful to mothers. 32% were unsure if they would routinely assist mothers with SSC and 29% would not routinely recommend its use due to potential maternal stress.

**CONCLUSIONS:** Nurses concern regarding maternal stress and reluctance to provide SSC during heelstick appear to be unwarranted.

## P9

**PSYCHOSOCIAL CORRELATES OF PACING IN INDIVIDUALS WITH PERSISTENT PAIN**

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**AIM:** Although pacing is considered an important strategy for managing ongoing pain, limited support for its effectiveness has been found. Evaluating the benefits of pacing may require identifying individuals who report both high and sustained use of pacing. The present study examined the benefits of pacing by comparing the psychosocial functioning of individuals who reported continued use of high levels of pacing for several months after treatment with that of individuals who reported lower levels of pacing.

**METHODS:** One hundred and three individuals with persistent pain attending a follow-up session three months after treatment completed measures of pacing, pain intensity, affect, perceived pain control, and disability. A tertiary split of scores on the measure of pacing identified 32 individuals who reported low levels of pacing and 37 individuals who reported high levels of pacing. The responses of these groups on measures of psychosocial functioning were compared.

**RESULTS:** High pacers reported less depressive symptomatology and anxiety, and greater perceived control over pain but did not differ from low pacers with respect to perceived pain-related disability. The two groups differed with respect to their initial use of pacing with high pacers reporting using more pacing before treatment. Following treatment, high pacers further increased their use of pacing while no change was observed for low pacers.

**CONCLUSIONS:** The present results suggest that greater use of pacing is associated with better affect and greater perceived control over pain. Treatment may enable individuals who already use pacing to further increase their use of pacing and to maintain its use after treatment.

## P10

**THE NOVA SCOTIA CHRONIC PAIN COLLABORATIVE CARE NETWORK BASELINE PRIMARY CARE PROVIDER DATA**

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**AIM:** The Nova Scotia Chronic Pain Collaborative Care Network (NSCPCCN) is a pilot project recently launched in the South Shore District Health Authority. This mentor-mentee network of pain physicians and primary care practitioners (PCP's) is designed to increase capacity for chronic pain management.

**METHODS:** Primary care practitioners in the SSDHA were invited to join the NSCPCCN. Twenty two PCP's were recruited and separated into two groups of 11 based on community and practice groups. Both groups received a CME program and one group was randomized to receive access to a mentor physician for the duration of the pilot project. In order to determine the impact of chronic pain on the practice of the PCP, a brief questionnaire was administered to members of both groups at the outset of the pilot project.

**RESULTS:** Twenty two PCP's were enrolled in the NSCPCCN. Response rate to the questionnaire was 77%. The average number of patients presenting per day with chronic pain was 36, and average time per patient was recorded as 20 minutes. An average 12.8 minutes was considered to be non-compensated. Physician comfort levels for chronic pain management and opiate prescribing on a Likert scale were 2.7/5 and 3.2/5 respectively. An average of 6 patients per month were screened for aberrant opiate behavior and 3 are suspected of aberrant opiate behavior.

**CONCLUSIONS:** PCP's report a large variation in the number of patients presenting with chronic pain. Chronic pain management in primary care provides significant challenges for the provider.

## P11

## EFFECTS OF PURINERGIC RECEPTOR ANTAGONIST ON CENTRAL SENSITIZATION IN TRIGEMINAL SUBNUCLEUS CAUDALIS

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**AIM:** There are 7 known P2XR subtypes in the CNS and we have shown that the broad spectrum P2XR antagonist pyridoxal-phosphate-6-azophenyl-2,4-disulphonic acid (PPADS, which blocks P2X<sub>1,3,2/3,5</sub> and 7 R subtypes) can totally block the mustard oil (MO)-induced central sensitization (CS) in trigeminal subnucleus caudalis (Vc), but that the P2X<sub>1,3,2/3,4,6,2/6R</sub> antagonist 2',3'-O-(2,4,6-trinitrophenyl)-ATP (TNP-ATP) only partially blocks CS in Vc [1]. These findings raise the possibility that P2X<sub>7R</sub> may be involved in CS. Since the broad spectrum P2XR antagonist suramin at a moderate dose does not block P2X<sub>7R</sub> but blocks other P2XR subtypes, the aim of this study was to test if intrathecal (i.t.) superfusion of suramin attenuates but does not eliminate the MO-induced CS in Vc.

**METHODS:** In urethane/alpha-chloralose-anesthetized adult male rats, single neuronal activity was recorded in nociceptive-specific (NS) neurons in Vc. The mechanoreceptive field (RF) size, mechanical activation threshold, and pressure/pinch-evoked responses were assessed at baseline. Then suramin (50-100 microM) or phosphate-buffered saline (PBS at pH 4.0, as control) was continuously superfused (i.t., 0.6 ml/hr) onto Vc, and MO was applied to the first maxillary molar pulp; assessments of neuronal properties were made at 10 min intervals.

**RESULTS:** After PBS pretreatment (control group), MO application produced prolonged and significant neuroplastic changes reflecting CS, i.e., increases in neuronal RF size, pinch/pressure-evoked responses and a decrease in threshold (all  $P < 0.001$ ,  $n = 6$ ). However, following pretreatment with suramin, MO produced only moderate although still significant changes in RF size, threshold and pinch/pressure-evoked responses (all  $P < 0.01$ ,  $n = 6$ ) but importantly these changes were also significantly different from those in the PBS group ( $P = 0.001$ , 0.05 and 0.005, respectively; 2-way ANOVA).

**CONCLUSIONS:** In view of these findings and the P2X subtypes on which these P2X antagonists act, these data suggest that P2X<sub>7R</sub> may be involved in the initiation of CS in nociceptive neurons.

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## FOOTNOTES/REFERENCES:

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## P12

## PREVALENCE, CHARACTERISTICS, AND RISK FACTORS OF PERSISTENT POST-OPERATIVE PAIN AFTER CARDIAC SURGERY

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**AIM:** Recent studies have demonstrated that a significant number of cardiac surgery patients develop persistent pain postoperatively (14% to 56%). This study aimed to identify risk factors involved in the transition of acute to persistent pain after cardiac surgery (CABG and/or valve replacement).

**METHODS:** A prospective cohort design was used to follow patients undergoing elective surgery in 4 cardiovascular centres (Montreal, Toronto, Quebec City, Halifax). Data were collected at baseline pre-surgery, post-surgery in week one (24, 48, 72 hours and 7 days), and at 3, 6, 12 and 24 months using structured face-to-face and telephone interviews. Standardized measures assessed: 1) pain intensity and related activity interference, 2) psychological well-being and pain coping skills, and 3) health-related quality of life.

**RESULTS:** Preliminary analysis ( $N = 1226$ ; Mean age: 61.4+13.9 y, % M/F: 79/21%) indicate that 75% patients had moderate to severe pain ( $\geq 4/10$ ) at 2 days that remained for 54% at 7 days. At 3 months, 40% reported persistent non-anginal pain that was moderate-severe for 38%, and interfered with usual activities. At 6 months, these percentages were 22% and 32% respectively. A multiple logistic regression analysis revealed that younger age, prior chronic pain history, and high pain levels in the early postoperative period were significant predictors of persistent pain at 6 months.

**CONCLUSIONS:** The prevalence, severity and impact of persistent pain after cardiac surgery should not be underestimated. Whether more aggressive analgesic treatment in the first few days after surgery can prevent the development of persistent pain certainly merits further investigation.

## P13

## USE OF THE CANNABINOID NABILONE FOR ANALGESIA AND THE PROMOTION OF SLEEP IN CHRONIC, NON-MALIGNANT PAIN PATIENTS: A PLACEBO-CONTROLLED, RANDOMIZED, CROSSOVER PILOT STUDY

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**AIM:** Evidence suggests that cannabinoids can alleviate pain and also improve sleep.

**OBJECTIVES:** In 11 patients with chronic, non-malignant pain and

insomnia, (1) to evaluate the effect of the synthetic cannabinoid nabilone (1mg HS) on patient-reported pain measures; (2) to investigate if improvements in sleep occur; and (3) to determine if nabilone treatment results in daytime sleepiness.

**METHODS:** This is a 4-week double-blinded, placebo-controlled, randomized, crossover clinical pilot investigation. At the start of the study and at the end of the four-weeks, questionnaires for pain (McGill Pain Questionnaire – MPQ and Visual Analogue Scale for pain – VASp) were administered and overnight sleep assessment and tests of daytime sleepiness were conducted.

**RESULTS:** There were no serious adverse events or side-effects requiring withdrawal of nabilone treatment. All 11 study patients had a significant reduction in pain symptoms on the MPQ ( $p < 0.02$ ) and VASp ( $p < 0.001$ ) with nabilone treatment. Nabilone did not result in daytime sleepiness. Sleep improvements were less robust but were consistent in 5 of the 11 patients. These 5 patients all had a diagnosis of fibromyalgia and received ongoing prescriptions for nabilone (1mg HS). In clinical follow-up interview one year later all 5 patients on nabilone treatment reported continued pain relief, good sleep and better quality of life.

**CONCLUSIONS:** Nabilone (1mg HS) decreased pain symptoms in all study patients. Despite its clear analgesic effect, nabilone did not cause daytime sleepiness. Those study patients receiving prescriptions for nabilone reported sustained pain relief and good sleep quality one year later.

#### P14

##### ADDING A SINGLE DOSE OF GABAPENTIN TO A MULTIMODAL REGIONAL ANALGESIA REGIMEN DOES NOT REDUCE OPIOID CONSUMPTION OR ACUTE PAIN AFTER TOTAL HIP ARTHROPLASTY

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**AIM:** Total hip arthroplasty (THA) is associated with significant pain and decreased mobility in the immediate postoperative period. Gabapentin (GPN) has been shown to be effective in reducing postoperative pain, opioid consumption and accelerating functional recovery within 48h of anterior cruciate ligament repair, but its effects on THA with regional anesthesia are unclear. This study was designed to determine whether 1) gabapentin administration reduces pain and opioid use after THA using a multimodal analgesic regimen and spinal anesthesia; 2) preoperative administration of gabapentin is more effective than postoperative administration.

**METHODS:** After obtaining REB approval and informed consent, 118 patients were enrolled in a double-blinded randomized controlled study. All patients received acetaminophen 1000 mg po, celecoxib 400 mg po, and dexamethasone 8 mg iv, 1-2 hours preoperatively. Patients were randomly assigned to one of three treatment groups (G1: Placebo/Placebo; G2: GPN/Placebo; G3: Placebo/GPN). Patients received po gabapentin 600 mg (G2) or placebo (G1 & G3) 2 hours prior to surgery. All patients had spinal anesthesia with 15 mg of 5 mg/mL bupivacaine and 10 µg of fentanyl. In the PACU, patients received po gabapentin 600 mg (G3) or placebo (G1 & G2). On the ward, patients received acetaminophen 1000 mg po q6h, celecoxib 200 mg po q12h, and a morphine PCA device for 48 hrs with instructions to maintain their pain scores  $< 4/10$ . On postoperative day 1 patients were asked to rate their pain while moving from lying to sitting.

**RESULTS:** 114 patients (G1 (n=38), G2 (n=38), G3 (n=38)) completed the study. Cumulative morphine consumption at 48 hours post-op was not significantly different among the groups. Pain scores were also not different at rest or with movement while patients were on the PCA pump. Pain

scores were similar between groups on POD1 when asked to move from lying to sitting. There was no difference in the incidence of sedation, nausea, vomiting, pruritus and dizziness among the three groups (all  $p > 0.05$ ).

**CONCLUSIONS:** A single 600 mg dose of gabapentin whether given preoperatively or postoperatively does not reduce morphine consumption or pain scores at rest or with rehabilitation within the context of a robust multimodal analgesia regimen. Further studies need to be performed in which gabapentin is continued into the postoperative period.

**FOOTNOTES/REFERENCES:**

Anesth Analg 2005;100:1394-9

#### P15

##### THE NOVA SCOTIA CHRONIC PAIN COLLABORATIVE CARE NETWORK AND MEDICAL MENTORING FOR ADDICTIONS AND PAIN: A COMPARISON OF TWO MENTOR-MENTEE NETWORKS FOR THE MANAGEMENT OF CHRONIC PAIN

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**AIM:** Chronic pain affects between 20-30% of Canadians (1). Ensuring timely access to pain management has become increasingly difficult (2). The Nova Scotia Chronic Pain Collaborative Care Network (NSCPCCN) and the Medical Mentoring for Addictions and Pain (MMAP) are innovative programs designed to increase capacity for pain management by through a mentor-mentee network between Primary Care Providers (PCP's) and pain specialists.

**METHODS:** The NSCPCCN has been launched as a pilot project in the South Shore District Health Authority in Nova Scotia. The MMAP has been launched over a wide geographic area of Ontario. We compare the organizational structures, implementation plans, stakeholder involvement, financial considerations and research development of two novel chronic pain management programs.

**RESULTS:** We report the effect factors influencing the development of mentor-mentee networks for the management of chronic pain in two provinces. Factors include distribution of health care resources, availability of mentors, experience with such networks, and the method of funding. The division of health care resources into District Health Authorities in Nova Scotia is also a factor. Research is a key focus in the NSCPCCN and clinical management is the primary focus of the MMAP.

**CONCLUSIONS:** Mentor-mentee networks are an emerging paradigm for the management of health care in an environment of finite resources. These capacity building mechanisms may improve the care of persons with chronic pain in the community. Sharing information between programs may optimize the development of these networks.

**FOOTNOTES/REFERENCES:**

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#### P16

##### PAIN MANAGEMENT NURSING ROLES ACROSS CANADA

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**AIM:** This project aimed to examine current pain management nursing role descriptions and to develop templates for use as resources for emerging roles across the country.

## Abstracts

**METHODS:** Nurse leaders<sup>1</sup>, chosen to represent all provinces across Canada, met at a National Projects Strategy Meeting in conjunction with the CPS Scientific meeting on May 23, 2007. Working groups from that meeting developed questions for a survey subsequently circulated to CPS members. One question asked about the availability of organization's pain nursing role descriptions. Data from respondents who had job descriptions and were willing to share them are included here.

**RESULTS:** Of the 17 responses with designated nurse pain roles, 8 were able to share their job descriptions. Role titles identified included Nurse Clinician, Nurse Practitioner, and Clinical Nurse Specialist. All titles were reviewed by a group of Advanced Practice Nurses related to national and provincial regulations regarding protected terms of "Nurse Practitioner" and "Clinical Nurse Specialist". Educational preparations required or recommended for each of the roles was also reviewed. Next, templates were developed for each of the role descriptions.

**CONCLUSIONS:** The templates developed in this project will be available on the Canadian Pain Society Nursing Issues Special Interest Group webpage to assist organizations in developing specific nursing roles for pain management.

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## P17 THE RELATIONSHIPS BETWEEN MATERNAL EMOTIONAL AVAILABILITY AND MATERNAL SOOTHING BEHAVIORS DURING ROUTINE INFANT IMMUNIZATIONS

**Laila Din MA, York University; Rebecca Pillai Riddell PhD, York University, Hospital for Sick Children; Stuart Gordner MD, University of Toronto, Toronto, Ontario**

**AIM:** The goals of this study were to explore the relationships between a global index of maternal interactive behaviours and the frequency of maternal soothing behaviours during routine infant immunizations.

**METHODS:** Fifty-eight mothers (M=30.89 years old, SD=5.50 years) and their infants (M=9.12 months old, SD=4.09 months; range 3 to 18 months) were recruited from three pediatrician clinics in Toronto and videotaped during routine infant immunizations. The global index of maternal interactive behaviours was coded using the Emotional Availability Scales (EAS; Biringen, 2000), which includes four dimensions of maternal interactive behaviour (sensitivity, structuring, non-intrusiveness and non-hostility) and a composite score. Specific maternal soothing behaviours coded during the first minute post immunization using the Parent Regulatory Behaviour Categories (PRBC; Jahromi, Putnam & Stifter, 2004) and included a variety of behaviours such as affection, touching, holding, rocking, caretaking, vocalizations, distraction and pacifying. In addition, soothing behaviours were further categorized as proximal (affection, touching, holding and rocking) vs. distal (vocalizations, distraction, pacifying, and caretaking).

**RESULTS:** Exploratory correlations revealed that mothers who were qualified as being more sensitive and emotionally available used more vocalizations to soothe their infants after the immunization. In addition, mothers who were judged to be more structuring displayed a higher frequency of affection and vocalizations, and were more likely to use proximal soothing behaviours.

**CONCLUSIONS:** These results suggest that several dimensions of a global measure of maternal interactive behaviours (maternal emotional availability) are linked to the frequency and type of soothing strategies mothers use during routine infant immunizations.

## P18

### A COMPARISON OF THE EFFICACY OF VENLAFAXINE AND GABAPENTIN IN THE CONTROL OF NEUROPATHIC PAIN AND THEIR MODIFICATION OF OTHER QUALITY OF LIFE INDICIA

**William A Fardley BSc LLB, University of Calgary; Cory Toth MD, University of Calgary, Calgary, Alberta**

**AIM:** Although many pharmacological agents are used in the therapy of neuropathic pain (NeP) due to polyneuropathy (PN), there are few studies comparing these agents. We examined two pharmacological agents, venlafaxine and gabapentin, used in the management of NeP amongst patients with PN. We hypothesized that both treatments would better improve pain and associated features as compared to a non-treatment group.

**METHODS:** We prospectively evaluated patients with PN and related NeP in a tertiary care neuromuscular clinic initiated on venlafaxine or gabapentin as monotherapy or add-on therapy with prospective follow-up after 3 and 6 months for quantity of NeP and associated features. We analyzed neuropathy severity (Toronto Clinical Neuropathy Score (TCNS)), pain quantity and quality (Visual Analogue Scale (VAS) score, Brief Pain Inventory (BPI)), quality of life (QoL) and health status measures (EuroQol 5 Domains (EQ-5D), Medical Outcomes Sleep Study Scale (MOSSS), Hospital Anxiety and Depression Scale (HADS) and Short Form 36 Health Survey (SF-36)).

**RESULTS:** Treatment groups were comparable prior to initiation of new pharmacotherapy. There were improvements in VAS pain and SF-36 scores amongst all treatment groups. Improvements in the HADS occurred in the venlafaxine monotherapy group, while and BPI scores improved in add-on venlafaxine recipient patients.

**CONCLUSIONS:** NeP poses a significant functional burden in PN patients. Although there were similar reductions in NeP for venlafaxine and gabapentin-treated patients, associated features of NeP were affected differently. Further comparison studies of pharmacological therapies in NeP may be valuable.

## P19

### FATHER KANGAROO CARE VERSUS MOTHER KANGAROO CARE: A PILOT PROJECT ON QUANTITATIVE AND QUALITATIVE MEASURES

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<sup>1</sup>McGill University; <sup>2</sup>Universite de Montreal, Montreal, Quebec;  
<sup>3</sup>IWK Health Centre, Halifax, Nova Scotia**

**AIMS:** To determine the feasibility of the research project on a pilot sample of 10 babies and find similarities or differences between Father Kangaroo Care and Mother Kangaroo Care on pain score, HRV and return to baseline for heart rate and oxygen saturation, also obtain father and mother's perceptions of the Kangaroo Care method during a heel lance.

**METHODS:** Crossover design, the 10 infants were placed in both the control group (maternal KC) and the treatment group (father's KC), the order of assignment randomized.

**MEASURES:** Pain measured with Premature Infant Pain Profile (PIPP), time for return to physiologic baseline measured as the preterm neonate's return to baseline HR and O<sub>2</sub> after the heel lance and HRV (lowF, highF, ratio lowF/highF) calculated during the heelstick. After the KC sessions, fathers and mothers were asked few questions related to their perceptions about doing KC during the heel lance procedure.

**RESULTS:** There was no difference between fathers and mothers for the PIPP (30s: *t*-test, .083, *p*=.936; 60s: .586, *p*=.572; 90s: -.532, *p*=.608), return to baseline (*t*=-.347, *p*=.737) and HRV (lowF: *t*=-1.092, *p*=.307; highF: *t*=-1.146, *p*=.285; ratio lowF/highF: *t*=-.471, *p*=.650). For qualitative data, half of the fathers and mothers reported positive feelings during the heelstick while in KC, the rest felt nervous or anxious and one mother reported a negative feeling, all fathers and mothers would do it again and would recommend it to other parents.

**CONCLUSIONS:** The feasibility is conclusive and the results are similar when fathers or mothers do KC during a heel lance.

## P20

**DO LEARNING STYLES VARY FROM ONE HEALTHCARE PROFESSIONAL TO ANOTHER?**

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**AIMS:** Physicians or other healthcare workers "may" not always develop and or deliver professional education in a manner consistent with the preferred style of learning of the participant. If program attendees present with different learning styles then addressing styles in a manner consistent with the preferred route of learning should lead to better knowledge translation outcomes. This survey sought to determine if differences do exist among various types of healthcare workers.

**METHODS:** The Index of Learning Styles (ILS) (Felder and Solomon, 1988) was designed to better understand students preferred style of learning, thus enabling educators to better tailor or prepare learning sessions. This survey was administered to healthcare professionals (physicians, nurses, pharmacists et al) attending "pain" education conferences in both Kingston and Hamilton Ontario. The responders completed the ILS and these results focus only on the active versus reflective component of the survey.

**RESULTS:** Physicians from both the Kingston and Hamilton areas demonstrated a higher preference for reflective style learning. Family Physicians from a previous control group however, scored completely opposite with a strong tendency towards active learning. Nurses from the Hamilton area demonstrated a much higher preference for active learning with fewer responders leaning towards reflective learning as their preferred route. All cohorts however, did present with both active and reflective learners.

**CONCLUSIONS:** With different types of preferred styles of learning demonstrated, those preparing learning sessions may wish to engage program attendees in a manner consistent with their preferred route of learning for that attendee. Knowing that differences exist between both the active and reflective styles of learning, educators may wish to include both active and reflective learning elements in their sessions. By including both reflective and active learning components educators are more likely to engage the learner in a positive environment leading to better outcomes.

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## P21

**CHANGES IN CHRONIC PELVIC PAIN FOLLOWING MASSAGE THERAPY**

**Cathy Fournier RMT BA (in progress), Mt Sinai Hospital, Sutherland-Chan School of Massage Therapy, Toronto; Paul Finch PhD, Conestoga College, Kitchener, Ontario**

**AIM:** This preliminary study was conducted to examine changes in chronic pelvic pain following massage therapy treatment.

**METHODS:** The study was a retrospective clinical audit of pain scores reported by clients attending a chronic pelvic pain specialty clinic rotation at Sutherland-Chan School of Massage Therapy in Toronto. Clients booked into the clinic all presented with chronic pelvic pain, which was assessed before and after each treatment.

**RESULTS:** A statistically significant decrease in pain was found when pre and post treatment pain scores were compared ( $t=8.94$ ;  $p < 0.005$ ).

**CONCLUSIONS:** Although further work is required, the results of this study suggest that massage therapy may decrease chronic pelvic pain, at least in the immediate post-treatment period. Thus, massage has the potential to reduce suffering associated with the condition, and may provide a viable treatment alternative for certain patients / clients.

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## P22

**INVESTIGATION OF FACTOR STRUCTURE DIFFERENCES IN FEAR OF PAIN AND PAIN-RELATED ANXIETY**

**Samantha Fuss MA (in progress), York University; Gabrielle Pagé MA (in progress), York University; Valery Kleiman PhD (in progress), York University; Joel Katz PhD, York University, Toronto, Ontario**

**AIM:** A recent factor analytic study of frequently used pain-related anxiety measures revealed a distinction between fear and anxiety constructs (Kleiman et al., 2007). All pain-related anxiety, but not fear based, scales loaded on a higher-order factor that the authors termed Sensitivity to Pain

## Abstracts

Traumatization (SPT). SPT is characterized as series of pain-related emotional and behavioral responses and states similar to those that typify Post-traumatic Stress Disorder. The present study examined this proposed factor-structure in an undergraduate student sample.

**METHODS:** The subscales of the Fear of Pain Questionnaire III (FPQ-III; severe, minor, and medical), Anxiety Sensitivity Index (ASI; physical, mental incapacitation, and social), Pain Anxiety Symptoms Scale (avoidance, fearful thinking, cognitive, and physiological responses), and the Pain Catastrophizing Scale (PCS; rumination, magnification, and helplessness) were completed by 68 undergraduate students. Velicer's MAP test and parallel analyses were used to determine the number of components to retain. Principal Axis Factoring followed by Promax rotation was used to examine underlying structure of the data.

**RESULTS:** Results showed a two-factor solution best fit the data. The first factor consisted of the subscales of the Pain Anxiety Symptoms Scale and the Pain Catastrophizing Scale, had an Eigenvalue of 5.10 and accounted for 35.7% of the variance. The second was composed of the subscales of the Fear of Pain Questionnaire and the Anxiety Sensitivity Index with the exception of the social subscale, which did not load on either factor. The second factor had an Eigenvalue of 2.16, and accounted for 12.7% of the variance.

**CONCLUSIONS:** The results lend partial support to the SPT construct. This preliminary study demonstrated a strong relationship between symptoms of anxiety sensitivity and fear of pain whereas symptoms of pain anxiety and pain catastrophizing were more strongly related. Investigations within different populations and with larger samples would permit further refinement of this construct.

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## P23

### NEUROPATHIC PAIN INTERVENTION WITH A SPECIALIZED MULTIDISCIPLINARY NEUROPATHIC PAIN CLINIC BENEFITS PAIN AND QUALITY OF LIFE

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**AIM:** Neuropathic pain (NeP) is a disabling condition which impairs quality of life and requires the use of multiple forms of therapeutic intervention. We hypothesized that the use of a specialized multidisciplinary NeP Clinic (NePC) would benefit measures of pain, mood disorder, sleep, and quality of life (QoL) in a population of NeP patients.

**METHODS:** We prospectively identified all NeP patients enrolled in a specialized NePC and performed analysis of pain quantity (Visual Analogue Scale (VAS) score, Neuropathic Pain Symptom Inventory (NPSI), Modified Brief Pain Inventory (MBPI)), QoL and health status measures (EuroQol 5 Domains (EQ-5D), Pain Treatment Satisfaction Scale (PTSS), Medical Outcomes Sleep Study Scale (MOSSS), Hospital Anxiety and Depression Scale (HADS) and Patient Global Impression of Change (PGIC)), at 0, 6 and 12 months of clinic enrollment.

**RESULTS:** Follow-up of all NePC patients revealed significant improvement in the EQ-5D VAS score, the VAS pain score, and an improved PGIC after 6 months, with significant consecutive improvements in the EQ-5D index scores after 6 and 12 months. No significant differences could be determined for the NPSI, MBPI, individual EQ-5D measures, PTSS, MOSSS, or HADS within this patient population after 12 months.

**CONCLUSIONS:** While NeP is often difficult to manage, a multidisciplinary NePC can provide improvement in overall pain severity and QoL for this patient population. Specialized clinics for NeP can provide benefit and support for patients with this difficult-to-manage condition.

## P24

### BIOPSYCHOSOCIAL CORRELATES OF PAIN INTERFERENCE IN PATIENTS WITH ADVANCED CANCER

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**Camilla Zimmermann MD, University Health Network, University of Toronto; David Warr MD, University Health Network, University of Toronto; Malcolm Moore MD, University Health Network, University of Toronto; Frances A Shepherd MD, University Health Network, University of Toronto; Lucia Gagliese PhD, York University, University Health Network; University of Toronto, Toronto, Ontario**

**AIM:** Pain is among the most common and feared symptoms of cancer. Pain interference is the extent to which pain impacts on multiple domains of wellbeing. Factors associated with cancer pain interference have yet to be studied using multivariate methods. This study was designed to identify the biopsychosocial correlates of cancer pain interference in physical and psychological domains.

**METHODS:** Ninety-one participants attending outpatient clinics at Princess Margaret Hospital, Toronto, completed measures of pain quality (Short-Form McGill Pain Questionnaire 2; SF-MPQ-2), physical (Karnofsky Performance Index; KPI) and psychological (Center for Epidemiologic Studies-Depression Scale; CES-D) wellbeing and the Brief Pain Inventory (BPI) to assess pain severity and interference with physical (general activity, walking, normal work) and psychological (mood, relations with others, enjoyment of life, sleep) wellbeing. Demographic, disease, and treatment-related information were collected. Two hierarchical linear regression models were run to determine the biopsychosocial correlates of physical and psychological pain interference.

**RESULTS:** Participants were  $55.3 \pm 12.6$  years old and 63.7% were female. Mean BPI pain severity was  $3.88 \pm 2.13$ , with 63.6% reporting moderate-to-severe worst pain ( $\geq 5$ ). Mean BPI physical and psychological pain interference were  $5.19 \pm 2.66$  and  $4.79 \pm 2.56$ , respectively. Significant correlates of physical pain interference were BPI pain severity ( $p=0.03$ ) and KPI ( $p=0.02$ ). Significant correlates of psychological pain interference were BPI pain severity ( $p=0.001$ ), SF-MPQ-2 ( $p=0.01$ ), and CES-D ( $p=0.05$ ). Variance explained by each model was 52.8% ( $R^2=0.528$ ) and 66.9% ( $R^2=0.669$ ), respectively.

**CONCLUSIONS:** This study contributes to our growing understanding of the multidimensional impact of cancer pain. This knowledge may contribute to the development of psychosocial interventions to minimize the physical and psychological impact of cancer pain.

## P25

### MECHANICAL SENSITIZATION OF RAT FACIAL SKIN AFFERENT FIBERS FOLLOWING SUBCUTANEOUS INJECTION OF GLUTAMATE

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**AIM:** Administration of glutamate into the facial skin of humans evokes pain and induces a period of localized mechanical sensitization (1). The present study investigated whether this effect is due to a peripheral mechanism by examining the effect of subcutaneous injection of glutamate on the mechanical sensitivity of rat facial skin afferent fibers.

**METHODS:** Individual rat facial skin afferent fibers were recorded in the trigeminal ganglion of anesthetized Sprague Dawley rats of both sexes. The mechanical threshold (MT) of the afferent fibers at baseline and following subcutaneous injection of glutamate (0.01, 0.1, 1 M; 10  $\mu$ L) or control (phosphate buffered saline) was measured with an electronic von Frey hair. Subcutaneous injections were randomized and the investigator blinded to the content of the injection. Significant changes in MT were assessed with a 2-way repeated measures ANOVA with time and treatment as factors.

**RESULTS:** A total of 80 (40 in males, 40 in females) facial skin afferent fibers was recorded from 41 (22 males and 19 females) rats. The majority (n=78) of afferent fibers had conduction velocities in the A $\delta$  range (2-12 m/s). Subcutaneous injections of higher concentrations of glutamate (1, 0.1M) induced a significant mechanical sensitization of skin afferent fibers when compared to a lower concentration of glutamate (0.01M) or control.

**CONCLUSIONS:** Subcutaneous injection of glutamate mechanically sensitizes rat facial skin afferent fibers at the same concentration that induces mechanical sensitization in healthy human volunteers. These results suggest that subcutaneously injected glutamate acts by a peripheral mechanism to mechanically sensitize human facial skin.

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**P26**

**A RANDOMIZED, PLACEBO-CONTROLLED TRIAL OF PREGABALIN FOR THE TREATMENT OF PERIPHERAL NEUROPATHIC PAIN**

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**François Therrien PharmD, Pfizer Canada Inc; Jacinthe Lemay PhD, Pfizer Canada Inc, Montreal, Quebec**

**AIM:** This trial evaluated the efficacy of pregabalin in a broad range of peripheral neuropathic pain conditions including diabetic neuropathy (DPN), postherpetic neuralgia (PHN).

**METHODS:** In this 25 center trial, 256 patients with various peripheral neuropathic disorders progressed through a 4 week single-(patient)-blind pregabalin titration (SB phase) to maximally tolerated dose (MTD). Patients reporting 30% pain reduction were then randomized (double-blind) to placebo or pregabalin (1:1 ratio) for another 5 weeks (DB phase).

**RESULTS:** Of the 256 patients enrolled, 165 (65%) reported 30% pain reduction from baseline upon concluding the SB phase. Of 157 patients entering the subsequent DB phase, 69 completed the pregabalin arm and 62 the placebo arm. At the end of the DB phase, mean pain scores (0-10) were for pregabalin 2.90 (SD: 1.89) and for placebo 3.49 (1.43) ( $p=0.002$ ). Significant pregabalin-placebo differences were also observed within each of the two sub-groups of patients with ( $p=0.025$ ), and without ( $p=0.023$ ), a diagnosis of DPN-or-PHN. Significant pregabalin-placebo differences were also observed in sleep interference, anxiety, depression and other measures. The adverse events (AE) reported in this study are in-line with the known safety profile for pregabalin. AEs led to study withdrawal for 9 patients (SB phase), and for 2 versus 5 patients of the pregabalin versus placebo DB phase arms.

**CONCLUSIONS:** This trial supports previous evidence of pregabalin efficacy for DPN and PHN but further demonstrates pregabalin safety and efficacy in a broader range of non-DPN/non-PHN neuropathic pain conditions.

**P27**

**THE INFLUENCE OF PAIN AND SPOUSAL RESPONSES TO PAIN BEHAVIOUR ON QUALITY OF LIFE IN CHRONIC PELVIC PAIN SAMPLES**

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**AIM:** The study of spousal support in chronic pain is particularly

important as spousal support may diminish the negative effects of pain (i.e., the stress-buffering model of social support). With overlapping symptoms and similar psychosocial predictors, male chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS) and female interstitial cystitis/painful bladder syndrome (IC/PBS) are ideal pain syndromes for the study of gender differences in spousal support in chronic pain.

**METHODS:** Men diagnosed with CP/CPPS (N=198) were recruited from 7 N.A. (North American) tertiary care clinical centres (6 U.S., 1 Canada). Women diagnosed with IC/PBS (N=114) were recruited from 3 N.A. NIH-funded centers (1 Canada, 2 U.S.). Participants completed the McGill Pain Questionnaire (MPQ-SF), Multidimensional Pain Inventory (MPI), and the Medical Outcomes Study Short Form 12 (SF-12). Two moderated regression analyses were conducted for each sample, with the SF-12 subscales as dependent variables.

**RESULTS:** For men, only sensory and affective descriptors of pain negatively predicted the physical component subscale of the SF-12, while only affective descriptors of pain negatively predicted the mental subscale. For women, only distracting spouse responses to pain behaviour (DR) negatively predicted the mental subscale of the SF-12—none of the predictors significantly predicted the physical subscale of the SF-12. None of the interactions supporting a stress-buffering effect were found in either sample.

**CONCLUSIONS:** Results suggest that pain quality is important in QoL of men with CP/CPPS, and DR is important in QoL of women with IC/PBS, but no support is offered for a stress-buffering effect of support in these samples. Alternate models are discussed.

**P28**

**AUDIT OF AN ACUTE PAIN MANAGEMENT SERVICE: 2006-08**

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**AIM:** To describe the evolution of pain management on an Acute Pain Management Service (APMS) from 2005 to 2008.

**METHODS:** All clinical assessments on the APMS are recorded on a tablet computer at the bedside or on a desktop computer at the nursing station using the APMS software Version 4.1 developed for this purpose at Queen's University.

**RESULTS:** Between 2006/07 and 2007/08 the number of patients admitted to the APMS increased from 2,563 to 2,920 representing a 14% increase. During this same time the number of visits per patient decreased from 3.7 to 3.4. Clinical practice patterns also changed over the 2 year period. The use of continuous peripheral nerve blocks increased by 38%. The percentage of patients receiving single shot blocks (all types) increased by 86%, from 324 in 2006/07 to 604 in 2007/08. The most significant change in practice was the increased use of single shot posterior sciatic blocks from 12 in 2006/07 to 47 in 2007/08, representing a 292% increase. During that same time the use of single shot anterior sciatic blocks decreased from 45 to 25, representing a 20% decrease. Continuous epidural infusions also increased from 703 to 898 representing a 28% increase.

**CONCLUSIONS:** An electronic recording system on the APMS provides detailed data that is readily available for both administrative, clinical and research purposes. It is hypothesized that the changes in practice may have been due to a change in the acuity of patients, but are also a result of ongoing feedback to clinicians about how patients are responding to therapy. Future prospective studies are required to support these conclusions.

**P29**

**THE RELIEF STUDY: A REAL-LIFE, PROSPECTIVE, OBSERVATIONAL, MULTICENTRE STUDY OF HEALTH OUTCOMES IN THE TREATMENT OF PAINFUL DIABETIC NEUROPATHY AND POST-TRAUMATIC NEURALGIA IN THE CONTEXT OF ROUTINE CLINICAL CARE**

Allan Gordon MD FRCPC, Wasser Pain Management Centre, Mount Sinai Hospital, Toronto, Ontario; Stephen Butler MD FRCPC, AstraZeneca, Sweden

**AIM:** Clinicians treating individuals with neuropathic pain are overwhelmed with information on the pharmacological therapies. Many of the latter are based on evidence from clinical trials or guidelines. Another source of information on treatment outcomes would be to carefully and prospectively follow individuals for a period of time to understand what happens and what works. This two year study follows patients with painful diabetic polyneuropathy (PDN) and post-traumatic neuralgia (PTN). We present the first six months of treatment as usual. This is not an intervention study.

**METHODS:** Sixteen Canadian sites recruited 129 PDN and 134 PTN subjects and followed them for 6 months using 10 PRO's, derived from IMMPACT. These reflected bot pain and quality of life issues. This was repeated four times. As well medication types and doses were recorded.

**RESULTS:** After six months 105 PDN and 77 PTN subjects remained. In addition to antiepileptics, tricyclic antidepressants and opioids a surprising number used Cox inhibitors. Medication changes occurred frequently in this large group of neuropathic pain patients but without a significant effect on NRS or PGIC. Costs per day ranged from a few cents to 10 dollars CDN. Improvement in pain occurred rarely despite the use of multiple medications in most patients.

**CONCLUSIONS:** This cohort of patients with neuropathic pain patients showed little change in pain or function when followed for 6 months. Further information will be reported at the 2 year mark.

**P30**

**TOWARD A MODEL OF PAIN MANAGEMENT IN LONG-TERM CARE REVISION OF PAIN SCREENING, ASSESSMENT AND MONITORING TOOLS**

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**AIM:** To revise pain screening, assessment and monitoring tools currently utilized within continuing care facilities in the Calgary Health Region, Alberta Health Services.

**METHODS:** In 2005, the region embarked upon an initiative, Pain Assessment and Management in Continuing Care Facilities, that identified the standards, guidelines, and tools that would enable care centers to achieve improved pain outcomes. Care center pain audit results from June 2007 indicated that screening of pain in new residents had improved. However, assessing, monitoring, and revision of care plans continued to present a significant challenge. A gap analysis, including the review of 40 charts, completed in March 2008 confirmed these findings. The current pain screening, assessment and monitoring tools were identified as a significant barrier to effective pain management. These barriers included length and complexity of tools (an A to F system), staff turnover, and time constraints. An interdisciplinary working group was formed to provide expertise from their respective specialty areas in the revision of the current tools. Clinical expertise, as well as current research in pain management of the elderly was utilized in this revision.

**RESULTS:** The pain screening, assessment and monitoring tools required significant modification. The tools are more concise and the pain management process has been simplified.

**CONCLUSIONS:** Future plans include a pilot study to assess ease of use of tools by healthcare workers and the effectiveness in identification of

pain issues within this population. Results from this pilot may indicate the need for designated chronic pain specialists to augment and/or expand current pain management resources within LTC.

**P31**

**PAIN EDUCATION PROVIDED BY PHYSIOTHERAPISTS IN PRIVATE PRACTICE TO INJURED WORKERS WITH SUBACUTE LOW BACK PAIN**

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**AIM:** After an audit of charts of injured workers with subacute low back pain determined that documentation of education provided to clients was evident in only 29-40% of charts (2.5-5.5% indicating pain education), this study was conducted to better understand how pain education is delivered, its perceived value and how it might be improved.

**METHODS:** Eight focus group interviews with physiotherapists (n=64) were held. Words and phrases from the transcripts were analyzed using ATLAS/ti™. Patterns were clustered, compared and sorted until sufficiently distinct and comprehensive themes were generated.

**RESULTS:** Although admitting that there was limited evidence of their charting of pain education, participants explained that they provided education to their clients, but rarely documented it. They identified the subacute phase of healing as the ideal time to educate the client. Physiotherapists considered education to be their most productive intervention, and spoke about its value, the range of content, the physiotherapist-client relationship and the individual vs. standardized approach to educating clients. This study represents a new exploration of the complex relationship between physiotherapists and clients. In the busy and distracting environment of a private practice, the important intervention of education is continually taking place. Physiotherapists described their interactions with clients as providing encouragement and reassurance which are key elements to address beliefs and attitudes towards return to work.

**CONCLUSIONS:** This focus group study revealed that pain education is a complex set of processes that physiotherapists engage in with their clients, and physiotherapy charts may not always reflect this intervention.

**P32**

**THE EXPERIENCE OF PAIN AFTER A TRAUMATIC INJURY**

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**AIM:** Studies have demonstrated that patients who experience moderate to severe pain during their hospital stay are at high risk for developing chronic pain (Edwards, 2005), and that certain populations are at high risk for developing persistent pain (Hayes, 2002). Trauma and surgery are the leading causes of neuropathic pain (Hayes, 2002). Insight into the trauma patient's experience of pain after discharge is sparse. This project aims to gain insight into the experience of persistent pain following a traumatic injury.

**METHODS:** One hundred and thirteen patients consented to complete a Brief Pain Inventory, McGill Short Form Questionnaire and the S-LANSS Pain Scale Questionnaire (52% female, Injury Severity Score (ISS) M = 23). The questionnaires were administered at time of enrollment, at 4 weeks and at least 3 months post injury.

**RESULTS:** Of the 44 patients who completed the 3 month survey, 80% answered "yes" to experiencing pain on the day they completed the survey. Significant positive correlations exist between the ISS and length of stay, as well as between the ISS and number of operating procedures. A significant negative correlation was found between the ISS and the average pain score at 3 months. The SLanss M = 12.42 (SD 8.3). A score of 12 or more suggests pain of predominantly neuropathic origin.

**CONCLUSIONS:** These preliminary findings suggest that there is a high incidence of neuropathic pain at 3 months following a traumatic injury. Ongoing investigation is warranted to identify if early intervention can prevent persistent neuropathic pain.

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**P33**

**DISTRACTION AS A PAIN MANAGEMENT STRATEGY FOR INFANTS: A RANDOMIZED CONTROL TRIAL INVESTIGATING THE ROLE OF THE AGENT OF DISTRACTION**

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**AIM:** To examine if the agent of distraction (i.e. the person distracting the infant) is a key factor underlying the efficacy of distraction for post-immunization infant pain management. It was hypothesized that distraction by a non-primary caregiver (research assistant) would be more effective than distraction by a primary caregiver (parent) as having parents focus on distracting their infant would be acting in contrast to infants' innate drive for proximal soothing during times of distress.

**METHODS:** A total of 99 infants, aged 12 to 20 months, were randomly assigned to one of three conditions (typical care; research assistant directed distraction; or parent directed distraction) prior to a routine immunization. Parents were required to be fluent in English and infants had no known chronic illness or cognitive impairment, had never been hospitalized, and were not born before 36 weeks gestation. Infant pain was assessed at three time intervals (pre-needle, immediately after needle, and 1 minute after needle) using the Modified Behavior Pain Scale (MBPS). Parental soothing behaviours were also assessed throughout the procedure using the Measure of Adult and Infant Soothing and Distress (MAISD).

**RESULTS:** A 3 by 3 between-within ANOVA found that infant pain scores did not significantly differ between treatment groups. Parental proximal soothing behaviours also did not differ between treatment groups.

**CONCLUSIONS:** These findings suggest that when a parent is holding and proximally soothing their infant, distraction with a handheld toy, regardless of who is doing the distraction, is not more effective than typical care. Future research must work towards dismantling the mechanisms underlying distraction.

**P34**

**DEVELOPING A QUESTIONNAIRE OF PAIN-RELATED FEAR FOR CHILDREN AND ADOLESCENTS**

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**AIM:** It is assumed that pain-related fear plays a significant role in the experience of both acute and chronic pain. However, it does not exist any instrument to adequately measure this response to pain when it comes to children and adolescents. Our aim is to develop a questionnaire to assess pain-related fear to be used with children and adolescents in the age range of 8- to 16-years-old.

**METHODS:** The study encompasses two phases: Phase 1: Development of items to be included in the newly-created instrument: First of all, we conducted a comprehensive review of the pain-related fear literature, and compiled a list of 30 items that could reflect the four levels of analysis that this construct encompasses (i.e., physiological, cognitive, behavioral and emotional). Additional items were obtained through our asking an international group of experts, and having individual interviews with children

and adolescents. Phase 2: Testing the newly-created instrument: We then administered this first version of the questionnaire to a sample of 400 schoolchildren from grade 4 to 11 through an individual interview. Additional information was also collected during the interview to study the psychometric properties of this questionnaire. Ten days after the initial interview, participating schoolchildren were requested to answer to the questionnaire again.

**RESULTS:** Our results show that this measure provides reliable and factorially valid information of pain-related fear in youth.

**CONCLUSIONS:** We present a new measure specifically developed to assess pain-related fear in children and adolescents. This measure will allow researchers to gather valuable information, and hopefully will help to improve the knowledge about the power of this construct to predict a child's response to pain.

**ACKNOWLEDGEMENTS:** This research is supported thanks to a post-doctoral fellowship awarded by the CIHR Strategic Training Program Pain in Child Health to Dr. A Huguet and grants SEJ2006-15247/PSIC and SEJ2006-1430/PSIC from the Ministerio de Educación y Ciencia, grant 07/234 from La Marató de TV3 Foundation, La Fundacio Agrupacio Mutua.

**P35**

**DOES MULTI-MODAL ANALGESIA FOR POST-OPERATIVE PAIN MANAGEMENT DELAY REHABILITATION FOLLOWING TOTAL JOINT ARTHROPLASTY?**

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**AIM:** To determine if multi-modal analgesia prevented patients ability to meet rehabilitation goals on the first post-operative day following total hip or total knee arthroplasty.

**METHODS:** A prospective chart review was conducted between June and July 2008 at the Holland Orthopaedic and Arthritic Centre. In-patient charts (N = 111) were audited on the first post-operative day. All patients received post-operative multi-modal analgesia including celecoxib, gabapentin, acetaminophen and IV or oral opioids. Variables examined included surgical procedure, ability to sit at side of bed, ability to stand, and reason for failure to stand.

**RESULTS:** One hundred and ten patients (99%) were able to sit at the side of their bed and 92 (84%) were able to stand. Of the 92 patients who could stand 14 (15%) had to return to a sitting or supine position due to dizziness (n = 6), muscle weakness/leg buckling (n = 5), pain (n = 2), and nausea (n = 1). Nineteen (17%) patients could not stand due to: dizziness (n = 11), nausea (n = 3), sedation (n = 3), muscle weakness (n = 1), vomiting (n = 1), hypotension (n = 1), pain (n = 1), low hemoglobin (n = 1), patient refused / no reason given (n = 2). Five patients had multiple symptoms that prevented them from standing.

**CONCLUSIONS:** The majority of patients who receive multi-modal analgesia for post-operative pain management are able to meet their rehabilitation goals on the first day after surgery.

**P36**

**PATIENT-CONTROLLED ORAL ANALGESIA (PCOA) FOR POSTOPERATIVE PAIN MANAGEMENT AFTER TOTAL KNEE REPLACEMENT (TKR) – A PILOT STUDY**

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**AIM:** To investigate whether PCOA could improve patient satisfaction and reduce total opioid consumption vs. nurse (RN) administration of oral analgesia.

**METHODS:** Patients who underwent an elective TKR at our tertiary care centre were randomized to either PCOA or RN administered oral analgesia once their IV PCA was discontinued (morning of postoperative day 2). The RN group called their nurse to receive their short-acting opioid medication. The PCOA group was given a child-resistant vial at their bedside containing one dose of their prescribed short-acting opioid medication. Primary outcomes, measured postoperative day 2, were amount of opioid, pain (Brief Pain Inventory – SF), and patient satisfaction (Pain Outcome Questionnaire Satisfaction subscale – component II). Secondary outcomes were opioid side effects and knee range of motion (ROM).

**RESULTS:** Eighty-eight patients were randomized to RN or PCOA groups. Seventy-three patients maintained their randomized group assignment (PCOA n=37; RN n=36). Fifteen patients had their random group assignment changed by physician order. Data were analyzed as RANDOMIZED (patients who maintained their randomized group) and AS TREATED (all patients, categorized by their actual method of receiving oral analgesia). A non-significant trend for less opioids, less pruritis and less constipation was found for PCOA with both analyses. No difference was detected in patient satisfaction, pain, or knee ROM.

**CONCLUSIONS:** PCOA was not significantly better than RN administration but PCOA did not increase opioid consumption and may reduce the amount of opioid used, without increasing pain scores. PCOA remains an important element in our patient-centered care model.

**P37**

**THE ACCEPTANCE OF CHRONIC PAIN FROM THE PERSPECTIVE OF INDIVIDUALS WHO HAVE ACCEPTED: IMPLICATIONS FOR PROFESSIONALS**

**Audrey Kinzel PhD (Counselling Psychology), not affiliated with any organization**

**AIM:** To present the findings of original research exploring the experience of acceptance from the perspective of individuals with chronic pain who have accepted their pain. Participants were ten individuals who had learned to cope with and were living with their pain. None had received treatment from a pain management clinic.

**METHODS:** A naturalistic paradigm based on phenomenological methodology guided the study. Data were collected through indepth interviews. A data analysis program was used to code the interview transcripts. The constant comparative method of analysis was used to further analyze the data until five themes emerged.

**RESULTS:** The five themes were: The Essence of Acceptance, Interpersonal Interactions and Acceptance: Help or Hindrance, The Journey of Acceptance, Choices and Changes on the Journey, and Where the Journey has Lead... so Far.

The Essence of Acceptance identifies acceptance as an ongoing process with characteristic attitude and language.

Interpersonal Interactions and Acceptance: Help or Hindrance underscores qualities and details of interactions and relationships which facilitate or intercept acceptance.

The Journey of Acceptance focuses on the decision to accept, the steps, and time required for acceptance.

Choices and Changes on the Journey outlines the many ways participants were positively transformed through acceptance.

Where the Journey has Lead... So Far presents how participants are managing hope, fear, and uncertainty while living meaningfully with pain.

**CONCLUSIONS:** Acceptance of pain took months and even years of hard work and persistence. This time frame has implications for time limited treatment programs. Acceptance may best be termed 'accepting' which recognizes that the process is never really complete but one of constant revisiting. Being believed by professionals was critical as was their response to the uncertainty of chronic pain to the individuals with pain. Realizing choices were available, taking control and responsibility, focusing on the pain in order to learn about its insidious nature, and receiving information from professionals were all essential in order to gradually move the focus from pain to life. A self-report measure entitled 'Chronic Pain Acceptance Self rating Scale' was developed from the data. Piloting of this instrument is being planned.

**P38**

**A RETROSPECTIVE CHART REVIEW OF ADD-ON NABILONE IN THE CLINICAL MANAGEMENT OF FIBROMYALGIA**

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**AIM:** To provide clinical insight into the possible efficacy, dosing and safety of add-on nabilone in the management of fibromyalgia (FMS) patients.

**METHODS:** Clinical information from charts of patients 1) seen in associated teaching hospital outpatient clinics 2) with a confirmed diagnosis of FMS including ACR criteria and formal algometry measurements and 3) subsequently prescribed nabilone; was compiled retrospectively. Patients had been monitored for change in pain (numerical rating scale or neuropathy pain scale) and function (fibromyalgia impact questionnaire).

**RESULTS:** For 41 patients, current medication(s) maintained, the average starting dose was 0.5mg qhs. 23 patients (56.1%) experienced improvement in pain or functional outcomes for more than one month. 14 patients (34%) did not tolerate titration to daytime use but continued on bedtime use only. Side effects were mild to moderate, including lightheadedness, sedation and dizziness (felt mostly during the first week). The average effective dose was 1.5 mg daily with a dose range of 0.125 mg to 8.0 mg daily. Treatment varied from two to 38 months. Concomitant medications were monitored and in several cases, the use of psychotropic medications and/ or opioids could be reduced or eliminated. No major adverse reaction, addictive behavior or tolerance developed.

**CONCLUSIONS:** The results of this retrospective chart review indicate the potential benefits of add-on nabilone therapy in fibromyalgia patients experiencing poor control of pain and function with standard pharmacotherapy. Many patients had safely received nabilone concomitantly with various medications for several months. One patient continues to respond to a high dose of 8.0 mg/ day over 38 months. This may be an indicator of nabilone's potential long-term safety in the FMS population.

**P39**

**INNOVATIVE APPROACHES IN THE MANAGEMENT OF FIBROMYALGIA: 20 YEARS OF EXPERIENCE WITH THE FOUR COMPONENT THEORY APPROACH**

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**AIM:** We present case studies/ case series of Fibromyalgia (FMS) patients treated with an interdisciplinary approach.

**METHODS:** The 4 component model (Klinghardt) for treating chronic pain and disease helps to conceptualize an approach for FMS. This involves identifying and treating underlying root causes for pain and dysfunction in 4 areas: Structural – Biochemical – Psychoemotional – Neurological. This approach as a model for multi-modal/ multi-disciplinary treatment will be illustrated.

**RESULTS:** STRUCTURAL: A case series of 25 FMS patients treated effectively with Botulinum Toxin-A injections will be presented. Such injections into myofascial trigger points and tender points often do not work and may exacerbate FMS pain. Injections do work when done on a biomechanical basis (correcting postural misalignments and upper/ lower crossed syndromes) and when combined with specialized manual therapy and exercise. Prolotherapy (for sacroiliac ligament laxity) and facet denervation were also helpful in some cases (Ref 1). BIOCHEMICAL: Case studies of FMS patients improved with naturopathic (functional medicine) approaches will be presented. This includes the use of omega 3 fatty acids (at a high dose) to improve pain and mood (Ref 2). PSYCHOEMOTIONAL: A FMS case study using EEG biofeedback / neurotherapy will be presented. This patient was followed over 5 years and had significant amelioration of pain, improvement in “fibrofog” and in sleep (Ref 3). NEUROLOGICAL: Case series of recalcitrant FMS patients with allodynia who responded to unique multimodal combinations of neuropathic pain medications will be presented. This included combinations of Pregabalin, SNRIs, tramadol and cannabinoids (Ref 4). A randomized controlled trial using topical counter-irritant oils for FMS will also be described (Ref 5).

**CONCLUSIONS:** These cases demonstrate the diversity in assessment for underlying causes and the need for individualized treatment in FMS. Additional randomized clinical trials will need to focus on specific subgroups of FMS patients to demonstrate clinical effectiveness.

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#### P40

### CONCORDANCE BETWEEN PATIENTS' AND CLINICIANS' GLOBAL CHANGE RATINGS FOLLOWING INTERDISCIPLINARY CHRONIC PAIN TREATMENT

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**AIM:** This study aimed to evaluate the concordance between patients' and clinicians' global ratings of change following participation in interdisciplinary treatment for chronic pain.

**METHODS:** Two hundred and fifty-one participants (67% female, mean age=48.1 years) completed a 3-week, group-based chronic pain management program at a rehabilitation hospital. Sessions were offered by several disciplines, including physiotherapy, psychology, social work, nursing, occupational therapy, recreational therapy, and vocational rehabilitation. At the end of treatment, all participants completed global ratings of change in pain severity, emotional health, and functional ability. As well, they rated their overall change. The treatment team also rated all participants on each of these measures. The data were analyzed using parametric and non-parametric statistics.

**RESULTS:** Results demonstrated moderate associations between patients' and clinicians' global change ratings ( $p < .001$ ). The strongest associations were obtained for overall change and change in pain severity. Compared to clinicians, patients reported greater change (improvements and declines) across all variables. In particular, a greater proportion of patients reported that they were moderately or significantly better overall in comparison to the proportion rated moderately or significantly better by clinicians. In addition, a greater proportion of patients reported that their pain severity

either worsened or improved following the program in comparison to clinicians ratings of patients' pain severity.

**CONCLUSIONS:** Findings indicate that patients' and clinicians' global change ratings correspond moderately. Nevertheless, differences were obtained between patients' and clinicians' ratings with respect to the direction and magnitude of change.

#### P41

### HEALTH PROFESSIONALS' VIEWS OF PATIENT SELF-MANAGEMENT

**Diane LaChapelle PhD**, University of New Brunswick

**AIM:** To examine the extent to which health professionals are knowledgeable about self-management approaches and are actively promoting self-management to their patients.

**METHODS:** 874 health professionals (nurses, OT, PT, Psyc, MD, chiro) in Atlantic Canada completed an online survey.

**RESULTS:** While the majority (81.4%) of respondents felt it was very or extremely important for patients to self-manage their condition, the extent to which they actively supported self-management was limited. The most common support offered was general disease related education followed by referral to other health-professionals. Respondents were least likely to refer patients to relevant Internet sources, reading materials, or videos. The most common reasons for not promoting self-management included lack of community resources for referral, lack of time, lack of support from hospital/clinic administration, and lack of suitable resources (e.g., reading materials) to provide to patients. Respondents indicated that a centralized referral system, improvements in community based resources, staff support, CME training, and readily available health information to hand out to patients would help them better facilitate their patient's self-management. 87.8% of respondents felt that improved access to community based self-management programs would help patients become better self-mangers. Furthermore, 71.2% felt this would help reduce their workload. Interestingly, among those who worked with patients with arthritis, only 10.6% had ever referred a client to the Arthritis Self-Management Program.

**CONCLUSIONS:** Health professionals see value in patients becoming effective self-managers but there are a number of barriers to their actively promoting self-management among their patients. Changes are needed in all levels of health care if we are to improve the management of chronic disease/pain in Canada.

#### P42

### WHAT DO WE KNOW ABOUT ADOLESCENT DYSPAREUNIA? PREVALENCE AND CORRELATES

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**AIM:** Recent population-based studies indicate that dyspareunia's prevalence ranges from 12% to 21% in adult women. Although clinical data suggest that dyspareunia can begin during adolescence, a large scale epidemiological study has yet to be conducted with this population. Thus, the present study aimed to determine the prevalence, characteristics, and correlates of pain during intercourse in adolescent girls.

**METHODS:** With written informed consent, data were obtained from 1425 girls (12-19 year olds), from seven metropolitan high schools using self-report questionnaires focusing on gynaecological/biomedical history, physical/psychological/sexual abuse, anxiety, depression, attitudes towards sexuality, and social support. Dyspareunia prevalence was evaluated by asking sexually active participants whether or not they regularly (at least 75% of the time) experienced pain during intercourse.

**RESULTS:** Results showed that 20% of sexually active girls (N = 251) reported having regular pain during intercourse for at least 6 months or more. A primary form of dyspareunia was reported by 67% of adolescents and pain ratings were significantly higher at the vaginal opening site than at internal pain sites. Dyspareunia cases scored significantly higher than pain-free controls on: pain during first tampon insertion, pain during usual tampon insertion, potentially detrimental vulvar hygiene habits, fear of physical abuse, sexual abuse, state anxiety, and trait anxiety. Following a

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logistic regression, only pain during tampon insertion and state anxiety were significant predictors of adolescent dyspareunia.

**CONCLUSIONS:** Findings suggest that dyspareunia is highly prevalent among adolescents, extends beyond intercourse to non-sexual contexts, and seems to be mostly affected by psychosocial variables.

### P43

#### **INTERVENTIONS WITH PARENTS FOR PAIN MANAGEMENT OF CHILDREN IN AN EMERGENCY DEPARTMENT (ED): RESULTS FROM THE PAMPER STUDY**

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**AIM:** Parents' misbeliefs about pain management may inhibit them from properly managing their child's pain. Educating parents about pain management may increase knowledge, dispel myths and help decrease children's pain intensity and unpleasantness related to pain following a visit to the Emergency Department (ED). Our objectives were to verify the efficacy of an educational intervention on children's pain, and unpleasantness related to pain, 24-hr post-discharge from the ED and on parents' beliefs regarding pain management.

**METHODS:** This interventional study with a randomized allocation (Exp and Ctrl) used samples of parent/child dyads who presented themselves to the ED. The Exp. group received a bookmark, a Booklet on pain management and a pain scale (Faces Pain Scale-FPS revised or Numerical Rating Scale-NRS). The Ctrl group only received a FPS-R or NRS. Pain intensity and unpleasantness were both measured at triage and 24-hr post discharge from the ED. Primary outcomes: children's pain intensity and unpleasantness related to pain (FPS-R or NRS), parents' beliefs on pain management (Pain Beliefs Questionnaire-PBQ).

**RESULTS:** Samples of 98 (Exp.) and 97 (Ctrl) parent/child dyads were recruited. No significant difference was found between both groups regarding pain intensity and unpleasantness, at triage and 24-hr post-discharge. Results on the PBQ were similar between both groups ( $t = -1,751$   $p=0,082$ ) even though close to 92% of parents read the bookmark and booklet. Pain intensity and unpleasantness decreased between triage and 24-hr post-discharge, but only among each group. Pain levels in both groups were moderately elevated after 24-hr (Exp:  $X=3,6$   $SD:2,5$ ; Ctrl:  $X=3,2$   $SD 2,2$ ).

**CONCLUSIONS:** Intervention was not effective to reduce pain and unpleasantness related to pain, as well as it did not improve parents' pain beliefs. Interventions such as having parents actively participate, or educational sessions with nurses and physicians, might be more effective.

### P44

#### **SELF-MANAGEMENT OF POSTOPERATIVE PAIN: WOMEN'S EXPERIENCE AFTER EARLY DISCHARGE FROM CARDIAC SURGERY**

**Marit Leegaard, International Postdoctoral Fellow Lawrence S Bloomberg Faculty of Nursing, University of Toronto; Assistant Professor, Faculty of Nursing, Oslo University College, Norway**

**AIM:** To describe how women recovering from cardiac surgery experience postoperative pain and self-management of pain in the first weeks after discharge.

**METHODS:** A qualitative study was conducted in 2004-2005 with 11 women recruited from a Norwegian University Hospital before discharge from their first elective surgery. Mixed-methods were used to collect data the first two weeks post-discharge: semi-structured interviews, a self-developed pain diary and The Brief Pain Inventory – Short Form. Thematic content analysis was used to identify themes in the interviews, pain data from diaries and BPI-SF were analysed with simple statistical procedures.

**RESULTS:** The women had pain in the chest almost every day the first

two weeks at home and this was expected. The pain in their neck, shoulders and back was unexpected and this pain worried them more. Postoperative pain experiences varied from no pain to pain all the time. Nobody wanted to complain about their painful experiences and the women wanted to take as little pain medication as possible or waited to do so until pain was unbearable. Analgesic intake varied from round the clock to nearly no pain medication. Women were uncertain about how to use analgesics and advice about self-management. Postoperative pain interfered most with sleep, general activity and the ability to perform housework. Recommendations on physical exercise were followed much more conscientiously than self-management of pain.

**CONCLUSIONS:** Self-management of pain after early discharge from cardiac surgery depended more on general knowledge and expectations regarding pain and self-management than actual experiences of pain after surgery. More specific pre-discharge education on adequate self-management strategies using analgesics regularly and why postoperative pain management is important beyond simple pain relief is needed. Adequate self-management of pain the first weeks after surgery is essential to promote recovery and to prevent possible complications.

### P45

#### **THE EFFECT OF EDUCATION ON FEMALE ADOLESCENTS' UNDERSTANDING OF PAIN SCIENCE**

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**AIM:** To evaluate if female adolescents' knowledge of pain science could increase when given a pain science education tool.

**METHODS:** Randomized, double blind, controlled trial involving 22 female adolescent participants 13-16 years who were not experiencing chronic pain. Participants were randomized into three groups to complete the two-session trial. Session one involved groups A and C completing the pain science quiz, with group B completing a placebo quiz. During session two, group C completed the pain science quiz prior to viewing the education tool. All groups then viewed the education tool together, after which groups A and B completed the pain science quiz.

**RESULTS:** A significant increase in knowledge was observed ( $p=0.038$ ; 95% CI) in pain science scores of group A from pre- to post-intervention testing. Baseline knowledge of groups A and C were not significantly different ( $p=0.833$ ), and no learning effect was observed as session two scores of groups A and B were not significantly different ( $p=0.782$ ). Test re-test reliability was established from the session one and two pain science scores of group C, which were not significantly different ( $p=0.285$ ).

**CONCLUSIONS:** The findings of this study suggest that female adolescents ages 13-16 who have never experienced chronic pain are capable of understanding pain science. Results show that participants had significantly higher post test scores and this may be attributed to the intervention applied.

#### **FOOTNOTES/REFERENCES:**

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## P46

**PATIENT COMPLAINTS AGAINST THE STAFF OF A TERTIARY CHRONIC PAIN CLINIC IN TORONTO: NATURE OF COMPLAINTS AND COMPLAINANTS**

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**AIM:** To identify the nature/number of complaints against the staff of the Comprehensive Pain Program (CPP), a tertiary pain clinic in Toronto, as well as the characteristics of the complainants.

**METHODS:** All sources of complaints against the CPP were identified from the hospital Public Relations (PR) records, directly to the CPP, from the College of Physicians and Surgeons of Ontario (CPSO), anonymously from RateMDs.com and from a 2 month record of complaints via phone or personal encounters collected prospectively. Qualitative analysis was performed on all complaints for which explicit files were available. Data were also obtained from the CPSO in regards to number and gender of complainants during 2005-06.

**RESULTS:** Twenty three complaints were recorded with PR over 9 years (2.6 complaints/year or 1.73 complaints/1000 visits), with female/male ratio of 3.6/1. Three additional complaints were filed directly with the CPP director in the same period and 3 further complaints to CPSO against the CPP Director. Seven more informal complaints were registered by the staff during a 2-month observation period in 2008 and 4 complaints in rateMDs.com entries for the CPP Director. The vast majority of the complainants were females born in Canada. CPSO data analysis showed similar preponderance of female complainants (female/male ratio 1.5-1.7/1). Changes in patterns of practice in our clinic as the result of the complaints are discussed.

**CONCLUSIONS:** Despite the relatively small number of complaints, their influence on staff's behaviour and level of comfort is significant. Reasons for preponderance of female complainants are discussed.

## P47

**PAIN CATASTROPHIZING: A RISK FACTOR FOR POOR TREATMENT RESPONSE IN PATIENTS WITH NEUROPATHIC PAIN**

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**AIM:** The primary objective of the present research was to examine the role of pain catastrophizing as a prognostic indicator of poor response to treatment for neuropathic pain.

**METHODS:** The study sample consisted of 82 patients (41 men, 41 women) who were enrolled in one of two clinical trials examining the efficacy of topical analgesics for neuropathic pain. In both clinical trials, participants were instructed to clean the area and then apply 4 ml of cream to the site of maximum pain (size of the area of pain varied) three times per day for three weeks. Pain catastrophizing (PCS; Sullivan et al., 1995), pain intensity, pain severity (MPQ-SF; Melzack, 1987) and patient satisfaction measures were obtained at various points throughout the study.

**RESULTS:** Change scores (baseline – week 3) were computed on the MPQ sensory and affective subscales. Pearson correlation revealed that PCS scores were inversely correlated with change in the affective subscale of the MPQ,  $r = -.32$ ,  $p < .01$ . In other words, high pre-treatment PCS scores predicted less reduction in the affective dimension of pain. PCS scores were not significantly correlated with the sensory subscale of the MPQ,  $r = -.14$ , ns. Furthermore, a hierarchical regression analysis was conducted to determine whether catastrophizing contributed directly to lower treatment satisfaction, or whether the relation between catastrophizing and treatment satisfaction was mediated by change in pain intensity. The results of the analysis suggest that catastrophizing does not impact directly on ratings of treatment satisfaction. Rather, catastrophizing has an

impact on change in pain, which in turn has an impact on treatment satisfaction.

**CONCLUSIONS:** The study findings join a growing literature which suggests that catastrophizing is a prognostic factor for poor treatment outcome. As well, study results have significant implications for clinical trials and for the clinical management of neuropathic pain. Given that a catastrophizing mindset can lead to a reduction in treatment response to a pharmacotherapeutic agent, it is possible that if one targets catastrophizing using specific treatment, then one might predict an improvement in treatment response.

## P48

**GENETIC AND ENVIRONMENTAL VARIABLES AFFECTING MAPPING OF QUANTITATIVE TRAIT LOCI (QTLs) CONTROLLING AURICULAR HEAT PAIN IN INTACT RECOMBINANT INBRED (RI) AXB-BXA MICE LINES**

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**AIM:** We found that inbred A/J ('A') and C57BL/6J ('B') mice contrast on heat nociception in the auricle, justifying phenotyping the 23 non-redundant AXB-BXA RI daughter lines of crossed A and B mice. The resulting strain distribution pattern (SDP) could facilitate QTL mapping and identification of candidate genes controlling this trait<sup>1</sup>. Darker skin, absorbing more heat, could confound this SDP. This study tested if ear pigmentation and gender affect pain SDPs and resultant QTLs.

**METHODS:** The median response of 8 mice/gender of A, B and the axb-1,-2,-4,-5,-6,-8,-10,-12,-13,-15,-19,-24, and bxa-1,-2,-4,-7,-8,-11,-12,-13,-14,-24,-25/PgnJ lines to 6 diode laser heat pulses (980nm; 3.0mm in diameter; 270msec; 8.0-38.0amp), directed at the inner auricle bilaterally, were determined on a scale of 0-4. Ear pigmentation levels were determined from digital photographs using the ImageJ software<sup>2</sup>. Effect of gender was analysed on SDPs normalized for pigmentation. WEBQTL software<sup>3</sup> was used for mapping QTLs and candidate pain genes.

**RESULTS:** SDPs showed clustering of pain responses by fur colour. Lines with black fur were ~3.1 fold more sensitive than albinos, 1.65 fold more than agoutis, and agoutis were 1.85 fold more sensitive than albinos ( $p < 0.05$ ). Pigmentation-normalized pain levels significantly differed across lines and gender. QTLs on chromosomes 1,9,16, and 17 harbour ion channel genes of interest for validation studies.

**CONCLUSIONS:** This study showed that skin colour is a confounding variable when mapping QTLs using radiant heat as a phenotyping tool. Variability in heat nociception in the ear is under genetic control, affected by gender, and gene-by-gender interaction.

**FOOTNOTES/REFERENCES:**

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**P49**

**EFFICACY, QUALITY AND STUDENT SATISFACTION ACROSS THREE SIMULATION LEARNING CONDITIONS FOR PRE-LICENSURE NURSING STUDENTS' EDUCATION ABOUT PAIN: A RANDOMIZED CONTROLLED TRIAL**

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**AIM:** Health care professionals have misbeliefs that block effective pain assessment and management. While standardized patients have been used effectively to improve nursing students' interview skills and pain-related knowledge, they can be expensive. This randomized controlled trial pilot tested two alternate simulation methods versus SPs for improving nursing students' knowledge of pain-related misbeliefs including classroom-based simulation training (CBS) and deteriorating patient-based simulation (DPS).

**METHODS:** Design. Students (N=149) were randomized to SP, CBS or DPS simulation, each lasting 3 hours. Measures. Pre and post-test pain-related misbeliefs were measured using the Pain Beliefs Scale (PBS); students' perceived satisfaction and quality of simulation were secondary outcomes measured by the Student Satisfaction with Learning Scale (SSLS) and the Simulation Design Scale (SDS) respectively. Analyses. ANCOVA tested for overall differences in pain-related misbeliefs between treatment arms. One-way ANOVA tested for overall group differences in post-test SSLS and SDS scores.

**RESULTS:** At post-test, students who underwent DPS had significantly higher scores for a) knowledge of pain-related misbeliefs than those who worked with SPs [F=10.26(2,134), p<0.001], and b) significantly higher SSLS scores than both the SP and CBS groups [F=27.08(2,135), p<0.001]. With respect to perceived quality of simulation, DPS and SP group scores were similar and significantly higher than the CBS group scores [F=6.52(2,128), p=0.02].

**CONCLUSIONS:** DPS training offered a viable alternative to standardized patients and students preferred small groups over a classroom setting for simulation learning about pain. Based on these pilot results, further examination into the effectiveness of DPS training for pain education is warranted.

**P50**

**THE PAIN RESPONSE PREFERENCE QUESTIONNAIRE: A NEW MEASURE OF PREFERENCES REGARDING PAIN-RELATED SOCIAL SUPPORT**

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**AIM:** Fordyce's (1976) behavioral model of chronic pain posited that solicitous responses to pain behaviors are positively reinforcing and play a role in the development of chronic pain and disability. Recent research (e.g., Newton-John & Williams, 2006) suggests that many previous studies supportive of this model were likely limited by the use of only a few narrowly defined categories of responses to pain behavior. A measure of preferences regarding pain-related social support has the potential to improve behavioral models of chronic pain by identifying other potentially reinforcing responses. To address this need, the Pain Response Preference Questionnaire (PRPQ) was developed and evaluated.

**METHODS:** A large university student sample (N = 487) free of chronic pain completed the 39-item PRPQ. Factor analysis was applied to the data from this sample in order to empirically develop PRPQ scales. Using a second student sample (N = 87), relationships between the PRPQ scales

and theoretically-related measures were examined in order to evaluate the construct validity of the scales.

**RESULTS:** Factor analysis supported four-factors that reflected preferences for: (a) emotional and instrumental support, (b) assistance in managing pain and emotions, (c), having one's pain ignored, and (d) being encouraged to persist with one's activities. Based on this analysis, scales labeled Solicitude, Management, Suppression, and Encouragement were created. Correlational analyses supported the construct validity of these scales.

**CONCLUSIONS:** The PRPQ is a psychometrically sound measure of preferences of pain-related social support. Research with clinical samples is needed to further evaluate its psychometric properties and clinical utility.

**P51**

**RELATIONSHIPS BETWEEN ADULT ATTACHMENT DIMENSIONS AND ATTITUDES TOWARD PAIN BEHAVIOR**

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**AIM:** The behavioral model of chronic pain posits that positive reinforcement of pain behavior plays a critical role in the development of chronic pain. There is a paucity of research regarding factors that influence the provision of such reinforcement. Attachment theory and research is suggestive of a model in which those with avoidant attachment view the pain behavior of others in a negative manner and consequently do not reinforce pain behavior. As a preliminary step in evaluating this model, the relationship between attachment dimensions and attitudes towards the pain behavior of others was examined. It was hypothesized that attachment avoidance would be negatively associated with accepting attitudes towards pain behavior.

**METHODS:** A sample of undergraduate students (N = 160) completed the Relationships Structures questionnaire, which assesses adult attachment dimensions (Anxiety and Avoidance) with respect to four relationship targets (mother, father, romantic partner, and best friend). Attitudes toward pain behavior were assessed using the male and female versions of the Appropriate Pain Behavior Questionnaire (APBQ). These measures assess beliefs regarding acceptability of a range of pain behaviors (e.g., "It is acceptable for men to cry when in pain.").

**RESULTS:** Across three relationship targets (mother, romantic partner, and best friend), attachment avoidance had significant negative associations with both the male and female versions of the APBQ.

**CONCLUSIONS:** Individuals high in attachment avoidance hold more negative attitudes toward pain behavior than those with lower levels of avoidance. Additional research regarding the role of attachment and attitudes on responses to pain behavior is warranted.

**P52**

**EFFECT OF PREGABALIN ON DYNAMIC ALLODYNIA IN PATIENTS WITH POSTHERPETIC NEURALGIA (PHN): CORRELATING CHANGE IN ALLODYNIA TO CHANGE IN PAIN**

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**AIM:** A recent double-blind randomized controlled trial (RCT) evaluated the effect of pregabalin on Visual Analog Scale (VAS) ratings of dynamic (brush-evoked) allodynia in PHN (Barrett JA et al. World Institute of Pain 2007. Poster). We report on a post-hoc analyses of an ANCOVA examining the baseline allodynia effect on changes in pain, separately for weeks 1, 4 and last observation.

**METHODS:** RCT Study design: 7-day screening, 28-day treatment phase, and 1-week taper. Patients (>18y) with PHN for 3 months, pain VAS score >40mm (100-mm scale), who completed the daily pain NRS >4 times (average daily score 4; 0-10 scale) during 7-day screening were eligible. The post-hoc analyses models include terms for treatment and pooled center, plus baseline pain and baseline allodynia as continuous covariates. The second model also includes the treatment-by-baseline allodynia interaction.

**RESULTS:** The RCT randomized 91 patients to flexible-dosage pregabalin (optimized dose 150-600mg/d BID); 88 to fixed-dosage 300mg/d; and

90 to placebo for 4 weeks. The post-hoc analyses showed baseline allodynia effect is significant at each week ( $P < 0.05$ ), showing that the baseline value is influential in determining the percent change from baseline in pain, adjusting for the influence of the other variables in the model. The interaction of treatment with baseline allodynia in the second model was not significant, indicating that the effect of baseline allodynia is similar in the three treatment groups ( $P = 0.50$  at last observation). The coefficients of baseline allodynia are positive (0.17 at last observation), indicating that higher baseline allodynia scores are associated with smaller improvement in percent changes from baseline in pain. At the last observation, an increase of 10 points in baseline allodynia is associated with an increase of about 1.7 percentage points of pain.

**CONCLUSIONS:** The post-hoc analysis demonstrated that independent of treatment, change in allodynia is correlated with the change in overall pain. The effect in the model of baseline allodynia on the change from baseline in pain scores was small, but indicated a tendency for less reduction in pain scores with increasing baseline allodynia.

## P53

### BEHAVIOURAL NEEDS ASSESSMENT IN FIBROMYALGIA

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**AIM:** This IRB approved, mixed-methods needs assessment examined the challenges physicians face providing care to patients with fibromyalgia. The research sought to go beyond knowledge gaps, to better understand the influence of physician confidence, physician motivation, care context dynamics, and the nature of physician-patient relationships.

**METHODS:** This study combined mixed-methods with a triangulated approach to maximize findings' validity. Specifically, multiple sources (e.g. guidelines, literature) were reviewed in designing the qualitative phase (½ day focus groups, interviews) and the quantitative validation phase (national online survey). Data was collected from multiple stakeholders, including (i) family physicians ( $n = 189$ ), (ii) specialists ( $n = 139$ ), and (iii) patients with fibromyalgia ( $n = 18$ ). Finally, multiple analyses were conducted including content analyses, and descriptive and inferential statistics.

**RESULTS:** Findings reveal significant and complex knowledge, attitudinal, and skills-based challenges at both the primary care and speciality level. Fibromyalgia's diffuse and shifting symptomology contributes to family physicians' difficulty in posing an accurate, differential diagnosis. Moreover physicians reported feeling overwhelmed and frustrated in seeking to achieve optimal patient care outcomes, because of limited established treatment options and the lack of clear standards of care, monitoring tools and/or algorithms, and specialized allied health care resources. Patients echoed these findings, feeling isolated and frustrated with a lack of progress in their care.

**CONCLUSIONS:** The findings indicate a need for educational initiatives to (a) develop user-friendly point-of-care diagnostic algorithms; (b) close knowledge gaps with solution-focused education; and (c) facilitate effective physician-patient dialogue and relationship building.

## P54

### CHARACTERISTICS AND FUNCTIONAL STATUS OF PATIENTS UPON ENTRY TO A TERTIARY CARE PAIN CLINIC

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**AIM:** To describe the demographic characteristics and functional and emotional status of patients attending a tertiary care pain clinic in downtown Toronto.

**METHODS:** Cross sectional study including 100 consecutive new patients over a 4 month period, using a modified Chronic Pain Evaluation Questionnaire (CPEQ). This questionnaire measures 3 constructs (activity interference, emotional distress, and perceived support). Patients were requested to rate each interference item on a 5-point scale that ranged from 1- not at all to 5- extremely.

**RESULTS:** Of the enrolled patients the male-female ratio was 1.2:1 with an average age of 46 years (range: 17-85); 55% were married or in common law relationships and 42% of patients were foreign born. In terms of education, 62% of patients had at least a high school education with 68% being educated in Canada. 77% of patients chose English as their first language. Results indicated that all 9 aspects of activity interference were considered important with a majority of patients indicating a score of 3 or greater. The most important aspects included exercise (86% of patients), work (84.6% of patients), sleep (85% of patients) and recreation and hobbies (89.5% of patients). Utilizing a similar cutoff point, we reviewed the results of all aspects of emotional distress and found that the majority of patients, were anxious and tense (92%) angry and upset (82%) or depressed (86%).

**CONCLUSIONS:** This survey provides preliminary information confirming that patients attending a tertiary care pain clinic have reduced functional abilities and high levels of emotional distress. Other results will be further discussed.

## P55

### THE INFLUENCE OF CHINOOK WINDS UPON EXACERBATIONS OF NEUROPATHIC PAIN

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**AIM:** Although Chinook winds are often viewed as desirable during a cold Calgary winter, individuals suffering with neuropathic pain (NeP) have anecdotally reported exacerbations of NeP during Chinooks, perhaps analogous to Chinook wind-exacerbation of migraines. We hypothesized that Chinook winds would lead to acute exacerbations in pain in a NeP patient population.

**METHODS:** We prospectively identified 65 patients with NeP and a daily VAS scores of  $\geq 4$  presenting to a tertiary care NeP Clinic for determination of possible Chinook wind-mediated exacerbation of NeP using a diary based system without knowledge of specific weather tracking. Visual Analogue Scale (VAS) pain scores were recorded over six month periods through different seasons. Weather conditions were tracked using Environment Canada hourly statistics with Chinook winds defined based upon accepted meteorological conditions over a 24 hour period. Acute exacerbations were defined as a day when VAS pain scores were  $\geq 2$  points above their average NeP score over a six month time period.

**RESULTS:** Although associated with exacerbation of migraines in Calgary, Chinook, pre-chinook and post-chinook conditions were not associated with individual acute exacerbations in NeP. In fact, Chinook days were protective against acute exacerbations in NeP (odds ratio 0.41 [0.22-0.78]) as compared to non-Chinook days.

**CONCLUSIONS:** Although other weather conditions need to be evaluated, Chinook winds actually were beneficial in our NeP patient population by reducing acute exacerbations of NeP in patients with existing NeP conditions. Weather-mediated changes in NeP may be different than previously noted weather-mediated triggering of migraine syndrome.

## P56

### ENTRY DEMOGRAPHICS OF MIGRAINE PATIENTS REFERRED TO A TERTIARY CARE PAIN CLINIC

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**AIM:** To examine pharmacological treatment of migraine patients admitted to a tertiary care pain clinic.

**METHODS:** A retrospective review of 100 migraine patients admitted to

## Abstracts

The Wasser Pain Management Centre was conducted. Patients included met the 2nd Edition of The International Headache Classification (ICHD-2), for diagnosis of migraine. Data was collected with regard to nicotine and alcohol consumption, family history of migraine headaches, other pain diagnoses, and pharmacological treatment.

**RESULTS:** Twenty-two percent of these patients were male as opposed to seventy-eight percent were female. The mean age of patients admitted for migraine was 43.4 years. Of the patients admitted 48 percent had tried at least one triptan in the past and only 31 percent were actively using triptan(s). The most commonly used triptan in the past was sumatriptan, whereas the most common triptan used on admission was rizatriptan. Opiate use was much more prevalent; 72 percent of admitted patients were using an opiate and 27 percent used multiple opiates.

**CONCLUSIONS:** A significant number of patients had not yet been tried on a triptan despite meeting the diagnostic criteria for migraine on admission. More education of the general medical community regarding the safety and efficacy of triptans may be beneficial.

### P57

#### **CHILDREN'S MEMORY FOR ACUTE PAIN: THE INFLUENCE OF PARENTAL BEHAVIOURS DURING MEDICAL PROCEDURES ON SUBSEQUENT RECALL**

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**AIM:** Children's memories of painful medical procedures have important implications for their coping during subsequent procedures. It is well established that parental behaviours during medical procedures influence children's coping during painful procedures. We examined whether parental behaviours during medical procedures was related to their recalled pain and anxiety 2 weeks following the procedure.

**METHODS:** Participants consisted of 48 children aged 5-10 years who underwent venepunctures. Children completed a measure of pain (Faces Pain Scale-Revised: FPS-R, scores range from 0 to 10) and a measure of anxiety (Faces Anxiety Scale: FAS, scores range from 0 to 4) at two time points: immediately and 2 weeks following the procedure. Memory scores were calculated by taking the difference between pain and anxiety ratings at each time point. Parental behaviours were coded using the CAMPIS coding system.

**RESULTS:** Results revealed that parental behaviours were related to initial pain ratings but did not predict children's pain memories. However, children's procedural pain was related to their memories. Children who initially reported higher levels of pain tended to overestimate their level of procedural anxiety 2 weeks following the procedure whereas children who initially reported lower levels of pain tended to accurately estimate or underestimate their levels of procedural anxiety at follow up.

**CONCLUSIONS:** These findings suggest that children's initial procedural pain experience may be related to how they recall their level of experienced procedural anxiety and highlight the importance of effective pain management during procedures. Future research will examine the contributions of individual factors in the prediction of exaggerated pain memories.

### P58

#### **CARDIAC PAIN: A HIDDEN BIAS TOWARD WOMEN**

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**AIM:** Women's cardiac pain challenges societal and cultural expectations that associate mid-sternal chest pain with radiation to the arm as the cardinal sign of myocardial pain. Many women do not seek medical advice for initial symptoms of chest pain, not recognizing these prodromal signs as a warning. Women are also less likely than men to be taken seriously for their variable reports of pain and are not referred on for further diagnostic testing. The purpose of this review was to understand the complexity involved in women experiencing cardiac pain.

**METHODS:** Electronic searches in The Cochrane Library (1966-2007), MEDLINE (1950-2007), PsychINFO (1960-2007) and CINAHL (1982-2007) data bases from 1995-2007 were conducted using medical subject heading (MeSH) terms including pain, cardiac pain, acute coronary syndrome, women, angina, heart attack, myocardial infarction, coronary artery bypass, and qualitative methods. Hand searches of relevant journals and secondary references were conducted.

**RESULTS:** Six studies revealed that women typically experience prodromal signs six months before an acute cardiac event. Characteristic of this collage of painful symptoms are extreme fatigue, shortness of breath, nausea and vomiting, and discomforting chest pain sensations such as gripping, squeezing, or dull ache. Women reported confusion about the meaning of these painful symptoms due to their variable and elusive presentations. There is general consensus that a) clinician's lack of awareness of the full spectrum of women's painful cardiac symptoms, and b) this knowledge gap has consequences for women's access to appropriate cardiac care.

**CONCLUSIONS:** Lack of understanding of women's cardiac pain is problematic. Research examining the temporal nature of cardiac pain in women and related educational needs of clinicians is warranted.

### P59

#### **OPIATE SPARING EFFECTS OF CANNABINOID IN CRPS PATIENTS**

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**AIM:** To demonstrate the efficacy and opiate sparing effect of cannabinoid in the management of severe CRPS patients requiring high dose opiates.

**METHODS:** Retrospective analysis conducted. Five CRPS patients requiring high dose opiate, received cannabinoid resulted in reduction of pain.

**RESULTS:** Pt, #1 - 47yo. CRPS II following L5S1 discectomy. Unable to weight bear on right leg, allodynia. June 2004: Oxycodone 30mg, Topamax 200mg, Zyprexa 7.5mg, Amitriptyline 75mg, Neurontin 400mg. Pain 10/10. January 2005, Nabilone 10mg/day and Topamax 200mg/day. July 2007, Amitriptyline 25mg/day opiates and Neurontin discontinued. Weight bear fully, function at home. Pain 6/10.

Pt, #2 - 41yo. CRPS II following left arm brachial plexus injury. Neuropathic pain 10/10, constipation, nausea, and vomiting. Fentanyl patch 125mg 72 hour, Gabapentine 200mg, Wellbutrin 200mg and Trimapramine 150mg. October 2006, Nabilone 10mg/day. July 2007: Gabapentin and Fentanyl discontinued. Pain 6/10, no constipation or nausea.

Pt, #3 - 21yo. CRPS I following right knee arthroscopy. Unable to weight bear on right leg, swelling to right calf. Pain 10/10. Morphine 240mg/day. December 2006, Nabilone 6mg/day. June 2007, able to weight bear, reduced swelling. Pain 4/10. Walking. Morphine 160mg/day. Enrolled in a hair dressing course.

Pt, #4 - 49yo. with CRPS I, all extremities following MVA, June 2000. Burning pain and cold sensation throughout the body, allodynia. Thyroid function normal. Pain 10/10. Medications: Codeine 240mg, Topamax 100mg, Prozac 20mg, and Olanzapine 7.5mg. July 2005, Nabilone 1mg.

October 2005 pain 4/10. Codeine discontinued. Warm, allodynia reduced.

Pt, #5 – 40yo. CRPS II, soft tissue injury to right arm October 2003. Swelling, severe burning pain, allodynia, autonomic changes of the right arm and hand. Pain 10/10. Morphine 90mg, Effexor 150mg, Trileptal 1500mg/day. September 2007, Nabilone 3mg/day. December 2007, off Morphine, sleeping well, working full time. Pain 4/10.

**CONCLUSIONS:** Cannabinoid seems efficacious in the management of CRPS patients, resulted in reduction of pain intensity (40%-60%), near complete opiate elimination and functional improvement.

## P60

### FEAR OF PAIN MODERATES THE EFFECTS OF ALEXITHYMIA AND COGNITIVE BIASES ON HEAT PAIN INTENSITY AND UNPLEASANTNESS RATINGS

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**AIM:** Cognitive biases toward threatening pain cues are proposed to influence the association between fear of pain and pain experiences. Recent studies have shown an association between (1) alexithymia, a disturbance in affective consciousness and cognition, and (2) pain intensity and sensitivity in clinical and healthy populations. The present study examined the relationship between cognitive biases toward threatening pain cues, alexithymia, and pain intensity and unpleasantness ratings among typical individuals with low and high levels of fear of pain.

**METHODS:** The Fear of Pain Questionnaire-III, Toronto Alexithymia Scale-20, and the modified Stroop number task using sensory pain and affective pain words were administered to 66 undergraduate university students (mean age = 20.56, SD = 3.86 yrs). Heat pain stimuli were delivered using a Medoc TSA-II stimulator. Four thermal stimuli (46-49°C) were randomly administered to the dominant forearm (16 mm<sup>2</sup> thermode; baseline temp = 32°C; ramp rate = 4°C/sec, peak temp held for 5 sec; inter-stimulus interval = 30 sec). Participants rated thermal stimuli using a 0-100 numeric rating scale for pain intensity and unpleasantness.

**RESULTS:** Multiple linear regression analysis revealed that among individuals low on fear of pain, alexithymia and difference in reaction time ( $\Delta$ RT) between sensory pain and control words predicted pain unpleasantness ratings ( $F(3,29)=4.25$ ;  $R^2=.31$ ;  $p=.013$ ) whereas only alexithymia predicted pain intensity ratings ( $F(3,29)=3.48$ ;  $R^2=.27$ ;  $p=.028$ ). In contrast, among individuals high on fear of pain, there were no significant predictors of pain intensity or pain unpleasantness ratings.

**CONCLUSIONS:** Results suggest a higher level of alexithymia and a greater cognitive bias toward threatening sensory pain words predict pain unpleasantness ratings at low levels of fear of pain only. The difficulty of individuals with alexithymia to distinguish between emotional and physical sensations might explain the relationship between cognitive biases for sensory pain words and pain unpleasantness ratings. Future studies should investigate if fear of pain acts as a protective factor from alexithymia in pain ratings.

## P61

### PREGABALIN FOR MANAGEMENT OF FIBROMYALGIA (FM): A 14-WEEK, RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED, MONOTHERAPY TRIAL (STUDY A0081100)

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**AIM:** Pregabalin reduces pain and other symptoms relevant to fibromyalgia (FM) in US population. This trial evaluated the safety and efficacy of pregabalin for treating pain and other key symptoms in FM patients from countries outside the USA.

**METHODS:** A randomized, double-blind, placebo-controlled trial conducted in Europe, Canada, Mexico, Asia, Australia, and Venezuela. Patients meeting ACR criteria for FM and having a pain Visual Analog Scale score  $\geq 40$  mm were randomized to pregabalin or placebo for 14 weeks. The primary efficacy parameter was the endpoint mean pain score. Additional efficacy parameters included Patient Global Impression of Change (PGIC), Medical Outcome Study (MOS) Sleep Disturbance subscale and Fibromyalgia Impact Questionnaire (FIQ).

**RESULTS:** 747 patients were randomized, 51% from Europe and 22% from Canada. Differences from placebo in mean change from baseline to endpoint in pain score were: 300 mg/d, -0.34 ( $P=.168$ ); 450 mg/d, -0.54,  $P=.0164$ ; 600 mg/d, -0.23,  $P=.234$ ). On the PGIC, 67% of 300-mg/d ( $P=.054$ ), 73% of 450-mg/d ( $P=.002$ ), and 69% of 600-mg/d ( $P=.023$ ) patients reported improvement compared to 56% of placebo patients. All dose groups demonstrated significant improvements in the MOS Sleep Disturbance subscale, and the 450 mg/d dose group was associated with significant improvements in FIQ total score. Sub-analysis of the Canadian population revealed similar response profiles for each of these efficacy parameters. The most common AEs were dizziness and somnolence.

**CONCLUSIONS:** In this study conducted in Europe, Canada and other countries outside the US, pregabalin demonstrated efficacy across key FM symptoms. No new safety concerns were identified.

## P62

### OPTIMISM PREDICTS BETTER COPING WITH MENSTRUAL PAIN: A DAILY DIARY STUDY

**Madelon Peters PhD**, Maastricht University, Maastricht

**AIM:** Optimism has been found to lead to better adaptation to chronic illnesses. To better understand the mechanisms, in the present study we examined the effect of optimism on mood and cognitions regarding menstrual pain. Menstrual pain is recurrent and highly predictable pain.

**METHODS:** 47 young women with monthly menstrual pain complaints took part in a daily diary study. Participants were signalled 8 times a day by an electronic diary and answered questions on mood, pain intensity, pain cognitions and activity level from one week before menstruation until one week after menstruation. Dispositional optimism was assessed before diary assessment commenced.

**RESULTS:** More optimistic women had more positive mood throughout the diary assessment period. However, pain during menses deteriorated mood to a similar degree in all women, independent of their level of optimism. Optimistic women catastrophized less about pain, and this was especially prominent in the week before menstruation.

**CONCLUSIONS:** Optimism may protect against negative expectancies about upcoming pain. Menstrual pain complaints seems to be a very suitable model to study the effects of psychological factors on pain, since periods of pain and no pain occur in a highly predictable manner.

## P63

### UNDERSTANDING CAREGIVER JUDGMENT OF INFANT PAIN: CONTRASTS OF PARENTS, NURSES AND PAEDIATRICIANS

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**AIM:** Research suggests that caregivers' beliefs pertaining to infant pain and the infant pain cues perceived to be important play an important role in paediatric pain assessment and management. Following up on a recent quasi-experimental study (Pillai Riddell & Craig, 2007) reporting on caregiver background and age differences in actual infant pain judgments, the current study aimed to clarify these findings by: 1) analyzing caregivers' pain beliefs and the cues they use to make pain assessments and 2) examining how the wording of belief questions influenced caregivers' responses.

**METHODS:** After making pain judgments based on video footage of infants (aged 2-18 months) receiving immunizations, parents', nurses' and

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paediatricians' were required to respond to a pain beliefs questionnaire and an importance of cues questionnaire.

**RESULTS:** Parents generally differed from paediatricians. Parents tended to have less optimal beliefs regarding medicating the youngest of infants, were more influenced by question wording and reported using many more cues when judging older infants. In terms of beliefs, influence of question wording and cue utilization, nurses tended to fall in-between both groups displaying similarities to both parents and paediatricians.

**CONCLUSIONS:** Paralleling the original findings on pain judgments, these findings suggest that parents differ from paediatricians in their pain beliefs and the cues they use to make pain judgments. Moreover, some similarities were found between parents and nurses, and between nurses and paediatricians. Finally, caution must be taken when interpreting research pertaining to beliefs about infant pain, as question wording appears to influence interpretation.

### P64

#### INTAKE ASSESSMENT OF PROBLEMATIC USE OF OPIOIDS IN A CHRONIC NON-CANCER PAIN CLINIC: A CHART REVIEW

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**AIM:** The aim of this project is to assess the quality, utility, and feasibility of a change in the standard of care recently implemented in an ambulatory chronic non-cancer pain (CNCP) clinic. Our experience instituting an intake assessment of new patients to assess the risk of problematic use of opioids will contribute to filling in a blank in the literature and clinical practice by setting an example of an application of the "universal precautions" approach, a gold standard in the assessment of problematic substance use, in CNCP clinics.

**METHODS:** Intake assessments for risk of problematic use were reviewed from the beginning of the change in the standard of care in July of 2008 until October 2008. Data was examined for completeness and the clinical research coordinator met with health care providers (HCPs) from the Wasser Pain Management Centre to discuss the generalized preliminary findings and obtain their feedback. HCPs were asked about areas of concern and barriers to completing the assessments as well as to identify the items that were most clinically relevant and helpful.

**RESULTS:** Feedback from HCPs combined with an analysis of the intake assessments identified that while some standard measures were considered particularly helpful, other items were seen as repetitive and time-consuming.

**CONCLUSIONS:** A number of important factors need to be examined uniformly in new patients presenting to CNCP clinics in order to assess risk for problematic use of opioids, but to facilitate the practice, the intake assessment must be concise, clinically relevant, and feasible given practitioner time-constraints.

### P65

#### MEDICAL PAIN MANAGEMENT - INFLUENCING NURSING PAIN MANAGEMENT PRACTICE

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**AIM:** The aim of this study was to determine if using an outcomes focused knowledge translation framework and action focused research methodology would integrate nursing practice changes in pain management on two medical units.

**METHODS:** Research design: Model of Improvement, Knowledge Translation & Participatory Action Research.

**Research methods included:** pain education needs assessment of nursing staff, focused question/interview and pain knowledge questionnaire (pre and post intervention), chart audit (pre and post intervention).

**Intervention used:** pain education guided by pain education needs assessment.

**RESULTS:** The results showed improved documentation of pain assessment and follow-up charting. Nurses pain management knowledge increased following interventions tailored to the specific pain education needs identified. In addition the results from the focused question/interviews were collated and common themes outlined.

**CONCLUSIONS:** In conclusion, improved nursing pain management practices occurred on two medical units when both a knowledge translation framework and participatory action based education were used. Future studies should include an additional evaluation to determine if pain care practice changes continue to be maintained on these medical units.

### P66

#### PAIN AND ACTIVITY LIMITATIONS IN PEOPLE UNDERGOING INGUINAL HERNIA SURGERY: A QUALITATIVE INVESTIGATION

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**AIM:** Chronic post-surgical pain (CPS) is a common complication after inguinal hernia repair, with up to 30% of patients reporting this postoperative outcome. Fear-avoidance models propose that patients who are afraid of pain avoid activities that may cause pain, and as such, may be more likely to suffer chronic pain. There is potential for these psychological models to explain why some patients limit activity after surgery and develop CPS whilst others do not (Lethem, 1983). This qualitative study explores the surgical care pathway, identifying pain coping strategies and perceived causes of activity limitations.

**METHODS:** A longitudinal qualitative approach was used. Male patients (aged 34-77 years) undergoing open and laparoscopic hernia surgery were interviewed two weeks preoperatively, two weeks and four months postoperatively. A subgroup of patients with chronic pain at four months postoperatively were also interviewed. Data were analysed using Interpretative Phenomenological Analysis (IPA).

**RESULTS:** Our findings suggest that, in this context, fear of pain had little impact on activity restrictions after inguinal hernia surgery. Limitation of activity was seen, in participants with and without pain, because they believed this would limit damage or prevent hernia recurrence. Participants did restrict activity in response to pain but, for many, this was because pain was perceived as a marker of damage; cognitions, not fear, mediated the relationship between impairment (pain) and activity limitation (see Johnston, 1996).

**CONCLUSIONS:** Focussing on patient's cognitive representations of the effect of activity on the wound site may be a useful strategy in supporting return to activity following hernia surgery.

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### P67

#### A DOUBLE BLIND, RANDOMISED, PLACEBO CONTROLLED, PARALLEL GROUP STUDY OF SATIVEX® IN THE RELIEF OF CENTRAL NEUROPATHIC PAIN IN SUBJECTS WITH MULTIPLE SCLEROSIS – A RANDOMIZED WITHDRAWAL STUDY

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**AIM:** Sativex® (THC:CBD, an endocannabinoid system modulator) is licensed in Canada for the relief of central neuropathic pain in multiple

sclerosis (MS) and advanced cancer pain. A randomized withdrawal study was performed to assess maintenance of response to Sativex®.

**METHODS:** Following a 12-week randomized, double-blind, placebo-controlled, parallel group study of central neuropathic pain in MS, consenting patients went on to receive open-label Sativex® in a 12-week follow-on study. They were then randomised to Sativex® or placebo ('withdrawn') for a maximum of four weeks. Time to treatment failure was the primary outcome measure. Secondary outcome measures included 0-10 Numerical Rating Scale (NRS-11) assessments of pain, MS symptoms and sleep quality. Responder analysis (loss of response), Patient's Global Impression of Change (PGIC), and Neuropathic Pain Scale (NPS) were also assessed.

**RESULTS:** Of the 58 patients completing the open-label phase, 52 were screened and 42 (n=21 Sativex®, n=21 placebo) were randomised and completed the randomized withdrawal phase. Time to treatment failure was in favor of Sativex (p=0.040).

More patients reported a ≥20% loss of response on placebo (Sativex 14% vs placebo 38%, p=0.075).

In addition, all secondary endpoints were in favor of Sativex®, in particular the mean change from baseline NRS-11 assessments of pain (p=0.028), spasm (p=0.095) and sleep quality (p=0.015) as well as the NPS, PGIC and NRS-11 assessments of spasticity and bladder dysfunction.

**CONCLUSIONS:** The randomized withdrawal from Sativex® precipitated a worsening in all of the outcome measures, while maintenance of effect of Sativex® was demonstrated across a number of symptoms.

## P68

### DETERMINING THE NEEDS OF MANY IN DEVELOPING A PEDIATRIC CHRONIC PAIN CLINIC

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**AIM:** To develop a pediatric chronic pain clinic that meets the needs of the children, families and health care professionals of the Stollery Children's Hospital catchment areas.

**METHODS:** An interdisciplinary committee met every two months between May 2007 – March 2008 to develop the goals and operational requirements for the clinic. A needs assessment survey of physicians and health care professionals involved in the care of children was completed in November 2007.

Once the clinic opened, 14 parents completed a survey prior to their first appointment. They were asked to rank the importance of informational needs about various aspects of chronic pain and various treatment options.

**RESULTS:** Needs Assessment Survey return rate was low (~10%). Data included potential pain diagnoses, reasons for referral to the pain clinic, and estimated number of referrals.

We developed an information pamphlet for health care professionals.

Parents surveyed desired information about the causes of their child's pain and various treatment options. Having the pain team be there for them and having reading materials about chronic pain were ranked as important.

Books regarding pediatric chronic pain were purchased for loan to parents, and Parent Pain information sessions are currently being planned for implementation in conjunction with the next Pain 101 session for the children.

**CONCLUSIONS:** Using these approaches allowed many disciplines and service providers the opportunity to be involved in the creation of this program before the commencement of service delivery. Determining the needs from the parents assisted the clinic staff in creating a program to meet their needs.

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## P69

### PROTEINASE ACTIVATED RECEPTOR-4 (PAR4) ACTIVATION CAUSES SENSITISATION OF JOINT PRIMARY AFFERENTS VIA A TRPV1-INDEPENDENT BUT BRADYKININ B2 RECEPTOR-DEPENDENT MECHANISM

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**AIM:** The present study examined the effect of proteinase activated receptor 4 (PAR4) activation on joint nociception in normal rat knee joints and investigated potential roles for the TRPV1 receptor and the bradykinin B2 receptor in this process.

**METHODS:** Electrophysiological recordings were made from knee joint primary afferents in male Wistar rats (250-450g) during both normal (non-noxious) and hyper (noxious) rotations of the knee joint. Afferent fibre firing rate was recorded during 10 second rotations made both before and over a period of 15 minutes post close intra-arterial injection of 10<sup>-9</sup> – 10<sup>-5</sup> mol of the PAR4 activating peptide, AYPGKF-NH<sub>2</sub>, or the inactive peptide, YAPGKF-NH<sub>2</sub> (100µl bolus). Rats were either naive or pre-treated with the selective PAR4 antagonist, pepducin P4pal-10 (100µg i.p.), the TRPV1 antagonist, SB-366791 (500µg/kg i.p. 30min prior to recordings) or the bradykinin B2 receptor antagonist, HOE-140 (50µg/kg i.p. 1h prior to recordings). Results were expressed as % change in firing rate compared to baseline recordings and analysed using 2-way ANOVA and Bonferroni post-tests; P<0.05 was considered statistically significant.

**RESULTS:** Local administration of 10<sup>-5</sup> mol of AYPGKF-NH<sub>2</sub> to normal knee joints significantly increased firing rates of joint primary afferent fibres during both normal and noxious rotation of the joint (p<0.001 compared to YAPGKF-NH<sub>2</sub>, n=5-10). The inactive control peptide, YAPGKF-NH<sub>2</sub> was without effect. The increased firing rate was maximal at 7 minutes post administration of AYPGKF-NH<sub>2</sub> and remained significantly elevated over 15 minutes. Systemic pre-treatment with the PAR4 antagonist, pepducin P4pal-10, inhibited the increase in firing rates seen after administration of AYPGKF-NH<sub>2</sub>, providing evidence that this increase was due to PAR4 activation. Pre-treatment with HOE-140, but not SB-366791, also blocked the increase in firing rates during both the non-noxious and noxious rotations.

**CONCLUSIONS:** This data reveal that in normal rat knee joints PAR4 activation increases the sensitisation of joint primary afferents in response to mechanical manipulation. This PAR4-induced sensitisation is independent of the TRPV1 receptor but relies on B2 receptor activation, suggesting a role for kinins in this process.

## P70

### PREGABALIN IN FIBROMYALGIA (FM) PATIENTS: TREATMENT EFFECTS ON CHANGES IN PAIN AND CHANGES IN SLEEP QUALITY

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**AIM:** Pregabalin is effective for treating pain and consistently improves sleep in FM. This study explores the relationship between changes in pain and changes in sleep quality.

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**METHODS:** Patients meeting ACR FM criteria with VAS score  $\geq 40$  mm were treated for 8-14 weeks in 3 randomized, double-blind, placebo-controlled trials; 2022 patients received 150, 300, 450 or 600 mg/d pregabalin or placebo. In each study, endpoint Mean Pain Score (MPS) was the primary endpoint and Mean Sleep Quality Score (MSQS) a secondary endpoint. Each was measured on an 11 point numeric rating scale using a daily diary (10 = worst). Pearson correlations explored relationships between changes in pain and changes in sleep.

**RESULTS:** Baseline MPS and MSQS were 6.9 and 6.5, respectively. Significant endpoint MPS differences from placebo were observed: 300 (-0.52), 450 (-0.77), 600 (-0.83) mg/d (all  $p < .0001$ ). Significant endpoint MSQS improvements vs. placebo were demonstrated: -0.37 (150 mg/d,  $p = 0.102$ ), -0.75 (300 mg/d), -1.10 (450 mg/d), and -1.28 (600 mg/d) (all  $p < 0.001$ ). Correlations between changes in pain and changes in sleep were: 0.71 (placebo), 0.65 (150 mg/d), 0.73 (300 mg/d), 0.66 (450 mg/d), 0.67 (600 mg/d) (all  $p < .0001$ ). Adverse events were consistent with known side effects of pregabalin; dizziness and somnolence were the most frequently reported AEs.

**CONCLUSIONS:** Pregabalin treatment of FM was associated with significant improvements in pain and sleep quality. Reductions in pain were strongly correlated with improvement in sleep quality. Despite these strong linear correlations, a cause/effect relationship between pain and sleep should not be assumed.

## P71

### POST-OPERATIVE NAUSEA AND VOMITING FOLLOWING SPINAL ANESTHESIA FOR TOTAL JOINT ARTHROPLASTY

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**AIM:** To determine the incidence of post-operative nausea and vomiting in patients following total hip or total knee arthroplasty who have received spinal anesthesia.

**METHODS:** A prospective chart review was conducted between March and April 2008 at the Holland Orthopaedic and Arthritic Centre. In-patient charts (N = 94) were audited for 72 hours post-operatively. All patients received spinal anesthetic with bupivacaine 0.5% 10-15mg with fentanyl 10-15mcg and post-operative multi-modal analgesia including celecoxib, gabapentin, acetaminophen and IV or oral opioids. Variables examined included type of surgical procedure, post-operative nausea and vomiting risk factors (non-smoker, history of nausea after surgery, post-operative opioid use and gender), and peri-operative anti-emetic administration

**RESULTS:** 60 patients were female with a mean age of 65. Surgical procedures included bilateral knee arthroplasty (n = 4), uni-lateral knee arthroplasty (n = 56), and hip arthroplasty (n = 34). The mean PONV risk factor score was 49/80. 51% of patients experienced post-operative nausea and vomiting in the first 72 hours after surgery and required 1 or more anti-emetic to relieve symptoms. The majority of patients (n = 38) experienced PONV between 5 and 24 hours after surgery. Of those experiencing PONV, 14 patients received intra-operative anti-emetic prophylaxis treatment.

**CONCLUSIONS:** Patients who receive spinal anesthesia with fentanyl for total joint arthroplasty in conjunction with multi-modal analgesia experience PONV. This represents a reduction in PONV compared to spinal anesthesia with morphine or general anesthesia. Future studies should focus on methods to reduce PONV.

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## P72

### PAIN SEVERITY, DISABILITY, SOCIAL SUPPORT AND AFFECTIVE DISTRESS IN DSM-IV-TR PAIN DISORDER DIAGNOSES

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**AIM:** We investigated differences in pain severity, disability, social support and affective distress in groups of chronic non-cancer pain (CNCP) patients diagnosed by their pain physicians as having a Pain Disorder (PD-1; with clear biomedical but no clear psychological factors affecting presentation), Pain Disorder Associated With Both Psychological Factors and a General Medical Condition (PD-2), or Pain Disorder Associated with Psychological Factors (PD-3).

**METHODS:** Cross Sectional Study involving 98 consecutive referrals to a tertiary care pain clinic for whom DMS-IV-TR Pain Disorder diagnoses had been made by their physician. Physicians provided this diagnosis using an explicated basis for the Pain Disorder distinctions (Mailis et al, in press). Patients completed the Comprehensive Pain Evaluation Questionnaire (CPEQ; Jamison et al, 1994).

**RESULTS:** There were statistically significant differences between the three Pain Disorder groups with respect to pain severity ( $p = .009$ ), pain related disability ( $p = .002$ ), and affective distress ( $p = .001$ ) but not for social support ( $p = .161$ ). PD-2 and PD-3 patients had higher levels of pain severity, disability and affective distress (and poorer social support) than PD-1 patients.

**CONCLUSIONS:** Our results using a brief questionnaire indicate differences between patients with solely biomedical factors and those with psychological factors contributing to presentation, whether or not biomedical factors are also considered significant in the latter.

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## P73

### PATTERNS OF PAIN MEDICATION USAGE AMONG PERSONS REFERRED TO AN ADULT AMBULATORY INTERDISCIPLINARY CHRONIC PAIN TREATMENT CENTRE

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**AIM:** To explore the patterns of pain medication usage by chronic pain patients.

**METHODS:** Retrospective chart review of a pre-assessment questionnaire of all patients evaluated by the CHR CPC between July 1, 2000 and October 31, 2003 and discharged prior to April 30, 2007. All prior and current pain medications were documented by absolute number and according to 14 categories (NSAID, opioid, anticonvulsant, tricyclic antidepressant, etc). Summary statistics were obtained for both the cohort and the subgroups (musculoskeletal, pelvic pain, headache). The relationships among pain intensity, neuropathic pain symptoms (stabbing/ burning) and specific medications were explored through correlational,  $t$ -test, and contingency-table analysis. Patterns of co-occurrence of the medication classes were explored using multiple correspondence analysis.

**RESULTS:** 484 patients, average age 40 years, average pain levels 6.3/10 (SD 1.8), 15% male 85% female. 172 musculoskeletal, 118 headache, 194 female pelvic pain. The average number of different pain medications trialed was 5.9. Close to 50% (46.9) had trialed medications in only 3 or fewer categories. 227 patients reported burning or stabbing. An additional

126 reported both burning and stabbing. Of these 353 patients, 46% had not trialed a neuropathic modifier (anticonvulsant, tricyclic or both), while the majority in all subgroups had received an NSAID. Patients who had trialed major opioids (excluding combination analgesics with opioids) had higher pain scores and had trialed a greater number of medications in a wider range of categories.

**CONCLUSIONS:** There is considerable room for improvement in pharmacologic pain management particularly in patients with neuropathic pain symptoms of burning and stabbing.

## P74

### THE PRACTICAL AND ETHICAL ISSUES OF CHRONIC PAIN TRIAGE IN THE DELIVERY OF CHRONIC PAIN – THE NOVA SCOTIA EXPERIENCE

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**AIM:** The aim of this poster is to examine the role of the triage process in the delivery of chronic pain services. It is also to examine the practical and ethical implications of the triage criteria used for determining access to scarce chronic pain services.

**METHODS:** Little evidence is available in the chronic pain literature to reflect the outcomes of triage processes used for chronic pain referrals into chronic pain clinics. Lynch (2006) conducted a survey of Canadian Chronic Pain Centres and developed triage criteria for use at the Pain Management Unit (PMU) in Halifax, Nova Scotia. This triage criteria was initially used in the Nova Scotia Redistribution Project.

**The categories of referral triage identified included:** urgent, fast-track or regular referral status on chronic pain services.

**RESULTS:** We report the referral patterns from April 2008 to September 2008, to the Capital Health Pain Management Unit (PMU) and the number triaged into the various triage categories. As primary care chronic pain management services are a new addition to the PMU, we report the number of referrals that are now waitlisted for initial chronic pain assessments at the PMU. Additionally, we report the need to re-evaluate our fast-track criteria, it has been identified that the current criteria has impacted our regular waitlist.

**CONCLUSIONS:** 1) A shift to a provincial coordinated referral process has highlighted the need to re-examine the ethical and practical implications of the criteria to the current chronic pain waitlist processes.

2) The application of current triage criteria on chronic pain referrals to the CH PMU has both ethical and practical implications for access to scarce CP services in CH PMU.

3) The data supports the assertion that criteria for CP triage ought to be developed through both an ethical framework providing a standardized, transparent process and the available “best practice” literature.

4) This examination of the ethical and practical issues related to CP triage and need to revise CP triage criteria has implications for other CP Centres across Canada.

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## P75

### VITAMIN D SUPPLEMENTATION: AN IMPACT ON MUSCULOSKELETAL PAIN AND PHYSICAL CAPABILITIES

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**AIM:** There is experimental and clinical data suggesting that vitamin D deficiency, evident or subclinical, is common, and related to decreased physical capabilities and musculoskeletal pain, which can be difficult to

treat even with opioid analgesics. Vitamin D deficiency found in 93% of children and adults suffering from muscle aches and disease associated bone pain [1]. There is a significant controversy regarding the effectiveness of vitamin D supplementation in treatment of these conditions, however, no systematic review exists which deciphers the accumulating evidence now available.

The **OBJECTIVE** of this study is to assess the provision of oral vitamin D supplements to improve physical capabilities and alleviate musculoskeletal pain in patients with hypovitaminosis D.

**METHODS:** A search of the Cochrane Library, OVID, EMBASE, and PUBMED was conducted in July - October of 2008 looking for randomized controlled trials comparing any vitamin D supplementation (with or without calcium) given for at least a four week period for people with hypovitaminosis D and accompanying physical manifestations of pain or deficit. The terms/MeSH search items included pain, vitamin D, vitamin D/therapeutic use, activity of daily living.

**RESULTS:** The search revealed 17 articles. Six trials encompassing 4065 patients were included in the determination of efficacy. These trials focused on vitamin D deficiency and the treatment of musculoskeletal manifestations (n=335, [2-4]) and the improvement of physical capabilities (n=3730, [5-7]) of patients. The results indicate no evidence that vitamin D supplementation improved physical capabilities of participants and still controversial regarding alleviated musculoskeletal pain.

**CONCLUSIONS:** In spite of preliminary experimental and clinical data suggesting positive effect of vitamin D on physical capabilities and pain alleviation in people with hypovitaminosis D, there is no evidence based support for the use of vitamin D in the treatment of decrease in activities of daily living. The data regarding use of vitamin D for treatment of diffuse musculoskeletal pain remains controversial. Further research is required to understand the interrelations between hypovitaminosis D, musculoskeletal pain and decline in physical capabilities in order to address any potentially beneficial therapeutic options.

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## P76

### METHADONE PROTOCOL FOR CHRONIC NON-CANCER IN A TERTIARY CARE LEVEL PAIN MANAGEMENT UNIT

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**AIM:** To present pilot data on initial utilization of a methadone protocol developed at the Pain Management Unit, Queen Elizabeth II Health Sciences Centre (QEIIHSC), in Halifax, Nova Scotia.

With advanced knowledge of methadone for the treatment of chronic pain (Lynch, 2005), there has been an increase in its use. In our clinical experience we identified the need to develop and implement a standardized methadone protocol.

Last year we reported on the development of a protocol along with specific documents to facilitate easy access to information within clinic patient charts. We have now completed a pilot project using this protocol.

**METHODS:** Two of the Pain Management clinic physicians used the protocol in the care of fifteen patients, and provided feedback.

**RESULTS:** The physicians were satisfied with the methadone protocol and the supporting documents. Revisions to the flow sheet were required in order to simplify and provide quick access to information. The methadone protocol has proved useful with regard to facilitation of prescription renewals and dosage/titration queries.

**CONCLUSIONS:** A protocol has been developed and piloted in the tertiary care pain management unit at the QEIIHSC. This protocol has

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been found to be effective in allowing a systematic approach to the initiation, titration and maintenance of methadone treatment. We will now proceed to full implementation of the protocol among all physicians. Further study will determine the impact of this protocol on patient safety.

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### P77

#### A COMPARISON OF QUALITY OF LIFE AND HEALTH CARE UTILIZATION AMONG PATIENTS WITH OR WITHOUT NEUROPATHIC PAIN IN SPECIFIC POLYNEUROPATHY SYNDROMES

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**AIM:** With prevalence estimated at 2%, chronic polyneuropathy (PN) is a relatively common impairment. The morbidities of PN can take the form of any combination of motor, sensory or autonomic dysfunction, and may include neuropathic pain (NeP), which may occur in 50% of cases. We hypothesized that disability resulting from PN is severely impacted upon by the presence of NeP. We analyzed quality of life (QoL) and pain-associated measures, along with health care resource utilization (HCRU) amongst PN patients with and without NeP.

**METHODS:** We prospectively identified PN patients presenting to a tertiary care neuromuscular clinic, with stratification based upon PN etiology and NeP presence or absence. We analyzed neuropathy severity (Toronto Clinical Neuropathy Score (TCNS)), pain quantity and quality (Visual Analogue Scale (VAS) score, Brief Pain Inventory (BPI)), QoL and health status measures (EuroQol 5 Domains (EQ-5D), Medical Outcomes Sleep Study Scale (MOSSS), Hospital Anxiety and Depression Scale (HADS), Short Form 36 Health Survey (SF-36)) and HCRU measures.

**RESULTS:** Although there was no significant difference between TCNS scores, there were significantly worse EQ-5D index, health rating, MOSS, HADS and SF-36 scores amongst PN patients with NeP, and greater HCRU for patients with NeP.

**CONCLUSIONS:** While further studies are needed to determine the best ways to manage NeP in patients with PN, it is apparent that NeP poses a significant physiological, psychological and functional burden on PN patients in addition to the disabilities imposed by the PN. Subsequently, NeP contributes to a further burden on the health care system.

### P78

#### GENDER DIFFERENCES IN PAIN DESCRIPTION AND PAIN COPING PREDICTORS IN UROGENITAL CHRONIC PELVIC PAIN SYNDROMES

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**AIM:** Due to similar physical symptoms and negative psychosocial impact, male chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS) and female interstitial cystitis/painful bladder syndrome (IC/PBS) samples were examined for differences in pain experience and endorsement of pain coping strategies.

**METHODS:** Men diagnosed with CP/CPPS (N=253; recruited from 6 American & 1 Canadian tertiary clinical centers) and women with IC/PBS (N=120; 1 Canadian & 2 American) completed demographic information, the McGill (MPQ-SF), & the Chronic Pain Coping Inventory (CPCI). Pain descriptives were summed and regressions run to examine pain coping associations with pain reported across genders.

**RESULTS:** CP/CPPS males 4 highest sensory pain descriptors were sharp

(36%), hot-burning (41%), aching (67%) and tender (52%). IC/PBS women's highest 4 were aching (77%), tender (71%), cramping (58%), and hot-burning (55%), also stabbing (44%) and sharp (39%) were uniquely endorsed by women. For affective pain males reported tiring-exhausting (37%) while women endorsed all items (tiring-exhausting 77%; sickening 50%; fearful 38%; punishing cruel 38%). CP/CPPS sensory pain was predicted by greater guarding and coping self-statements, while affective pain was predicted by greater sedentary rest and less relaxation. IC/PBS sensory pain was predicted by greater relaxation, while sedentary rest predicted affective pain marginally.

**CONCLUSIONS:** Results show gender differences in both sensory and affective pain experience in UCPPS samples. Further, there are differences in types of pain coping reported across gender in sensory pain but little difference in affective pain. These data suggest medical and psychosocial pain treatment approaches may be tailored to better address these profiles.

### P79

#### YOGA FOR CHRONIC PAIN MANAGEMENT: EXPLORING THE LIVED EXPERIENCE OF AN EIGHT- WEEK YOGA PROGRAM

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**AIM:** To explore what people with chronic pain discover and describe about their pain experience when practicing yoga as a treatment modality.

**METHODS:** A consecutive convenience sample was recruited in the Multidisciplinary Pain Centre at the University of Alberta Hospital. Eight adult patients (six women), agreed to participate in an eight-week Hatha yoga program, including weekly group sessions and at-home practice. Data were gathered from participant observation and in-depth interviews. Interviews explored the experience of practicing yoga and its relationship to the participant's pain experience. Using a hermeneutic phenomenological framework, an inductive analysis of the interviews explored emergent themes from participants' descriptions of their experience.

**RESULTS:** Analyses found five major themes. Themes included: increased self-awareness through practice; transformed relationship with the painful body; living life with chronic pain involves accepting significant challenges; setting aside time and space for practice is critical; and that sharing experiences amongst a supportive group increased personal insight.

**CONCLUSIONS:** Participants appeared to see themselves as more than just their pain and reframed what it meant to live with chronic pain. Some participants reported that the sensory aspects of pain did not change but that pain became less bothersome because they could control the degree to which pain would interfere with their day-to-day lives. Other participants reported less frequent or less intense pain episodes because they could recognize their body's signals and adjust themselves accordingly to alleviate painful sensations. The findings suggest that yoga has significant potential to have a positive impact on individuals with chronic pain.

### P80

#### TAPENTADOL IMMEDIATE RELEASE IS ASSOCIATED WITH IMPROVED GASTROINTESTINAL TOLERABILITY COMPARED WITH OXYCODONE IMMEDIATE RELEASE OVER 90 DAYS IN PATIENTS WITH LOWER BACK OR OSTEOARTHRITIS PAIN

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**AIM:** Tapentadol is a novel, single-molecule analgesic with a dual mode of action:  $\mu$ -opioid receptor agonism and norepinephrine reuptake inhibition.

A randomized, double-blind, active-control, parallel group, multicenter trial of patients with low back pain or pain from osteoarthritis of the knee or hip studied the tolerability of long-term exposure (90 days) to tapentadol immediate release (IR).

**METHODS:** Patients (N = 878) were randomly assigned in a 4:1 ratio to a flexible dose of either tapentadol IR (50 or 100 mg/dose; maximum 600 mg/day) or oxycodone IR (10 or 15 mg/dose; maximum 90 mg/day) every 4 to 6 hours. Study drug was not taken by 29 patients who were excluded from all analyses. The Cochran-Mantel-Haenszel test was used to estimate odds ratios for treatment-emergent nausea, vomiting, constipation, somnolence, and dizziness.

**RESULTS:** Both treatment groups showed similar pain scores throughout the study. Treatment-emergent adverse events (TEAEs) in the tapentadol IR group (76%) were lower than in the oxycodone IR group (83%). The most common TEAEs for both groups were nausea, vomiting, dizziness, constipation, headache, and somnolence. The incidences of nausea, vomiting, constipation, and the composite of nausea/vomiting were significantly lower in the tapentadol IR group than in the oxycodone IR group (P < 0.001 for all treatment comparisons). The odds ratios and corresponding confidence intervals for nausea, vomiting, constipation, and composite of nausea/vomiting were 0.542 (0.37, 0.79), 0.476 (0.32, 0.70), 0.396 (0.26, 0.59), and 0.458 (0.33, 0.65), respectively; indicating more favorable incidence rates for the tapentadol IR group compared with the oxycodone IR group. The incidences of somnolence or dizziness were not significantly different between the treatment groups.

**CONCLUSIONS:** These findings show tapentadol IR is associated with substantially improved gastrointestinal tolerability compared with oxycodone IR at doses providing similar pain relief.

## P81

### A RETROSPECTIVE REVIEW OF MORPHINE ADMINISTRATION AND MONITORING AND THE PREVALENCE OF ADVERSE EVENTS IN A PAEDIATRIC SETTING

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**AIM:** Morphine monitoring guidelines are outdated (1992) and do not reflect current standards of practice, and therefore may be resulting in sub-optimal pain management. The objective of the study was to detect the prevalence of morphine adverse drug reactions (ADRs) associated with intravenous (IV) bolus administration by an evidence-based monitoring protocol coinciding with the peak drug effect for IV bolus morphine.

**METHODS:** Retrospective chart reviews of 270 patient records to assess vital sign monitoring at baseline, 10 and 20 minutes post administration for initial morphine dose and at 15 minutes for subsequent doses.

**RESULTS:** Complete documentation of vital signs (heart rate, respiratory rate, blood pressure, oxygen saturation, sedation, pain score) was evident in 48% of records at baseline (n = 130), 44% at 10 minutes (n = 119), and 37% at 20 minutes (n = 99). Low oxygen saturation scores (below 94%) were seen in 5 patients at baseline, 5 patients at 10 min, and 7 patients at 20 minutes post morphine administration. There were 784 subsequent doses overall and of those, 433 (55%) had complete documentation (heart rate, respiratory rate, and oxygen saturation). For the subsequent doses, heart rate was low for 13 doses (n = 5 patients); respiratory rate was low for 6 doses (n = 5 patients), O<sub>2</sub> sat was low for 33 doses (n = 18 patients, range 89% - 94%). IV bolus morphine was an effective pain management modality as pain intensity decreased (average score of 5.9 at baseline, 3.8 at 10 minutes, 2.95 at 20 minutes).

**CONCLUSIONS:** Although documentation was somewhat low at some time periods, the monitoring protocol represents a significant practice change for the nursing staff, as prior to this study, there was no requirement for monitoring subsequent doses. Barriers to the documentation of effective monitoring are being assessed and strategies to improve are being developed.

## P82

### WHAT ARE THE NEEDS OF PHYSICIANS CONSIDERING MEDICAL CANNABINOIDS?

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**BACKGROUND:** Pain is the most common symptom seen by healthcare providers in virtually all specialties. Despite a number of proven pharmacological therapies, effective management of pain can be elusive. We participated in a needs assessment to explore barriers to the consideration of cannabinoids (CBs).

**METHODS:** A 20-item survey was developed and distributed to general practitioners (GPs) and family physicians (FPs) across Canada and pain management specialists in seven U.S. states (California, Georgia, Florida, Massachusetts, Michigan, New York, and Texas). Data collected included physician demographics, awareness of and willingness to prescribe CBs, barriers to CB use, and unmet needs.

**RESULTS:** The survey was distributed to 2949 GPs/FPs across Canada and 1000 pain management specialists across the U.S. Response rates were 9.7% and 10.5%, respectively. The majority (54%) of Canadian GPs/FPs has more than 16 years of experience providing pain management care, and 37% are in rural locations. The most common challenges in treating pain are side effects (16%) and addiction concerns (14%). Eighty-six percent are aware of the use of cannabinoids for pain management. All GPs/FPs have a low comfort level prescribing this class of drugs for pain (average 4.03 on scale of 1 to 10), despite their years of experience in pain management. Results were similar for U.S. pain management specialists: a majority (38%) has more than 16 years of experience in pain management care. The majority (57%) commonly prescribes opioids for the treatment of refractory pain, but do not prescribe cannabinoids. While 57% of U.S. specialists would consider prescribing a cannabinoid to treat refractory pain, legal/regulatory issues and lack of evidence (efficacy, safety) were major barriers for the use of cannabinoids. Canadian GPs/FPs reported that expert guidelines (22%) and new clinical data (16%) would help increase their comfort level with prescribing controlled/narcotic substances. Similarly, U.S. pain management specialists reported that expert guidelines (60%) and new clinical data (56%) would help increase their comfort level with prescribing cannabinoids.

**CONCLUSIONS:** Given respondents' expressed interest in further education on this topic, continuing research and health education initiatives exploring the use of cannabinoids for pain management are warranted.

## P83

### HEAD-TO-HEAD COMPARATIVE RANDOMIZED CONTROLLED TRIALS OF ORAL ANALGESICS IN NEUROPATHIC PAIN: FEW IN NUMBER, RICH IN DATA, MORE AND IMPROVED STUDIES NEEDED

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**AIM:** Neuropathic pain (NP) encompasses a number of difficult to treat disorders. There are few head-to-head, comparative, randomized controlled trials (RCTs) of drugs in different analgesic categories, or different drugs within a category in NP despite many individual placebo-controlled RCTs. Well designed head-to-head comparative trials are an effective way to determine the efficacy and safety of a new drug. This poster reviews published head-to-head randomized controlled trials in neuropathic pain.

**METHODS:** A systematic review was carried out for RCTs in NP and head-to-head comparative trials were selected. Reference lists from published systematic reviews were searched and colleagues were contacted regarding this type of trial. These studies were rated according to the Jadad scale for quality.

**RESULTS:** Twenty-six such trials were identified. Sixteen were comparisons of different analgesics, and ten were of different drugs within an analgesic class. Important information was obtained about the relative efficacy and safety of drugs in different categories and within a category. Some trial inadequacies were identified.

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**CONCLUSIONS:** More and improved head-to-head RCTs are needed as the best way to evaluate the efficacy and safety of new drugs versus those that have become standard therapies in order to justify the expense of newer drugs. Older categories of drugs also need evaluation to properly determine their utility, safety and place in treatment algorithms as new drugs become available. Suggestions are made for future head-to-head RCTs.

### P84

#### THE NOVA SCOTIA CHRONIC PAIN COLLABORATIVE CARE NETWORK (NSCPCCN) NEEDS ASSESSMENT BY FOCUS GROUP

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**AIM:** Chronic pain affects between 20-30% of Canadians (1). Ensuring timely access to pain management has become increasingly difficult (2,3). The Nova Scotia Chronic Pain Collaborative Care Network (NSCPCCN) is an innovative program designed to increase capacity for pain management by through a mentor-mentee network between Primary Care Providers (PCP's) and pain specialists. This program is underway as a pilot study in the South Shore District Health Authority (SSDHA) of Nova Scotia.

**METHODS:** PCP's in SSDHA were invited to attend focus groups as part of a participant needs assessment. Participants were asked to identify supports and barriers to the implementation of a mentor-mentee network as well as resources present in the community resources required to successfully implement such a program. In addition, participants were asked to suggest topics for CME presentations.

**RESULTS:** Initial questions asked by participants were divided into categories to create a list of Frequently Asked Questions. Themes developed highlight local variations in resources between communities within the same health care district. Requested CME sessions were varied among groups but addictions education was common among groups.

**CONCLUSIONS:** Initial focus groups were utilized as a needs assessment for the NSCPCCN pilot project. Information gathered from the focus groups indicates variation in resource assets and resources between communities in the same District Health Authority. Results will be used to guide implementation of the NSCPCCN.

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### P85

#### A QUALITATIVE INVESTIGATION OF INJURIOUS FALLS IN LONG-TERM CARE: PERSPECTIVES OF STAFF MEMBERS

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**AIM:** Falls commonly result in injury and multiple pain problems among seniors residing in long-term care (LTC; Rubenstein et al., 1996) and are a leading contributor to hospitalization and death (e.g., Rice et al., 1989; Tinetti & Williams, 1997). There is a paucity of research about perceptions of LTC staff concerning the gravity and consequences of falls. The purpose of this investigation was to elicit opinions of LTC staff about the magnitude of the problem and prevention given a "least restraint" policy.

**METHODS:** Within seven LTC facilities, data was collected from administrators and a variety of clinical staff using 13 focus groups (licensed nurses, special care aids) and 28 interviews (e.g., administrators,

physiotherapists, activity/recreation, physicians). Questions were asked about their practices related to quality of life and falls, using a semi-structured interview guide. We employed thematic analysis, allowing us to ascertain primary and secondary themes within the data.

**RESULTS:** Participants viewed falls as a major challenge in their workplace. They expressed concerns about their limited ability to control falls and manage consequences, of which injury and pain are most significant. Participants viewed the "least restraint" policy overall as positive, acknowledging beneficial effects of resident independence and increased activity. However, they considered the impact of pain resulting from falls as a complicating factor, noting the necessity of both independence and living pain-free as essential to quality of life. Participants discussed the concept of "living at risk" (for falls) as necessary within client-centered practice.

**CONCLUSIONS:** These findings have potential implications for falls management and prevention.

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### P86

#### DO AGE AND SEX PREDICT PAIN INTENSITY AND SIDE EFFECTS AFTER SURGERY?

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**AIM:** To describe the relationship between demographic characteristics and pain and side effects after surgery.

**METHODS:** Patients admitted to the Acute Pain Management Service (APMS) in a tertiary care hospital have their clinical assessments recorded on a tablet computer at the bedside or on a desktop computer at the nursing unit station. APMS software developed specifically for this purpose is used to record assessments (1,2).

**RESULTS:** 7,932 patients were admitted to the APMS between July 1, 2005 and June 30, 2008. Fifty-six percent were female. Mean age was 58 (standard deviation (sd) =17) years. Mean pain intensity at rest was 1.9/10 (sd=2.3) and with activity 3.8/10 (sd=2.7). The most common surgical procedures were orthopaedics (n=2759), general surgery (n=1388), gynecology (n=1078). Age was inversely related to pain (rest & active), nausea, vomiting and pruritis. Females were more likely to report nausea and vomiting. The highest levels of nausea was noted in females undergoing orthopaedic, gynaecologic or thoracic surgery. In multivariate analysis, controlling for surgical procedure, age, but not sex was associated with pain at rest and pain with activity (p<.01). Sex, but not age was associated with nausea and vomiting (p<.01), however, age, but not sex was also associated with pruritis postoperatively (p<.01).

**CONCLUSIONS:** Age and sex predict pain and side effects after surgery. The electronic capture of clinical data is useful for clinical, administrative and research purposes and provides a rare opportunity to provide information about the total population as opposed to a representative sample. Analysis is limited by the amount and completeness of the data captured during clinical care.

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## P87

**AGE RELATED REGIONAL OPIOID USAGE IN NOVA SCOTIA- 2004 TO 2006**

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**AIM:** Opioid medications are often prescribed as part of the management of pain, both acute and chronic. (1). Normal prescribing patterns of these medications are poorly understood. The Nova Scotia Prescription Monitoring Program (NSPMP) collects information from all prescriptions for controlled substances written in Nova Scotia. The comprehensive nature of the data from the NSPMP may allow insight into pain management practice in Nova Scotia that is not otherwise available.

**METHODS:** All prescriptions for opiate prescriptions written in Nova Scotia from 2004-2006 were collected by the NSPMP. Opioid data were converted to morphine equivalents. County of residence and age of the recipients of filled prescriptions were also obtained. The data was reported in grouped status to preserve anonymity.

**RESULTS:** We report age related regional distribution of opioid prescriptions written in Nova Scotia from 2004 to 2006. Additionally, we report the annual trends of opioid prescribing in Nova Scotia over this time period.

**CONCLUSIONS:** Nova Scotia has the advantage of containing both rural and urban population centers. Evaluating the data of opioid usage by geographical and age variation may provide further awareness of prescribing patterns and lead to more effective management of patient health care or to highlighting disparity in medical services.

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## P88

**INVESTIGATING THE MOLECULAR BASIS OF ADRENERGIC-OPIOID ANALGESIC SYNERGY**

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**AIM:** When co-administered to the spinal cord, agonists acting at  $\alpha_2$  adrenergic receptors (AR) and opioid receptors (OR) interact in a greater-than-additive (i.e. synergistic) manner. It has been demonstrated that activation of  $\alpha_2$ AR is both necessary and sufficient to produce a synergistic interaction with  $\Delta$ -opioid receptor (DOP)-selective agonists [1]. Furthermore, we provided evidence from high magnification confocal microscopy of extensive co-localization between DOP-immunoreactivity (ir) and  $\alpha_2$ AR-ir in the spinal cord dorsal horn and in synaptosomes, a preparation of nerve terminals isolated from spinal cord tissues [2]. We hypothesize that adrenergic-opioid synergy is mediated through  $\alpha_2$ AR and DOP co-expression in primary sensory neurons.

**Aim 1:** Determine the impact of DOP/ $\alpha_2$ AR co-expression on agonist binding.

**Aim 2:** Determine the impact of DOP/ $\alpha_2$ AR co-expression on trafficking at synaptic terminals.

**Aim 3:** Identify DOP/ $\alpha_2$ AR oligomeric complexes in primary afferent neurons.

**METHODS:** To evaluate the effect of receptor co-expression on ligand binding, saturation binding experiments will be performed in synaptosomes prepared from WT, DOP-KO or  $\alpha_2$ AR-KO mouse spinal cords. Dose-effect curves and isobolographic analysis (the 'gold standard' for the evaluation of drug interactions) will be performed to calculate changes in agonist binding. Stimulus-induced translocation of DOP and  $\alpha_2$ AR will be evaluated in spinal cord synaptosomes where surface proteins are labeled, isolated and subjected to Western blot analysis. Three methods will be employed to investigate DOP/ $\alpha_2$ AR oligomerization in native tissues. 1) Fluorescence Resonance Energy Transfer (FRET) to determine

receptor's proximity. 2) Co-IP experiments will be performed in synaptosomes and samples will be screened for DOP- and/or  $\alpha_2$ AR-ir by Western immunoblot analysis. 3) Mass spectroscopy analysis of co-IP samples.

**RESULTS:** We compared several antisera raised against DOP in immunohistochemistry (IHC) and Western blotting in order to determine which antisera can be used for each application. Double IHC staining showed an extensive co-localization with SP with some antisera and no co-localization with other antisera. WB analysis of spinal cord extracts shows distinct banding patterns across the antisera tested and there is a lack of a common immunoreactive band at the predicted DOP receptor molecular weight.

**CONCLUSIONS:** This project will provide a better understanding of GPCR interactions in vivo and their physiological and pharmacological impacts in pain and analgesia. Therapeutically, exploitation of such synergistic interactions presents the opportunity to produce analgesia with minimal adverse effects (e.g., tolerance, dependence, respiratory depression) as well as overcome pre-existing tolerance.

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## P89

**MODULATION OF NEUROPATHIC PAIN BY TGF- $\beta$ 1**

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**BACKGROUND:** Although for decades pain has been viewed as being mediated solely by neurons, this neuron-centric view, has been challenged by recent findings that highlight the active participation of glial cells in the initiation and/or maintenance of this hypersensitivity in different pathological conditions (1). Transforming growth factor- $\beta$ 1 (TGF- $\beta$ 1), known as a potent anti-proliferative and anti-inflammatory agent, inhibits microglial activation, including cell proliferation, and impairs neuropathic pain (2). The pleiotropic roles of this cytokine in the spinal cord might include the down-regulation of proinflammatory molecules such as MG-CSF, IL-1 $\beta$ , TNF- $\alpha$  or IL-6. The goal of this study is to investigate the roles of TGF- $\beta$ 1 in the modulation of spinal cord inflammatory response after peripheral nerve injury and the impact on pain hypersensitivity.

**METHODS:** Sciatic Nerve Ligation (as described by Seltzer, 1990) will be performed in rats to induce neuropathic pain behaviour. Rats will receive intrathecal infusion of recombinant TGF- $\beta$ 1 after sciatic nerve injury, and both thermal latency and mechanical withdrawal threshold will be assessed. To investigate the different changes in inflammatory markers we have opted for a new innovative and modern technology: the Luminex assay. This method will allow us to test the secretion of different markers at the same time with a sensitivity superior to that of ELISA.

**SIGNIFICANCE OF THE PROPOSED STUDY:** Neuropathic pain is considered now to be an immune disorder of the nervous system. Understanding and modulating the inflammatory processes that take place after peripheral nerve injury will open new therapeutic venues for the treatment of neuropathic pain.

## P90

**SYNERGIZING INFANT HEALTH AND INFANT MENTAL HEALTH: APPLYING ATTACHMENT THEORY TO THE CONTEXT OF INFANT PAIN**

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**AIM:** The quality of the caregiver-infant attachment relationship plays a critical role in the infant's ability to cope with distress yet no known studies have examined attachment in relation to infant pain-related distress. The Strange Situation Procedure (SSP) is the gold standard measure of

## Abstracts

infant attachment that classifies the caregiver-infant relationship into four styles: secure, insecure-avoidant, insecure-resistant and disorganized. The aim of the proposed study is two-fold: 1) to conduct a preliminary content validation of a coding system based on the SSP that is feasible for an acute medical environment and 2) to explore relationships between the four attachment styles and infant pain-related distress.

**METHODS:** As part of an ongoing longitudinal project, caregivers and their infants (N = 140) will be videotaped during infants' 12-month immunizations in order to capture infant pain-related distress as well as interactive behaviours with caregivers. For the current study, caregivers and infants will be invited to take part in the SSP at a hospital laboratory within three weeks of the immunization.

**RESULTS:** In line with past research in non-pain contexts, infants in secure relationships are predicted to be better able to regulate pain-related distress than infants in insecure/disorganized relationships.

**CONCLUSIONS:** This research will be the first of its kind to directly examine how the quality of the caregiver-infant relationship is related to infant pain. Furthermore, this research will guide clinical interventions by elucidating the nature of infant pain and specifying ways that caregivers can help soothe their infants in pain to their distinct relationship style.

### P91

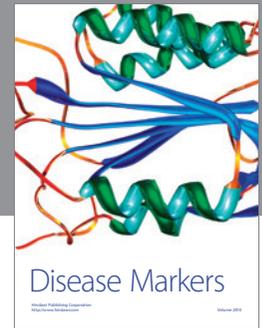
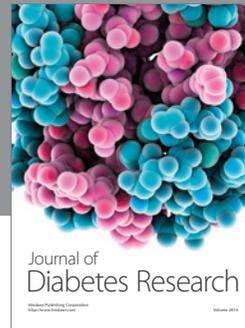
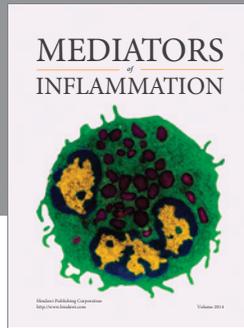
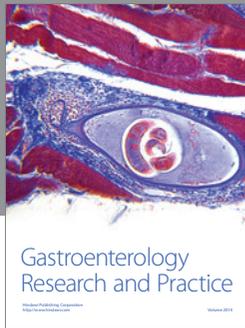
#### **ACUTE CORONARY SYNDROME PAIN AND ANXIETY IN A RURAL COMMUNITY HOSPITAL: A FOCUS GROUP STUDY**

**Sheila O'Keefe-McCarthy RN PhD student, University of Toronto, Lawrence S Bloomberg Faculty of Nursing; Michael McGillion RN PhD, University of Toronto, Lawrence S Bloomberg Faculty of Nursing; Sioban Nelson RN PhD, University of Toronto, Lawrence S Bloomberg Faculty of Nursing, Toronto, Ontario; Jeremy Jones BSc MD FRCPC, Ross Memorial Hospital, Lindsay, Ontario**

**BACKGROUND:** Ischemic heart disease (IHD) is a leading cause of death in Canada. Acute coronary syndrome encompasses the clinical manifestations of ischemic heart disease including unstable angina and myocardial infarction. The pain arising from ACS is severe and anxiety-provoking. While unrelieved pain and anxiety can potentiate damage to vulnerable myocardial muscle, there are no documented standards for ACS pain and anxiety assessment and management practices. Meticulous pain and anxiety related-care are particularly critical for ACS patients in rural areas, wherein wait times for diagnostic cardiac catheterization (CATH) can be as great as 27 hours. Aim: To explore the trajectory of ACS pain and anxiety-related care for ACS patients awaiting CATH in a rural setting.

**METHODS:** Research Plan: Design: A focus group will be conducted for clinicians and patients respectively, using scenario-based, open-ended discussion questions. Sample: Patients. ACS patients who have under-gone cardiac CATH within the last 6 months. Clinicians: Registered nurses, nurse practitioners, and physicians caring for ACS patients in a rural emergency department. Data Analysis: Descriptive Content analysis will be used including axial coding and constant comparison to identify key themes.

**CONCLUSIONS:** Relevance: This study will provide much needed insight into rural ACS pain and anxiety assessment and management practices, and provide a basis for future guideline development.



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