Canadian Pain Society Conference
April 13 – April 16, 2011, Niagara Falls, Ontario

WEDNESDAY APRIL 13, 2011

OPENING – NO SESSIONS

THURSDAY APRIL 14, 2011

KEYNOTE SPEAKER – 9:15 AM

1
NAVIGATING THE CHALLENGES OF EFFECTIVELY MANAGING PAIN IN INFANTS AND CHILDREN – MARY ELLEN JEANS INAUGURAL LECTURE

Chair: Mary Ellen Jeans, CM, RN, PhD, President, ME Jeans and Associates, Ottawa, Ontario

Speaker and Recipient of the Inaugural Lecture; Bonnie Stevens, RN PhD, Professor, Lawrence S Bloomberg, Faculty of Nursing; Faculty of Medicine Director, University of Toronto Centre for the Study of Pain, University of Toronto, Signy Hildur Eaton Chair in Paediatric Nursing Research, Associate Chief of Nursing Research, Senior Scientist, Research Institute, The Hospital for Sick Children, Toronto, Ontario

Learning Objectives:

1. To examine current evidence on pain management interventions in infants and children.

2. To determine strategies for effectively translating research evidence to practice.

3. To explore challenges in the shifting landscape of research evidence and the role of context in pain management and knowledge translation.

SESSION 101 – 10:45 AM

2
CANNABINOIDS IN CLINICAL PRACTICE: PRESCRIBING, SYNERGIES AND MEDICAL CANNABIS. AN INTERACTIVE CASE-BASED SESSION

Co-Chairs: Alexander J Clark, MD, FRCPC, Medical Director, Pain Services, Capital Health, Professor of Anesthesia, Dalhousie University, Halifax, Nova Scotia; Mark A Ware, MBBS, MSc, MRCP, Director of Clinical Research, Alan Edwards Pain Management Unit, McGill University Health Centre, Montreal, Quebec

Learning Objectives:

1. To identify appropriate patients for trials of cannabinoids.

2. To learn how to initiate, titrate and monitor cannabinoids.

3. To understand why the use of opioids and cannabinoids may be synergistic.

4. To understand Health Canada's medical marihuana access regulations.

SESSION 102 – 10:45 AM

3
CLINICAL APPROACHES AND APPLICATIONS OF PSYCHOSOCIAL THERAPIES FOR PAIN: FROM THE PELVIS TO THE SPINE

Chair: Dean A Tripp, PhD, Associate Professor, Departments of Psychology, Anesthesiology & Urology, Queen's University, Kingston, Ontario

Speakers: Dean A Tripp, PhD, Associate Professor, Departments of Psychology, Anesthesiology & Urology, Queen's University, Kingston, Ontario; Michael JL Sullivan, PhD, Professor, Departments of Psychology, Medicine and Neurology, Canada Research Chair in Behavioural Health, McGill University, Montreal, Quebec

OBJECTIVE: The primary aim of the workshop is to provide an in-depth examination of the intervention techniques that have been shown to impact psychological risk factors for adverse pain outcomes. The workshop will highlight how these techniques might be applied to diverse pain conditions such as chronic pelvic pain, and chronic back and neck pain.

Learning Objectives:

1. To understand the need for and the basic principles of risk-factor targeted interventions for chronic pain.

2. To differentiate pertinent psychosocial predictors for disease states such as CP/CPPS as well as injuries due to work-related or accident associated initiators, and be familiar with clinical application and assessment suggestions.

3. To recognize the benefit and pitfalls of standardized interventions as well as several common clinical roadblocks along with suggestions for management.

BACKGROUND: Research suggests that approximately one-third of North Americans experience chronic pain. Chronic pain can arise as a function of physical insults, such as sprains or strains, inflammation from some disease process, or repetitive motion injuries. Chronic pain also carries a significant psychological or emotional component that is not addressed by conventional medical treatment. Chronic pain is first and foremost an individual / subjective experience where pain that is tolerated or managed by one person may be crippling for another. As a result of marked individual differences in response to pain, there has been increasing interest in the identification of risk factors for adaptational difficulties associated with chronic pain. The broad, or 'generalist' pain management approaches of the past decade are being replaced with interventions that identify risk factors for adverse pain outcomes and the implementation of intervention techniques that specifically target these risk factors. Newer interventions go beyond the goal of pain management to include reducing the negative impact of psychological variables that might be compromising pain patients' full participation in familial, social, recreational and occupational roles.

3A
TARGETING PSYCHOLOGICAL RISK FACTORS FOR PELVIC PAIN

Dean A Tripp, PhD

Queen's University, Kingston, Ontario

The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) have adopted the umbrella term "Urologic Chronic Pelvic Pain Syndrome", or UCPPS, to refer to pain syndromes associated with the male and female pelvises staring in 2007. Previous to this date, the male version was called chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS). Prostatitis is a common and costly medical condition, with CP/CPPS the most frequent subtype encountered by family physicians, internists, and urologists. Men with CP/CPPS have chronic genitourinary pain, the hallmark symptom of this syndrome, but also report urinary and sexual dysfunction, both of which have a negative effect on the quality of life. The prevalence rate of physician-diagnosed prostatitis in one U.S. community was 9%; population-based surveys of symptoms estimate the prevalence of prostatitis-like symptoms to be between 6 and 12% and recent surveys of adolescent males raise the possibility of similar prevalence in much younger males. With little evidence of a cure for either disease, an improved understanding of the predictive factors most closely associated with poorer QOL is essential for directing medical and psychosocial interventions for enhanced patient adjustment in UCPPS. A novel Cognitive Behavioral Symptom Management Program (CBSMP) has recently been developed and feasibility tested. The CBSMP will be described and its feasibility data reviewed. Implementation issues, successes and thoughts on treatment modification will also be offered.

3B
TARGETING PSYCHOLOGICAL RISK FACTORS FOR SPINAL PAIN

Michael JL Sullivan, PhD

McGill University, Montreal, Quebec

The psychology of pain and disability has been of significant interest to patients, healthcare providers and industry stakeholders. Motor vehicle accidents can expose the head and neck to sudden changes in velocity, resulting in whiplash injuries. Although the majority of people who sustain

whiplash injuries follow an uncomplicated course of recovery, for many people, the physical and emotional symptoms associated with whiplash injuries may persist for prolonged periods and contribute to significant disability. Research suggests that chronic pain and pain-related disability develop in approximately 15% to 20% of people with whiplash injuries. There are particular research areas focused on the communication of pain experience, the prediction of problematic health outcomes, and therapeutic efforts to remedy patient disability. One such example has been the Progressive Goal Attainment Program (PGAP), which is a 10-week psychosocial intervention program that aims to increase activity involvement and minimize psychological barriers to rehabilitation progress. Research shows that a psychosocial risk reduction intervention can be an effective means of improving function and facilitating return to work in people who are at risk for prolonged pain-related disability. This talk will focus on the macro and several micro issues around the application, successes, and common therapeutic roadblocks in implementing programs like PGAP. In particular, the specific targeting of catastrophizing and the techniques used will be highlighted.

SESSION 103 – 10:45 AM

4
PAIN AND ADDICTIONS CONTINUING PROFESSIONAL DEVELOPMENT

Chair: Michael Cord

Speakers: Michael Cord, MD; Peter MacDougall, PhD, MD, FRCPC; John Fraser, MD

Michael Cord, MD, Director, Medical Management for Addictions and Pain, Toronto, Ontario; Peter MacDougall, PhD, MD, FRCPC, Director, Nova Scotia Chronic Pain Collaborative Care Network; Department of Anesthesia, Dalhousie University; John Fraser, MD, Director, Direction 180, Mentor, NSCPCCN, Halifax, Nova Scotia

OBJECTIVE: The aim of this workshop is to describe a novel technique for delivering Continuing Professional Development and clinical support to primary care practitioners. Parallel development of similar networks in two provinces, the Nova Scotia Chronic Pain Collaborative Care Network (NSCPCCN) and Medical Mentoring for Addiction and Pain (MMAP) in Ontario will be described. The workshop will describe the development of both networks and collaboration between them including the development of a novel interprovincial mentoring system.

Learning Objectives:

1. Will appreciate the concept of the mentor-mentee network and how it can be utilized to enhance pain and addiction education in the community.

2. Will be aware of the unique advantages of the educational dialogue created within such networks and will be in a position to identify whether this approach has application for other provinces across Canada.

3. Will understand the advantages of mentor-mentee networks within the health-care system.

4A
MEDICAL MENTORING FOR ADDICTIONS AND PAIN – MMAP

Michael Cord, MD

Director, Medical Management for Addictions and Pain, Toronto, Ontario

The MMAP program has developed in parallel with the NSCPCCN in Nova Scotia. Impetus for the development of the program came from recognition of significant problems with opioids in the community. The program was developed through the Ontario College of Family Physicians building on considerable experience with mentor-mentee networks.

The MMAP program is in its third year of development and involves some 90 participant physicians distributed throughout Ontario. The program addresses any and all physician concerns regarding the clinical understanding and management of chronic pain and addiction. Considerable emphasis is given to harm reduction and the difficulties of opioid management and the problems of opioid diversion. The positive outcomes of these programs will be described in terms of change in confidence and competency of individual practitioners as well as the increased capacity generated in the health care system in Ontario through optimisation of function of primary care providers.

4B
PAIN AND ADDICTIONS CONTINUING PROFESSIONAL DEVELOPMENT

Peter MacDougall, PhD, MD, FRCPC

Director, Nova Scotia Chronic Pain Collaborative Care Network; Department of Anesthesia, Dalhousie University, Halifax, Nova Scotia

The Nova Scotia Chronic Pain Collaborative Care Network (NSCPCCN) is a mentor-mentee network designed to provide Continuing Professional Development, clinical support and knowledge translation to primary care providers in Nova Scotia. Ongoing research within the network assists to determine the effect of the NSCPCCN on practitioners and patients.

The NSCPCCN was initially developed in response to a defined need for education programs within the Nova Scotia Action Plan for Chronic Pain Management. The Action Plan was created by the Department of Health in response to wait lists for chronic pain management of five years. It was piloted for one year in a single health district in Nova Scotia prior to stepwise expansion to across Nova Scotia. Data indicated that the NSCPCCN reduced practitioner uncompensated time and improved suspicion of aberrant opioid behavior and screening for aberrant opioid behavior. Collaboration with MMAP in Ontario has enhanced mentor development in Nova Scotia.

4C
MENTORSHIP HAS ITS ISSUES

John Fraser, MD

Director, Direction 180; Mentor, NSCPCCN, Halifax, Nova Scotia

This section of the workshop will focus on issues of mentorship. The discussion will outline the content of a mentorship training workshop and concurrent mentor-mentee workshop. Topics to be discussed include development of an agreement between the mentor and mentees outlining access, response time and communication methods. They will also discuss important constructs of group development required for function of mentor-mentee groups. In addition, this section will highlight some common problems encountered in mentor-mentee groups. These include communication problems and interpersonal conflict.

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).

SESSION 104 – 1:30 PM

5
PARALYSIS OF ANALYSIS? ADVANCING THE ACUTE PAIN TREATMENT AGENDA IN CANADA

Chair: Saifee Rashiq

Speakers: Brenda Poulton, RN MN; Brandy Love, MN NP; Saifee Rashiq, MB MSc FRCPC

Brenda Poulton, RN MN, Nurse Practitioner, Pain Management, Royal Columbian Hospital, New Westminster, British Columbia; Brandy Love, MN NP, Nurse Practitioner, Adult Acute Pain Service, University of Alberta Hospital; Saifee Rashiq, MB MSc FRCPC, Department of Anesthesiology & Pain Medicine, University of Alberta, Edmonton, Alberta

Learning Objectives:

1. To review available acute pain educational resources for clinicians.

2. To review available acute pain educational resources for patients.

3. Receive an update from the acute pain SIG effort to create and implement nationally applicable, evidence-based, actionable acute pain treatment advice.

5A
MY POCKET RUNNETH OVER...

Brenda Poulton, RN MN

Nurse Practitioner, Pain Management, Royal Columbian Hospital, New Westminster, British Columbia

Acute pain guidelines are plentiful. There are books, pamphlets and online resources. Some are written by august national societies and others by enthusiasts who are simply trying to improve care in their own institutions.

Should you use any of them? Join an experienced APS nurse educator for a hike through this forest of information and let her help you find the wood for the trees.

5B
BEFORE YOU BLAME THE VICTIM...

Brandy Love, MN NP
Nurse Practitioner, Adult Acute Pain Service, University of Alberta Hospital, Edmonton, Alberta

Have you ever had to tactfully explain the difference between the PCA control and the bedside light switch? Patients are the final arbiters of good pain care, but how well informed are your patients about what to expect? Join a practitioner on a busy multidisciplinary acute pain service as she mines the seam of available patient-focussed pain information and finds the diamonds in the rough.

5C
THE CPS APSIG NATIONAL ACUTE PAIN TREATMENT INITIATIVE

Saifee Rashiq, MB MSc FRCPC
Department of Anesthesiology & Pain Medicine, University of Alberta, Edmonton, Alberta

Members of the SIG are actively engaged in a consensus process to equip Canadian clinicians in all areas with the tools and encouragement needed to optimize acute pain care. Come hear what we've achieved so far. Brickbats, bouquets and other projectiles welcomed, but your own ideas and contributions especially so. Help us make Canada a benchmark for uniformly excellent performance in this area.

SESSION 105 – 1:30 PM

6
AIMING FOR INDEPENDENCE: EVIDENCE BASE AND CLINICAL APPLICATIONS OF PHYSICAL THERAPIES FOR PEOPLE IN PAIN

Chair: Susan Tupper, PT, PhD(c), Community Health and Epidemiology, University of Saskatchewan, Saskatoon, Saskatchewan
Speakers: Susan Tupper, PT, PhD(c), Community Health and Epidemiology, University of Saskatchewan, Saskatoon, Saskatchewan; Neil Pearson, PT, MSc, BA-BPHE, CYT, Clinical Assistant Professor, University of British Columbia, Penticton, British Columbia; Dave Walton, PT, PhD, FCAMT, Assistant Professor, University of Western Ontario, London, Ontario

OBJECTIVE: Through lecture, video demonstration and case based learning, this session will outline the evidence base, clinical applications, and future research directions for physical therapies used in the management of persistent and recurrent pain conditions for adult, senior and pediatric populations.

Learning Objectives:

1. Understand the benefit of physical therapies for improving function and well-being as part of the overall management of people with persistent and recurrent pain conditions.

2. Understand the evidence base supporting physical therapies for pain across the lifespan and be aware of research gaps and future directions.

3. Identify clinically relevant practice guidelines for the implementation of therapeutic yoga, physical activity, manual therapy and electrophysical and thermal agents into practice.

6A
ADULT

Neil Pearson, MSc, BScPT, BA-BPHE, CYT, RYT500
Clinical Assistant Professor, University of British Columbia, Penticton, British Columbia

People living with pain commonly report impairments in movement, strength, balance and function. There is a growing body of research into therapeutic yoga, one form of exercise prescribed for people with chronic pain and fibromyalgia. Neil Pearson will present the evidence and his clinical experience for the use of therapeutic yoga in managing pain in adults with fibromyalgia. Neuroscience provides us with an understanding of how an appropriate yoga practice can create benefits beyond those of traditional exercise and activity routines. The overlapping benefits of mindful movement, body and postural awareness, breathing, and meditation will be reviewed with relevant clinical guidance for the integration of yoga principles into practice, for some people in pain.

6B
PAEDIATRICS

Susan Tupper, BScPT, PhD(c)
Community Health and Epidemiology, University of Saskatchewan, Saskatoon, Saskatchewan

Research to date has shown a consistent trend supporting the importance of physical activity in reducing symptoms and disease activity and improving function, quality of life and aerobic conditioning in youth with a variety of pain conditions. However, many barriers to physical activity prevent young people from engaging in recommended levels of sport or exercise. Susan Tupper will present clinical considerations when designing an exercise program for youth with a focus on juvenile idiopathic arthritis. Evidence will be reviewed for the use of physical activity and therapeutic exercise in the management of pain conditions and research gaps will be discussed.

6C
SENIORS

Dave Walton, PT, PhD, FCAMT
Assistant Professor, University of Western Ontario, London, Ontario

Distal radius fracture is a common outcome of falls, with fracture frequency increasing with age. While many fractures will follow a normal clinical course towards recovery, a subset of people will develop complex regional pain syndrome (CRPS) in the fracture limb, a neuropathic condition of unknown etiology characterized by severe pain and loss of function. The incidence of CRPS is low, but the burden on the patient and health system is high when it does occur. Recent evidence points to central mechanisms as drivers of the development of CRPS, with novel therapies intended to address dysfunction in motor control, sensation and perception at a central (ie. somatosensory cortex) level rather than the traditional peripheral focus. Dave Walton will introduce some of the recent advances in conservative management of CRPS and a critical evaluation of the evidence for effectiveness of such approaches.

SESSION 106 – 1:30 PM

7
DO NERVE BLOCKS HAVE A ROLE IN CHRONIC PAIN MANAGEMENT?

Co-Chairs and Speakers: Alexander J Clark, MD, FRCPC, Medical Director, Pain Services, Capital Health; Professor of Anesthesia, Dalhousie University, Halifax, Nova Scotia; Norm Buckley, BA (Psych), MD, FRCPC, Professor and Chair, Department of Anesthesia, Michael G DeGroote School of Medicine, McMaster University, Hamilton, Ontario

This will be an interactive session with participants working in small groups to answer a series of questions that will be reported back to all participants for discussion.

Learning Objectives:

1. To review the evidence for and against the use of nerve blocks in the management of chronic pain.

2. To determine if there is an optimum frequency at which nerve blocks should be provided and whether there should be a maximum number provided.

3. To discuss where and/or when ultrasound and/or fluoroscopy must be used.

7A
PRO: BLOCKS ARE IMPORTANT MODALITIES IN THE MANAGEMENT OF CHRONIC PAIN

Norm Buckley, BA (Psych), MD, FRCPC
Professor and Chair, Department of Anesthesia, Michael G DeGroote School of Medicine, McMaster University, Hamilton, Ontario

7B
CON: BLOCKS HAVE LITTLE ROLE IN THE MANAGEMENT OF CHRONIC PAIN

Alexander J Clark, MD, FRCPC
Medical Director, Pain Services, Capital Health; Professor of Anesthesia, Dalhousie University, Halifax, Nova Scotia

FRIDAY APRIL 15, 2011

KEYNOTE SPEAKER – 9:15 AM

8
MECHANISMS INVOLVED IN THE TRANSITION TO THE CHRONIC PAIN STATE AFTER ACUTE INJURY

Tony Yaksh, PhD, Professor and Vice Chair for Research, Department of Anesthesiology and Professor of Pharmacology, University of California, San Diego, California, USA

KEYNOTE SPEAKER – 9:45 AM

9
THE SCIENCE OF PAIN COPING: CURRENT STATUS AND FUTURE DIRECTIONS

Francis J Keefe, PhD, Duke University School of Medicine, Durham, North Carolina, USA

Over the past decade, the scientific literature on pain coping has grown enormously. The purpose of this presentation is to highlight recent developments in pain coping research and to pinpoint important areas for future research. The presentation is divided into three sections. The first section describes a conceptual background research on pain coping. The second section provides an overview of empirical studies of pain coping with an emphasis on recent studies of methodologies to assess pain coping and interventions to enhance how individuals cope with persistent pain. The final section highlights several critical issues for future research including the need to examine the social context of pain coping, the importance of understanding pain coping in persons having pain comorbid with other conditions (e.g. obesity), and how to best integrate pain coping assessment and treatment efforts into clinical practice.

Learning Objectives:

1. To become familiar with conceptual models underpinning pain coping research.
2. To understand current approaches to assessing pain coping in persons having persistent pain and to enhancing the use and perceived efficacy of pain coping skills.
3. To become aware of key directions for future research in the pain coping research area.

SESSION 201 – HOT TOPICS – 10:45 AM

10
ANALYSE DES ACTIVITÉS EN GESTION DE LA DOULEUR CHRONIQUE RÉALISÉES PAR LE PERSONNEL INFIRMIER DES GROUPES DE MÉDECINE DE FAMILLE (GMF)

Dave A Bergeron, inf MSc(c), Département des sciences cliniques; Frances Gallagher, inf PhD, École des sciences infirmières; Patricia Bourgault, inf PhD, École des sciences infirmières, Université de Sherbrooke, Sherbrooke, Québec

AIM: Cette étude a pour but de décrire les activités réalisées par le personnel infirmier œuvrant en GMF en rapport avec la gestion de la douleur chez la clientèle souffrant de douleur chronique ainsi que de décrire leur croyances, les connaissances, les barrières et les facteurs associés aux activités effectuées en gestion de la douleur.

METHODS: Un devis descriptif corrélationnel transversal de type enquête a été utilisé. La population accessible provient d'une liste de l'Ordre des infirmières et infirmiers du Québec recensant les infirmières et infirmiers en GMF ayant donné leur autorisation à être contacté pour des fins de recherche. Deux questionnaires postaux auto-administrés soit le Questionnaire Toronto sur la gestion de la douleur et le Questionnaire sur les activités infirmières en gestion de la douleur ont été envoyé à 195 infirmières. De ce nombre, 53 infirmières ont répondu aux questionnaires.

RESULTS: Les cinq activités qui ont été le plus souvent réalisées par le personnel infirmier sont d'établir une relation thérapeutique avec le client; de réaliser des discussions avec le médecin sur l'efficacité des mesures thérapeutiques; de faire un enseignement adapté et personnalisé au client; d'évaluer l'adhésion du client face aux mesures thérapeutiques et d'évaluer la satisfaction du client face aux mesures thérapeutiques. Tout de même, entre 37,8% et 46,3% des participants n'ont réalisés aucune des ces activités. Pour le niveau des connaissances et les croyances du personnel infirmier, le résultat moyen pondéré est de 61,5 (7,7)%. Le nombre moyen de personnes rencontrés par le personnel infirmier qui souffrent de douleur chronique est de 2,7 (3,7) personnes par semaine. Les principales barrières que le personnel infirmier en GMF perçoit dans la gestion de la douleur chronique sont la méconnaissance des interventions possibles en douleur (71,7%), la non-disponibilité des informations sur la gestion de la douleur (52,8%) et le manque de temps ou la charge de travail de trop lourde (45,3%).

CONCLUSIONS: Le personnel infimier au sein des GMF est en mesure d'effectuer le suivi de la douleur chronique et pourrait être un rouage important d'une structure provinciale par paliers pour le suivi de ce problème de santé. Néanmoins, pour cela, il serait nécessaire de mettre en place des mécanismes de formation et de soutien pour le personnel infirmier en GMF sur l'évaluation et la gestion de la douleur chronique.

10A
AGE AND GENDER-RELATED PATTERNS IN CANCER PAIN SEVERITY AND QUALITIES

Lynn R Gauthier, MA, School of Kinesiology and Health Sciences, York University; University Health Network, Toronto, Ontario; Robert H Dworkin, PhD, Departments of Anesthesiology and Neurology, University of Rochester School of Medicine and Dentistry, Rochester, New York, USA; Ronald Melzack, PhD, Department of Psychology, McGill University, Montreal, Quebec; Gary Rodin, MD; Camilla Zimmermann, MD, PhD; David Warr, MD, University Health Network, University of Toronto; S Lawrence Librach, MD, The Temmy Latner Centre for Palliative Care, Mount Sinai Hospital, University of Toronto; Malcolm Moore, MD; Frances A Shepherd, MD, University Health Network, University of Toronto; Lucia Gagliese, PhD, School of Kinesiology and Health Sciences, York University, University Health Network, University of Toronto; Mount Sinai Hospital, Toronto, Ontario

AIM: Age and gender-related patterns in cancer pain are equivocal. Studies simultaneously considering their interaction on cancer pain severity (PS) and pain qualities (PQ) are lacking. Therefore, the aim is to examine age and gender-related patterns in cancer PS and PQ.

METHODS: 99 advanced cancer patients with pain completed the Brief Pain Inventory and the Short-form McGill Pain Questionnaire-2 (SF-MPQ-2) to assess PS and PQ. Six groups matched for gender and tumour type (younger men (YM), younger women (YW): age 18-50; midlife men (MM), midlife women (MW): 51-60; older men (OM), older women (OW): >60) were formed. Factorial ANOVAs examined age and gender differences.

RESULTS: Patients were aged 43.2±7.2, 55.1±2.8 and 69.4±6.1. 60.6% were female in each group. Age and gender were unrelated to PS ($p>.5$). Older patients reported lower SF-MPQ-2-Affective scores (2.2±2.4) than younger (3.7±2.5) and midlife patients (3.6±2.6; $p\leq.03$). There was a trend for lower Affective scores in women than men (2.7±2.5 vs. 3.8±2.6; $p=.06$). Although the total number of words chosen (NWC) did not differ, YM (4.8±1.4) and OM (4.5±1.6) had greater Continuous-NWC than YW (3.9±1.4) and OW (3.3±1.9; $p=.06$); MM (3.1±1.8) and MW (3.9±1.5) did not differ from each other. There was a trend for lower Intermittent-NWC in women than men (2.5±2.0 vs. 3.4±2.3; $p=.08$). Older patients had lower Affective-NWC (1.7±1.3) than younger (2.8±1.2) and midlife patients (2.4±1.3; $p\leq.03$). Women had lower Affective-NWC than men (2.1±1.3 vs. 2.7±1.3 ;$p=.03$).

CONCLUSIONS: Despite similar severity, age and gender-related patterns in cancer pain qualities were found. Additional studies of these patterns and their impact on adjustment to cancer pain are needed.

10B

RESPIRATORY DEPRESSION FOLLOWING THERAPEUTIC ADMINISTRATION OF OPIOIDS IN THE OPERATING ROOM: AN OPIOID PATHWAY PHARMACOGENETIC ANALYSIS

Parvaz Madadi, PhD, Hospital for Sick Children, Toronto, Ontario; Johanna Sistonen, PhD, University of British Columbia, Vancouver, British Columbia; Rebecca Gladdy, MD, PhD; Gregory Silverman, MD; Jose C Carvalho, MD, PhD, Mount Sinai Hospital, Toronto, Ontario; Colin JD Ross, PhD; Bruce C Carleton, PhD; Michael R Hayden, MD, PhD, University of British Columbia, Vancouver, British Columbia; Gideon Koren, MD, The Hospital for Sick Children, Toronto, Ontario

AIM: Systemic approaches are needed to understand how variations in the genes associated with absorption, distribution, metabolism, elimination and response to opioids can be used to predict clinical outcome. We present 2 cases of life threatening opioid-induced respiratory depression in the operating room. Case One: The patient had severe respiratory depression following 2 mg of subcutaneous morphine on top of intrathecal morphine administered for a Cesarean section. The patient had a history of near apnea with one dose of codeine/acetaminophen (30mg/500mg respectively), but tolerated hydromorphone. Case Two: Life threatening respiratory depression occurred following epidural morphine given at standard doses for surgical removal of tumor. Post-operatively, the patient needed only 0.6mg total of IV hydromorphone over 4 days for pain management.

METHODS: Functional candidate polymorphisms in genes involved in opioid metabolism and action pathway (CYP2D6, UGT2B7, ABCB1, OPRM1, COMT) were genotyped by using SNaPshot® and TaqMan® Drug Metabolism Genotyping assays or by amplifying and re-sequencing the corresponding genomic regions.

RESULTS: Genotype results revealed this patient had an increased propensity to generate active metabolites from both codeine (extensive CYP2D6 activity) and morphine (increased UGT2B7 activity) while having a functional μ-opioid receptor system. These active metabolites are not generated with hydromorphone. Case Two: Collectively, this patient appeared to have increased exposure and overall sensitivity to morphine and hydromorphone. Decreased ABCB1 efflux transporter activity at the blood-brain barrier, in combination with low COMT activity associated with increased sensitivity of the μ-opioid receptor system may have predisposed the patient to this adverse outcome.

CONCLUSIONS: An opioid pathway pharmacogenetic approach along with clinical history may provide insight into severe respiratory depressive events in patients who received therapeutic doses of opioids and may be useful information to mitigate future adverse events.

SESSION 202 – 10:45 AM

11

THE IMPORTANCE OF MAST CELLS IN DIFFERENT PAIN STATES

Chair: Jason McDougall, BSc, PhD, Associate Professor, AHFMR Senior Scholar, Arthritis Society Investigator, Department of Physiology and Pharmacology, University of Calgary, Calgary, Alberta; 2011 Scientific Program Chair, Canadian Pain Society

Speakers: Fiona Russell, PhD, Department of Physiology and Pharmacology, University of Calgary, Calgary, Alberta; Greg Dussor, PhD, Assistant Professor, Department of Pharmacology, The University of Arizona, College of Medicine, Tucson, Arizona, USA; Martin Steinhoff, MD, PhD, Professor of Dermatology, Departments of Surgery and Dermatology, UCSF Centre for the Neurobiology of Digestive Diseases, San Francisco, California, USA

Learning Objectives:

Attendees will learn about the following:

1. Role of mast cells in joint pain.

2. Role of mast cells in migraine.

3. Role of mast cells in skin inflammation and skin pain.

4. Potential new therapeutic treatments for chronic pain that target mast cell activation.

11A

SYNOVIAL MAST CELLS AND JOINT PAIN

Fiona Russell, PhD

Department of Physiology and Pharmacology, University of Calgary, Calgary, Alberta

Patients with chronic inflammatory joint disease, such as rheumatoid arthritis, have been seen to have increased numbers of mast cells in their synovium. Mast cells release serine proteinases which can affect intracellular signalling through the activation of specialised G protein coupled receptors called proteinase activated receptors (PARs). We have previously shown that activation of PAR_4 causes sensitisation of knee joint afferent fibres in the rat, but it was unclear whether this was a direct or indirect effect on the nerves. We now show that PAR_4 is expressed on 100% tryptase positive mast cells in the synovium and stabilisation of these mast cells prevents the PAR_4-induced sensitisation of afferent fibres. Furthermore, mast cell stabilisation attenuates the PAR_4-induced mechanical allodynia and alteration in weight bearing observed in rats after intra-articular injection of a PAR_4-activating peptide. Thus, the pro-nociceptive effects of PAR_4 activation are highly dependent on the activation of mast cells. Therefore, it is conceivable that during chronic joint disease where mast cells are present in greater numbers, they play a significant role in the maintenance of chronic joint pain.

11B

THE CONTRIBUTION OF MAST CELLS AND DECREASED MENINGEAL PH TO MIGRAINE HEADACHE

Greg Dussor, PhD

Assistant Professor, Department of Pharmacology, The University of Arizona, College of Medicine, Tucson, Arizona, USA

Migraine headache is one of the most common chronic pain conditions but the pathophysiology leading to this disorder is still poorly understood. We have recently found that trigeminal nociceptors innervating the cranial dura mater respond to small drops in pH (e.g. from 7.4 to 7.0) via activation of acid-sensing ion channels (ASICs). This suggests that decreased pH within the dura leads to afferent signaling and migraine headache. Decreased dural pH may occur as a result of sterile inflammation due to degranulation of meningeal mast cells which has been proposed to occur before or during migraine. Using patch-clamp electrophysiology of identified dural afferents, we have found that the pH-induced excitability of these neurons is increased following exposure to mast cell mediators including serotonin, histamine, PGI_2, and a PAR-2 agonist. Exposure to mast cell mediators increased the percentage of dural afferents firing action potentials at pH 7.0 from 15% to 45% and firing was observed in 10% of dural afferents even at pH 7.2 after exposure to these mediators. Additionally, rats administered compound 48/80 directly onto the dura to degranulate mast cells developed facial allodynia, a common complaint of migraine patients during the headache phase. However, it is not yet known what role ASICs play in this behavioral response. Taken together, these data suggest that degranulation of meningeal mast cells contributes to migraine headache by promoting ASIC-mediated signaling in dural afferents. Thus, preventing ASIC-mediated dural afferent activity following mast cell degranulation may prove effective as a therapy for migraine headache.

11C

MAST CELL-NEURONAL COMMUNICATION IN SKIN DISEASES, ITCH AND PAIN

Martin Steinhoff, MD, PhD

Professor of Dermatology, Departments of Dermatology and Surgery, UCSF, San Francisco, California, USA

The molecular mechanisms which regulate itch and pain in chronic inflammatory skin diseases, and the factors which dissect the pathways determining itch and pain are still poorly understood. Mast cells have been shown to play a pathophysiological role both in itch and pain transmission in skin diseases. Patients with atopic dermatitis, for example, suffer from severe itch which can not be controlled by antihistamines. Thus, other mediators and receptors may be crucial for the crosstalk between mast cells and nerves in cutaneous inflammation associated with itch. Candidates are proteases like mast cell tryptase or kallikreins which can activate protease-

activated receptors (PARs) on skin cells and nerves thereby regulating neurogenic inflammation and itch. Here, we demonstrate that mice which over-express PAR2 in the skin spontaneously develop an atopic-like dermatitis with severe scratching behaviour supporting the idea of PAR2 as a crucial receptor in chronic itchy dermatitis. Mast cells are also markedly enhanced in inflammatory skin diseases associated with severe pain (neurogenic rosacea) indicating a role of mast cell mediators in painful facial skin diseases. Understanding the pathways and receptors involved in mast cell-neuronal communication may help to develop better therapies for the treatment of itchy as well as painful chronic skin diseases.

SESSION 203 – 10:45 AM

12
ADVANCE PRACTICE NURSING ROLES IN PAIN MANAGEMENT IN CANADA

Chair: Kathy Reid

Speakers: Marsha Campbell Yeo, RN MN NNP-BC PhD(c); Shirley Musclow, RN, MN, NP; Judy Watt-Watson, PhD, RN

Marsha Campbell Yeo, RN MN NNP-BC PhD(c), Fellow, Clinical Research Initiative, CIHR, Neonatal Nurse Practitioner, NICU, IWK Health Centre, Halifax, Nova Scotia; Shirley Musclow, RN, MN, NP, Lawrence S Bloomberg Faculty of Nursing, University of Toronto; Judy Watt-Watson, PhD, RN, Professor Emerita, Lawrence S Bloomberg Faculty of Nursing, University of Toronto, Toronto, Ontario

OBJECTIVE: This interactive workshop will discuss current advance practice roles for nurses in pain management in Canada. Participants will be involved in discussion of challenges in creating and sustaining roles. Upon completion of this session, participants will be able to meet the learning objectives listed below.

Learning Objectives:

1. Discuss system, clinical and regulatory challenges in implementing and sustaining roles.

2. Discuss the evidence supporting nursing roles in pain management including Clinical Nurse Specialist and Nurse Practitioner roles.

3. Discuss current Canadian initiatives to advance the role in practice, policy and education contexts.

12A
NURSING ROLES IN PAIN MANAGEMENT: CHALLENGES IN IMPLEMENTING AND SUSTAINING ROLES

Marsha Campbell Yeo, RN MN NNP-BC PhD(c)

Fellow, Clinical Research Initiative, CIHR; Neonatal Nurse Practitioner, NICU, IWK Health Centre, Halifax, Nova Scotia

Nurses in roles in pain management in Canada face many challenges including lack of funding for dedicated pain management roles, role confusion due to inconsistent titles and position descriptions, and complexitiy of care. The Federal Government continues to limit prescribing authority of NP's in Canada, leading to barriers in meeting the needs of our clients.

12B
NURSING ROLES IN PAIN MANAGEMENT: CHALLENGES IN IMPLEMENTING AND SUSTAINING ROLES

Shirley Musclow, RN, MN, NP

Lawrence S Bloomberg Faculty of Nursing, University of Toronto, Toronto, Ontario

Advance practice nursing roles in Canada are guided by the CNA National Framework (2008). Clinical Nurse Specialists and Nurse Practitioners are currently the two recognized advanced practice nursing roles in Canada. Role responsibilities identified by nurses in advance practice include clinical, administrative and educational activities. The NI-SIG has developed role description statements for Nurse Clinician, Nurse Practitioner and Clinical Nurse Specialist in pain management.

12C
ADVANCED PRACTICE NURSING ROLES IN PAIN MANAGEMENT: ACADEMIC PREPARATION AND FUTURE DIRECTIONS

Judy Watt-Watson, PhD, RN

Professor Emerita, Lawrence S Bloomberg Faculty of Nursing, University of Toronto, Toronto, Ontario

Academic preparation of nurses for advance practice roles in pain management is lacking in Canada. There are few dedicated pain management courses at graduate levels. New directions include the Diploma in Anaesthesia Care at the University of Toronto for NP's, and the role of Clinician Scientist. Future roles for PhD prepared nurses in pain management need to be developed.

SESSION 204 – TRAINEE SESSION – 1:30-3:00 PM

13
MEDIA TRAINING FOR SENIOR, JUNIOR, AND TRAINEE PAIN SCIENTISTS: SUCCESSFUL NAVIGATION OF MEDIA RELATIONS

Chair: Sheila O'Keefe-McCarthy, RN, PhD(c), Canadian Pain Society Trainee Representative, Lawrence S Bloomberg Faculty of Nursing, University of Toronto, Toronto, Ontario

Speakers: Roman Jovey, MD, CPM Centres for Pain Management, Mississauga; Rob McEwan, BA, Argyle Communications, Toronto, Ontario

BACKGROUND: Among the many skill sets required for a successful career as a basic or clinical pain scientist, little attention has focused on the development of effective media relations. In particular, most junior scientists, doctoral, and post-doctoral students in Canada do not receive formal media relationship training. Research, disease related advocacy, and in particular, politically charged pain-related health and wellness issues, campaigns, and media launches demand that researchers and scientists cultivate effective communication skill sets to ensure healthy media relations.

AIM: The aim of this student trainee workshop is to provide proactive communication strategies of how to navigate and strategize for successful media relations.

Learning Objectives:

1. Provide tips and strategies in effective media communication from a medical, pain specialist and media experts' perspective.

2. Discuss what challenges arise in politically charged pain-related media issues and how one may approach a difficult question, inference, or interview.

3. Provide experiential examples of successful media relations from a clinical and/or basic pain scientists or media experts' perspective.

4. Provide trainees a viable strategy in order to effectively communicate with the media about their research.

13A
NEGOTIATING THE PAIN AGENDA – TRYING TO FACILITATE CHANGE

Roman Jovey, MD; Rob McEwan, BA

CPM Centres for Pain Management, Mississauga; Argyle Communications, Toronto, Ontario

An overview and specific examples of recent media initiatives undertaken by the Canadian Pain Society and the lessons learned for raising awareness of pain in Canada.

SESSION 205 – ORAL PRESENTATIONS – 1:30-3:00 PM

14

CROSS-CANADA CHECK-UP 2010: A SURVEY OF FAMILY MEDICINE RESIDENCY TRAINING IN CHRONIC NON CANCER PAIN (CNCP) AND ADDICTION

Ruth E Dubin, MD, PhD, FCFP, Kingston Family Health Team, and Queen's University, Kingston, Ontario; Judi Hunter, BSc(PT), MSc, PhD, Assistant Professor, Department of Physical Therapy, University of Alberta, Edmonton, Alberta, and University of Toronto, Curriculum Director, U of A Certificate in Pain Management Course, Toronto, Ontario; Roman D Jovey, MD, Medical Director, CPM Centres for Pain Management, Physician Director, Addictions, Concurrent Disorders, Credit Valley Hospital, Mississauga, Ontario; Canadian Pain Society Primary Care Chronic Pain Education Group, Drs Andre Belanger, Josh Foley, Ian Forster, John Fraser, Raju Hajela, Lydia Hatcher, Howard Jacobs, James Kim, Michel Montbriand, Lorie Montgomery, Murray Opdahl, Nadia Plach, Omar Rahaman, Pam Squire, Margaret Szott, Mark Ware, Erica Weinberg, Howard Wu

AIM: Family physicians manage the majority of patients with CNCP (1). This exploratory descriptive study aimed to survey the designated time for formal teaching about CNCP including addiction, for Canadian family medicine residents (FMR).

METHODS: Family medicine programme directors from Canadian medical schools (n=16) were asked to state the objectives and number of hours devoted to chronic pain, acute pain, palliative care, and addiction.

RESULTS: Response rate was 81.3% (13/16 schools, 17 sites)*. All mandate 1 month of palliative care. Eleven provide acute pain training. CNCP teaching averaged 3.44 hours (range 0-8). Ten offered CNCP electives but most reported that < 5% of residents participated. Exceptions were McMaster (40%), Calgary (33%), Northern School of Medicine (50-100%) and Regina (20%). Fourteen sites reported addiction training ranging from "included in other talks" to 18 hours in Calgary. Pain education objectives were mostly brief and general (e.g. "become comfortable and competent in pain management") except Calgary and Dalhousie who supplied specific training goals. Interprofessional exposure was available at 7/17 sites with 4.1 (range 1-7) other healthcare providers represented. CCFP lists 99 conditions for FMR competence, with minimal focus on chronic pain or multi-modal strategies. "Pain" competency summaries (headache/chest/back/abdomen/joint) stressed ruling out emergencies. "Substance Abuse" lacked content on prescription opioid addiction.

CONCLUSIONS: Effective pain management requires adequate training. Most CNCP teaching to Canadian FMRs is elective and varies in content. Acknowledging the NOUGG guidelines (2), we suggest that adequate FMR training requires medical, functional/rehabilitation, self-management and bio-psycho-social-spiritual aspects of chronic pain and addiction.

FOOTNOTES/REFERENCES: *(as of 22/8/2010)

1. CPS NANOS survey, 2008.
2. NOUGG Guidelines, http://nationalpaincentre.mcmaster.ca/opioid/index.html

14A

TOWARDS A NEW APPROACH FOR THE DETECTION OF PAIN IN ADULTS: THE NEAR-INFRARED SPECTROSCOPY (NIRS)

Céline Gélinas, PhD, McGill University, School of Nursing; Manon Choinière, PhD, Centre de recherche, Centre Hospitalier Universitaire de Montréal; Manon Ranger, PhD(c); Caroline Arbour, PhD Student, McGill University, School of Nursing; André Denault; Alain Deschamps, MD, PhD, Institut de Cardiologie de Montréal; Celeste Johnston, DEd, McGill University, School of Nursing, Montreal, Quebec

AIM: This pilot study examined the validity of the regional cerebral oxygenation measure (rSO2) using the Near-Infrared Spectroscopy (NIRS) technique (INVOS system) for measuring pain during nociceptive procedures in adults undergoing cardiac surgery.

METHODS: A before-after within-subjects design was used for this study which involved a total of 40 adult cardiac surgery patients. Two other pain measures were also used: The Critical-Care Pain Observation Tool (CPOT) for pain-related behaviors, and a 0-10 Faces Pain Thermometer for pain intensity. Data collection was completed in the operating room during two testing periods 1) before, and 2) after the induction of anesthesia. Each testing period included a baseline, a tactile stimulus (skin disinfection), nociceptive stimuli (e.g. intravenous and arterial line insertions; sternal bone incision, thorax opening), and a post-procedure evaluation.

RESULTS: Findings revealed increased rSO2 values ($p < 0.001$) during the nociceptive procedures for both testing periods, supporting its discriminant validation. Interestingly, changes in rSO2 were lower in patients who received morphine compared with those who did not. CPOT scores (<2/8) and pain intensity self-reports (2/10 and 3/10) also increased significantly during the intravenous and arterial line insertions although the scores were relatively low on the average. No significant associations were found between the rSO2 and the other two pain measures but this may due to their low range of variability.

CONCLUSIONS: Although further research is needed in patients undergoing more painful procedures, the NIRS appears to be a promising technique in the pain assessment process.

14B

EVALUATING AN INTERDISCIPLINARY PAIN PROTOCOL IN LONG TERM CARE

Sharon Kaasalainen, RN, PhD; Kevin Brazil, PhD, McMaster University, Hamilton, Ontario; Thomas Hadjistavropoulos, PhD, University of Regina, Regina, Saskatchewan; Esther Coker, RN, MScN, MSc, St Peter's Hospital; Jenny Ploeg, RN, PhD; Lisa Dolovich, BScPhm, PharmD, MSc; Alba DiCenso, PhD, McMaster University, Hamilton, Ontario; Ruth Martin-Misener, RN-NP, PhD, Dalhousie University, Halifax, Nova Scotia; Faith Donald, RN(EC), PhD, Ryerson University, Toronto; Noori Akhtar-Danesh, PhD; Alexandra Papaioannou, MD, FRCPC, FACP; Anna Emily, MD, MSc, McMaster University, Hamilton; Tim Burns, BA, MBA, Ontario Ministry of Health and Long Term Care, Toronto, Ontario

AIM: The objectives of this project were to evaluate the effectiveness of (a) dissemination strategies in improving clinical practice behaviours (e.g., frequency and documentation of pain assessments, use of pain medication) among health care team members, and (b) the implementation of the pain protocol in reducing pain in long term care (LTC) residents.

METHODS: We used a controlled before-after design to evaluate a pain protocol intervention that used a multifaceted approach to its implementation, including a site working group, pain education and skills training, and other quality improvement activities. We collected data (i.e., pain assessments, quality indicators related to pain management) for 200 LTC residents; 100 for the intervention and 100 for the control group across four LTC homes.

RESULTS: We found that pain increased significantly more for the control group than the intervention group. The percentage of residents with a non-pharmacological intervention documented for pain increased to 28.6% in the intervention group and decreased to 18.3% in the comparison group. Also, there were statistically significant findings between the intervention and comparison groups representing a positive change in clinical practice behaviour favouring the intervention group for the following indicators: use of a standardized pain assessment tool, the assessment process accommodated for residents with cognitive and/or language problems, and an admission/initial pain assessment was completed.

CONCLUSIONS: These study findings indicate that the implementation of a pain protocol intervention improved the way pain was managed and provided pain relief for LTC residents.

14C

SAFETY OF A COLD PRESSOR TEST & RELIABILITY OF INFRARED MEASUREMENTS OF SKIN TEMPERATURE SIDE DIFFERENCES TO DETECT CRPS: A PILOT STUDY

Tara Packham, BHScOT, MSc(c), Neurosciences and Trauma Program, Hamilton Health Sciences, School of Rehabilitation Sciences; Diana Fok, MScOT, School of Rehabilitation Sciences; Karen Frederiksen, MScOT, School of Rehabilitation Sciences; Lehana Thabane, PhD, Michael DeGroote School of Medicine; Norman Buckley, BA(Psych), MD, FCRPC, Pain Management Centre, Hamilton Health Sciences, Michael DeGroote School of Medicine, McMaster University, Hamilton, Ontario

AIM: Skin temperature side differences (SkTSD) have been used in the diagnosis of complex regional pain syndrome (CRPS) but most studies have failed to address reliability issues. This pilot study tested the safety of a cold pressor test (CPT) protocol, and examined reliability of proposed equipment and methods for a future validity study of SkTSD as a diagnostic indicator in CRPS.

METHODS: 20 volunteers (12 normals, 8 CRPS, ages 22-83) participated in a single testing session, including a CPT protocol [left foot submerged in 5°C water 30 seconds]. Blood pressure (BP) and pain (using VAS) were measured pre and post CPT. SkTSD were measured at five points on both hands with an IR thermometer.

RESULTS: The CPT protocol did not produce changes in BP (ANOVA of BP pre and post p=0.36) yet the short cold exposure activated a measurable response (mean skin temp. change 1.01 degrees after 30 seconds of cold). SkTSD measurement results using IR thermometers support inter-rater reliability (ICC estimates varied from 0.79 - 0.99); all skin temperature measurement points were also highly reliable (ICC 0.89-0.91).

CONCLUSIONS: Overall, the CPT protocol implemented in this study shows promise in being an effective and safe method to elicit a sympathetic response for detection of SkTSD. These preliminary findings using IR thermometers to measure SkTSD support the feasibility of their use in future CRPS research.

14D

VALIDATION OF THE NUMERICAL RATING SCALE FOR PAIN INTENSITY AND UNPLEASANTNESS IN PEDIATRIC ACUTE POST-OPERATIVE PAIN: SENSITIVITY TO CHANGE OVER TIME

Gabrielle Pagé, MA, Department of Psychology, York University; Jennifer Stinson, PhD, Department of Anaesthesia and Pain Medicine, Hospital for Sick Children & Faculty of Nursing, University of Toronto; Fiona Campbell, MD, Department of Anaesthesia and Pain Medicine, Hospital for Sick Children & Department of Anaesthesia, Faculty of Medicine, University of Toronto; Lisa Isaac, MD, Department of Anaesthesia and Pain Medicine, Hospital for Sick Children & Department of Anaesthesia, Faculty of Medicine, University of Toronto; Andrea L Martin, MA, Department of Psychology, York University; Joel Katz, PhD, Department of Psychology, York University and Department of Psychology, Hospital for Sick Children, Toronto, Ontario

AIM: Despite its frequent use, few studies have examined the validity of the Numerical Rating Scale (NRS) for pediatric postoperative pain. The objectives of this study were to evaluate the convergent and predictive validity of the NRS for pain intensity and unpleasantness and its sensitivity to change in children/adolescents with acute postoperative pain.

METHODS: Eighty-three children (male=33%) between the ages of 8 and 18 years (mean=13.2, sd=2.4) completed the NRS for pain intensity (NRSI) and unpleasantness (NRSU), Verbal Rating Scale for pain intensity (VRSI) and unpleasantness (VRSU), and Faces Pain Scale-Revised (FPS-R) for pain intensity and Facial Affective Scale (FAS) for pain unpleasantness 48-72 hours after major surgery. Two weeks after surgery, participants completed the NRSI, NRSU, VRSI, VRSU, and Functional Disability Index (FDI).

RESULTS: The NRSI and NRSU administered 48-72 hours after surgery correlated highly with the VRSI (r=0.75) and FPS-R (r=0.76), and the VRSU (r=0.69) and FAS (r=0.67), respectively. The FDI correlated moderately with the NRS 48-72 hours (NRSI: r=0.43; NRSU: r=0.35) and two weeks (NRSI: r=0.44; NRSU: r=0.53) after surgery. Scores on the NRS 48-72 hours were significantly higher than two weeks after surgery, for both pain intensity (mean change=1.49; t=5.25; p<0.001; effect size=0.68) and unpleasantness (mean change=1.89; t=5.30; p<0.001; effect size=0.72).

CONCLUSIONS: The NRS has adequate convergent and discriminant validity, and is sensitive to changes in acute pain levels. This study adds to the growing support of the validity of the NRS in pediatric pain settings by expanding its current use to include measurement of pain unpleasantness.

14E

LOCAL ACTIVATION OF THE PROTEINASE-ACTIVATED RECEPTOR-2 (PAR2) CAUSES SENSITIZATION OF JOINT AFFERENTS IN NAÏVE RATS

Niklas Schuelert, Postdoctoral Fellow; Jason J McDougall, Associate Professor, Department of Physiology and Pharmacology, University of Calgary, Calgary, Alberta

AIM: Protease activated receptors (PARs) are G-protein coupled receptors which are cleaved by an enzyme leading to pain signalling. The present study examined whether local administration of the PAR2 receptor activating peptide 2-furoyl-LIGRL-NH2 can alter mechanosensitivity of joint afferents in the rat knee joint.

METHODS: 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 the PAR2 activating peptide 2-furoyl-LIGRL-NH2 or the inactive scrambled peptide 2-furoyl-LRGIL-NH2 as control (0.01mM, 0.1mM, 1mM; 100ul). The number of action potentials per movement were determined every 2 min until 15 min post dosing.

RESULTS: A local injection of 2-furoyl-LIGRL-NH2 caused a dose-dependent increase in afferent firing rate during normal rotation and during noxious hyper-rotation of the rat knee joint. This sensitizing effect was found to be maximal 5 min after drug injection. In addition 2-furoyl-LIGRLO-NH2 induced spontaneous activity in a subgroup of recorded joint afferents. The inactive peptide had no effect.

CONCLUSIONS: These findings indicate that local activation of PAR2 receptors induces peripheral sensitization of knee joint. The induction of spontaneous activity reflects chronic pain transmission without joint movement. The results provide evidence that PAR2 receptors are pronociceptive in rat knee joints and therefore have the capacity to generate joint pain. Targeting the PAR2 receptor in the peripheral nervous system could offer novel therapeutic approaches for an efficient treatment of joint pain.

MODERATED POSTERS – 3:00 PM

15

A SYSTEMATIC REVIEW OF LOW DOSE INTRAVENOUS KETAMINE FOR POSTOPERATIVE PAIN MANAGEMENT

Kevin Laskowski, MD; Alena Stirling, MD; William P McKay, MD; Hyun J Lim, PhD, University of Saskatchewan, Saskatoon, Saskatchewan

AIM: A systematic review of perioperative low-dose intravenous ketamine for pain management was done to delineate subgroups that benefit from ketamine and those for whom it is not helpful. Previous reviews have included all routes of administration and assumed a fixed-effects model. Heterogeneity between studies is significant and this was addressed by narrowing inclusion criteria, using a random effects model and performing subgroup analyses.

METHODS: In accordance with PRISMA guidelines, the review included high-quality studies that were randomized, double-blinded and placebo-controlled using low-dose intravenous ketamine (<0.5mg/kg bolus and <500mcg/kg/hr infusion) as the treatment group. Studies with regional anesthesia were excluded. No limitation was placed on patient age or language of publication.

RESULTS: Fifty-eight studies were analyzed. A reduction in total narcotic consumed and increase in time to first narcotic dose was observed (p<0.001). Despite using more narcotic, half of the placebo groups experienced more pain than the ketamine groups, implying an improved quality of pain control in addition to the decrease in narcotic consumption. This

effect was sustained past 24 hours in one quarter of the studies, suggesting a longer term benefit. There was a trend towards a decrease in nausea and vomiting, pruritis and urinary retention at the expense of an increase in sedation with increasing size of ketamine doses. Hallucinations and nightmares were not increased by ketamine.
CONCLUSIONS: Intravenous low-dose ketamine is useful for postoperative pain, with particular benefit when added to PCA, and for painful procedures such as upper abdominal and thoracic surgeries.

15A
WITHDRAWN

15B
ANTI-NOCICEPTIVE AND ANTI-INFLAMMATORY ACTIVITIES OF THE HEXANE AND ETHYL ACETATE EXTRACTS OF *CROTON MACROSTACHYUS* STEM BARK IN RATS AND MICE

Mbiantcha Marius, Docteur; Kamanyi Albert, Professeur; Nguelefack Telesphore Benoit, Docteur, Laboratoire de physiologie Animale et de phytopharmacologie; Ndontsa Blanche Laure, Doctorant; Tane Pierre, Maître de Conférences, Laboratoire de produits naturels de l'Université de Dschang, Dschang, Cameroun

AIM: The hexane and ethyl acetate extracts of the stem bark of *Croton macrostachyus* (family Euphorbiaceae) were investigated for possible anti-nociceptive and anti-inflammatory effects in mice and rats.
METHODS: Three models were used to study the extracts effects on nociception which were the acetic acid-induced abdominal constriction test, formalin test (both in mice) and the analgesy meter test in rats. The anti-inflammatory effects were investigated employing the carrageenan-, histamine-, serotonin-, and formalin-induced hind-paw oedema in rats.
RESULTS: Results of the study revealed the extracts to have significant ($P < 0.001$) anti-nociceptive effect at a dose of 600 mg/kg p.o. in mice and rats in all the models for anti-nociception while 300 mg/kg p.o. showed significant ($P < 0.001$) effect in the acetic acid-induced abdominal constriction test and in the formalin test. The two extracts also exhibited acute and chronic anti-inflammatory effects which were found to be significant ($P < 0.001$) at 600 mg/kg p.o. in the rats tested. Preliminary phytochemical screening of the extract showed the presence of alkaloids, terpenoids and phenolic compounds in the hexane extract, whereas the ethyl acetate extract showed the presence of flavonoids, terpenoids and phenolic compounds.
CONCLUSIONS: The results suggest the extract contains pharmacologically active principles. The result is in agreement with the local application of the plant in painful and inflammatory conditions.

SESSION 207 – 4:00 PM

16
MIND THE GAP: PROMOTING SELF-MANAGEMENT AND HEALTH CARE TRANSITION IN YOUTH AND YOUNG ADULTS WITH CHRONIC PAIN

Chair: Jennifer Stinson, RN, PhD, CPNP Scientist, Child Health Evaluative Sciences, Nurse Practitioner, Chronic Pain Program, The Hospital for Sick Children; Assistant Professor, Lawrence S Bloomberg Faculty of Nursing, University of Toronto, Toronto, Ontario

Speakers: Khush Amaria, PhD, CPsych, Clinical Psychologist, Team Lead, Good 2 Go Transition Program, Adolescent Medicine, Hospital for Sick Children; Jennifer Stinson, RN-EC, PhD, CPNP, Scientist, Child Health Evaluative Sciences; Nurse Practitioner, Chronic Pain Program, The Hospital for Sick Children; Assistant Professor, Lawrence S Bloomberg Faculty of Nursing and Department of Pediatrics, University of Toronto; Marilyn Galonski, RN, BScN, Care Coordinator, Wasser Pain Management Centre, Joseph and Wolf Lebovic Health Complex, Mount Sinai Hospital, Toronto, Ontario

OBJECTIVE: Many youths will suffer from persistent pain into adulthood. Little is known about these youths' transition experiences as they move into adult health care systems. Furthermore, youth are expected to assume increasing responsibility for disease management concomitant with their growing independence and autonomy. In the absence of a cure or total pain relief for this group, the prevention of pain-related disability and improving quality of life through better chronic pain self-management and transitional care becomes critical.

Learning Objectives:

1. An overview of theory on adolescent development and transition care.
2. Research on the information and service needs of youths with chronic pain in Canada.
3. Perspectives from an adult chronic pain program and a young adult who successfully transitioned. There will be time allotted for interactive discussion regarding how we can better promote transitional care in youth with chronic pain in Canada.

16A
TRANSITIONING YOUTH FROM PAEDIATRIC TO ADULT HEALTH CARE: PREPARING ADOLESCENTS TO BE "GOOD 2 GO"

Khush Amaria, PhD, CPsych
Clinical Psychologist, Team Lead, Good 2 Go Transition Program, Adolescent Medicine, The Hospital for Sick Children, Toronto, Ontario

Dr Amaria will provide an overview of adolescent development (and the teen brain) while highlighting current theory on supporting youth with special health care needs in the transition from paediatric to adult health care. Tools to assess readiness for transition and resources to support patients, families and health care providers will be presented.

16B
UNDERSTANDING THE INFORMATION AND SERVICE DELIVERY NEEDS OF YOUTH AND YOUNG ADULTS WITH CHRONIC PAIN: A QUALITATIVE STUDY

Jennifer Stinson, RN-EC, PhD, CPNP
Scientist, Child Health Evaluative Sciences; Nurse Practitioner, Chronic Pain Program, The Hospital for Sick Children; Assistant Professor, Lawrence S Bloomberg Faculty of Nursing and Department of Pediatrics, University of Toronto, Toronto, Ontario

Dr Stinson will present the results from a qualitative study exploring the information and service delivery needs of youth and young adults with chronic pain. Focus group interviews were conducted with adolescents and young adults with chronic pain, parents of adolescents and health care professionals at two adult and one paediatric chronic pain programs in Ontario. Findings from this study will be used to develop an online self-management program for youth and young adults with chronic pain.

16C
BRIDGING THE GAP - A LONG WALK ACROSS THE AVENUE

Marilyn Galonski, RN, BScN
Care Coordinator, Wasser Pain Management Centre, Joseph and Wolf Lebovic Health Complex, Mount Sinai Hospital, Toronto, Ontario

The transition from pediatric to adult chronic pain management poses unique challenges to the adolescent patient, their family and health care providers. Ms Galonski will discuss the experience from the Wasser Pain Management Centre, an adult chronic pain Centre, and the strategies implemented to narrow the gap.

16D
A PATIENT PERSPECTIVE ON MOVING ON TO ADULT HEALTH CARE
TBA

SESSION 208 – 4:00 PM

17
DEVELOPMENT OF AGREE-COMPLIANT PRACTICE GUIDELINES EMPLOYING THE GRADE SYSTEM OF EVIDENCE EVALUATION
Chair: Michael McGillion

Speakers: Michael McGillion, RN PhD, University of Toronto, Toronto; Allison Cook, RN BScN MSc(c); Sandra Carroll, RN PhD, McMaster University, Hamilton, Ontario

Learning Objectives:

At the Conclusion of this hands-on workshop, participants will be able to:

1. Appraise the quality of evidence and practice recommendations using GRADE.

2. Understand the potential sources of biases in practice guideline development.

3. Appraise the internal and external validity of practice recommendations using the AGREE framework.

17A
HOW GRADE AND AGREE ADDRESS PROBLEMS WITH CURRENT PRACTICE GUIDELINES
Michael McGillion, RN PhD

University of Toronto, Toronto, Ontario

Multiple factors have an impact on how much confidence we can place in recommendations put forth in clinical practice guidelines. Judgments about the strength of each recommendation require careful consideration of the clinical context of intervention delivery, potential benefits versus harms, and the methodological quality of the available evidence. The complexity of practice guideline development and related decision making about evidence evaluation and implementation has led to widespread usage of multiple systems for evaluating the strength of clinical practice recommendations. Limitations of most systems include: a) reliance on implicit definitions of methodological quality, b) inconsistency in the depth of methodological evaluation and reporting of findings across clinical outcomes, and c) insufficient evaluation of clinical benefits versus harms. The Joint Canadian Cardiovascular Society (CCS) – Canadian Pain Society (CPS) Guidelines for the Management of Refractory Angina have been developed using the new GRADE and AGREE standards. (1,2) Examples from these guidelines will be used to explain practical implementation of the GRADE and AGREE systems, with attention to the formulation of clear clinical questions, assessing the importance of clinical outcomes, judging the quality of available evidence in context, and dealing with the all too common reality of inconsistent and imprecise results when faced with the task of making treatment recommendations. This workshop, targeted for pain education day, will be of key interest to future CPS guideline developers.

17B
EMPLOYING THE GRADE SYSTEM TO EVALUATE THE EVIDENCE
Allison Cook, RN BScN MSc(c)

McMaster University, Hamilton, Ontario

The quality of the evidence that supports our recommendation was rated according to the Grading Recommendations Assessment, Development and Evaluation (GRADE) system. (1) Users of systematically developed guidelines need to know how much confidence they can place in the recommendations that have emerged from the evidence reviewed. The GRADE system addresses some of the shortcomings of existing rating systems and enables more consistent and informed clinical decision making. Using examples of our evidence for RFA treatment interventions, participants will learn, hands-on, how to use the GRADE system and make judgments about whether or not to implement practice recommendations.

17C
ACHIEVING AGREE-COMPLIANCE
Sandra Carroll, RN PhD

McMaster University, Hamilton, Ontario

The AGREE (2) criteria guided our synthesis and practice recommendations. Quality is defined by the AGREE collaboration as "The confidence that the potential biases of guideline development have been addressed adequately and that the recommendations are both internally and externally valid, and feasible for practice" (AGREE Collaboration, p. 2). (2) The AGREE criteria cut across six domains including a) scope and purpose, b) stakeholder involvement, c) rigour of development, d) clarity of presentation, e) applicability, and f) editorial independence. Using our examples, participants will learn to develop and assess practice guidelines for AGREE-compliance. Participants will work with examples of evidence for refractory angina interventions and related practice recommendations. They will learn how to assess and develop practice guidelines for AGREE-compliance.

REFERENCES

1. GRADE Working Group. Grading quality of evidence and strength of recommendations. BMJ 2004;328:1490
2. The AGREE Collaboration. Appraisal of Guidelines for Research and Evalutation Instrument. September 2001. Available: http://www.agreecollaboration.org/instrument/

SESSION 209 – 4:00 PM

18
THE EVIDENCE TO SUPPORT A NEW PERSPECTIVE ON PHYSIOTHERAPY PAIN MANAGEMENT
Chair: Neil Pearson

Speakers: Neil Pearson, MSc, BScPT, BA-BPHE, University of British Columbia, Vancouver, British Columbia; David Walton, PT, PhD, FCAMT, University of Western Ontario, London; Laurie McLaughlin, PT, DSc, FCAMT, McMaster University, Hamilton, Ontario

OBJECTIVE: To propose a broader perspective of physiotherapy pain management that is supported by research and will improve patient outcomes.

Learning Objectives:

1. Describe a new perspective on the rationale for physical therapy in people with chronic pain.

2. Illustrate three specific examples of innovative physiotherapy pain management.

3. Identify the levels of evidence supporting physiotherapy as an intervention with which to create lasting positive adaptive changes in the person in pain.

18A
PATIENT EDUCATION AND KNOWLEDGE OF NEUROPHYSIOLOGY TO PROMOTE POSITIVE OUTCOMES
Neil Pearson, MSc, BScPT, BA-BPHE

University of British Columbia, Vancouver, British Columbia

Traditionally, patient education by physiotherapists has focused on a biomechanics and musculo-skeletal pathology. Given current understanding of pain biology and chronic pain neurophysiology the limited effectiveness of this education for people with chronic pain may be due to its underlying Cartesian paradigm. Since 2000, authors have reported important and lasting outcomes when people in chronic pain receive education related to pain biology and chronic pain neurophysiology. When successful, outcomes include positive changes in pain beliefs and attitudes, improved perceived ability and increased physical functioning. The mechanism by which these positive outcomes are maintained has not been studied. It is proposed that this education can provide the cognitive foundation allowing those with chronic pain to overcome a number of barriers to successful physical recovery and pain self-management.

18B
SHIFTING PARADIGMS FOR UNDERSTANDING THE MECHANISMS BEHIND EXERCISE AND MANUAL THERAPY FOR NON-CANCER PAIN PROBLEMS

David Walton, PT, PhD, FCAMT
University of Western Ontario, London, Ontario

Physical therapy has traditionally approached problems of pain from a structural standpoint, with a focus on identifying and remediating the 'tissue at fault'. Advances in our understanding of pain have forced us to accept that identifiable tissue pathology is rarely associated with presenting signs and symptoms. The paradigm for understanding the mechanisms of action behind traditional physical therapy treatments, especially manual therapies, is shifting towards neuroscience and the biopsychosocial models of health and injury. This session will provide an overview of the ways in which traditional physical therapy approaches to pain can be understood using new knowledge about pain, quality of life and the patient's interaction with their environment. The challenges in interpreting experimental research with respect to physical therapy in general and manual therapies specifically will be highlighted.

18C
THE IMPACT OF ALTERED BREATHING ON PAIN AND PHYSICAL OUTCOMES

Laurie McLaughlin, PT, DSc, FCAMT
McMaster University, Hamilton, Ontario

Breathing has both reflex and higher centre control. Higher centre control can be either conscious or unconscious. Pain, stress and fear are known ventilatory stimulants and examples of unconscious higher centre input leading to altered breathing. These changes in breathing impact respiratory chemistry, reducing CO_2 levels to result in hypocapnia and increased pH of bodily fluids including blood, cerebral spinal and extracellular fluid. This increased pH is associated with a cascade of physiological events, some of which could have profound effects on the nociception/pain systems. The effects are not trivial - blood flow to the brain can decrease by as much as 50%, sympathetic and hormonal regions of the brain are stimulated, tissue oxygenation throughout the body is diminished, smooth and skeletal muscle function changes, and activity in the central, sympathetic and peripheral nervous systems can be wound up. The connection between breathing, hypocapnia and persistent pain has been largely ignored in physiotherapy and medicine, partially due to the thought that breathing only responds reflexly rather than being a behaviour that is modified by conscious higher centre control. This workshop will present the argument that respiratory manifestations of pain and stress can be significant contributors to persistence of the problem, and then present an approach to clinical evaluation and management of hypocapnia, using capnography, including current evidence of its effects.

SATURDAY APRIL 16, 2011

KEYNOTE SPEAKER – 8:30 AM

19
HISTORICAL MILESTONES IN PAIN: A CANADIAN JOURNEY THAT SOMETIMES HURT

Mary Ellen Jeans, CM, RN, PhD
President, ME Associates, Ottawa, Ontario; 2011 Distinguished Career Award Recipient, Canadian Pain Society

This lecture will present an overview of progress in the field of pain science and care in Canada from 1970-2010. Major obstacles and challenges will be (are) identified and successes highlighted. The hopes and dreams of many of the pioneers will be described. Future challenges are identified and potential strategies for success described.

Learning Objectives:
Participants will:
1. Have a broad understanding of the early challenges to progress in pain science and care.
2. Gain knowledge of Canadian pioneers in the field of pain.
3. Have an appreciation of the milestones of progress in pain science and care and the future challenges.

KEYNOTE SPEAKER – 9:00 AM

20
THE FIRST ANNIVERSARY OF THE CANADIAN OPIOID GUIDELINE – "MAINTAINING MOMENTUM"

Andrea Furlan, MD, PhD
Staff Physician and Adjunct Scientist, Toronto Rehabilitation Institute; Associate Scientist, Institute for Work & Health; Assistant Professor, Division of Physiatry, Department of Medicine, University of Toronto, Toronto, Ontario; 2011 Early Career Award Recipient, Canadian Pain Society

DESCRIPTION: One year after its release, Dr Furlan reviews national and regional activities underway for dissemination, implementation and evaluation of the Canadian Opioid Guideline. She identifies research gaps regarding opioids for chronic non-cancer pain and describes plans to fill these gaps.

Learning Objectives:
1. To identify activities for dissemination, implementation and evaluation of the Opioid Guideline in your area.
2. To name at least 3 research gaps regarding opioids for chronic non-cancer pain in clinical practice.
3. To become aware of the Toronto Rehabilitation Institute's iDAPT laboratory and its capacity to conduct research on driving and pain medications.

MODERATED POSTERS – 9:30 AM

21
SURVEY OF KNOWLEDGE, ATTITUDES AND BEHAVIOURS AMONG ONTARIO PHYSIATRISTS REGARDING USE OF OPIOIDS FOR CHRONIC PAIN

Oleg Tugalev, MD, PGY 5, Physical Medicine and Rehabilitation, University of Toronto, Toronto, Ontario; Michael Allen, MD, Director, Evidence-Based Programs, Dalhousie University CME, Halifax, Nova Scotia; Andrea Furlan, MD, PhD, Physical Medicine and Rehabilitation, University of Toronto, Toronto, Ontario

AIM: We conducted an electronic survey among Ontario Physiatrists before the release of the Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain (CNCP). The goal of the survey was to determine physiatrists' knowledge, attitudes and behaviours regarding the use of opioids for CNCP.

METHODS: We contacted 142 Physiatrists by email and 35 completed the survey (25%). The majority had more than 10 years of experience (66%) and practiced in urban centres (89%). Only one Physiatrist had advanced training in pain management.

RESULTS: Of the 35 respondents, 9 (26%) did not prescribe opioids, 3 (9%) prescribed only weak opioids and 23 (65%) prescribed both weak and strong opioids. The main barriers for prescribing opioids were "too time consuming", "concerns with long-term adverse effects", and "type of practice that limits follow-up".

The majority assessed pain using a scale, assessed patient's level of function, and explained benefits and harms of long-term opioid therapy. Gaps included lack of assessment of risk for addiction using a screening tool, underutilization of urine drug screens and signed treatment agreement, not attempting to taper benzodiazepines, and not giving the patient written information about opioid therapy.

The majority (78%) considered that patients might need to be reassessed or more closely monitored when taking a daily dose equal to or less than 100 mg of morphine equivalents.

CONCLUSIONS: Most respondents indicated the need for further education and additional resources in the management of CNCP.

21A

TRANSDERMAL LIDOCAINE AND KETAMINE FOR NEUROPATHIC PAIN: A RETROSPECTIVE CHART REVIEW

Emily Tam, MD; Andrea Furlan, MD PhD, Toronto Rehabilitation Institute, Toronto, Ontario

AIM: To evaluate the effectiveness and tolerability of a transdermal preparation of Lidocaine and Ketamine for the management of neuropathic pain.

METHODS: A retrospective chart review was performed to identify people with neuropathic pain and given a prescription of a transdermal cream containing Lidocaine and Ketamine between May 30, 2007 and June 1, 2009 in an ambulatory setting at a university-affiliated rehabilitation centre. Descriptive and quantitative data analyses were performed. The effectiveness of the transdermal preparation was evaluated by the number of patients with improvement (n) divided by the total number of patients who received a prescription of the transdermal preparation (N).

RESULTS: A total of 854 patient charts were reviewed. Twenty-one patients with symptoms, signs, and/or a documented diagnosis of neuropathic pain and had been given a prescription of a transdermal preparation containing Lidocaine and Ketamine were identified. Four groups of patients were identified: those with a clearly stated diagnosis of neuropathic pain and prescribed a transdermal compound containing Lidocaine and Ketamine with follow-up (Group A) or without follow-up (Group B), and those with a suggested diagnosis of neuropathic pain with (Group C) or without follow-up (Group D). Effectiveness of the transdermal cream was seven out of eight (87%) for Group A and one out of three (33%) for Group C. In total, eight out of 11 patients (73%) benefited from a transdermal cream containing Lidocaine and Ketamine. Two patients experienced adverse skin reactions that led to discontinuation of the transdermal cream.

CONCLUSIONS: Transdermal cream containing Ketamine and Lidocaine was effective in 73% of patients with acute neuropathic pain and may be a good alternative to oral medications.

21B

AN AUDIT OF PAIN MANAGEMENT FOLLOWING PEDIATRIC DAY SURGERY AT BRITISH COLUMBIA CHILDREN'S HOSPITAL (BCCH)

Serena Shum, BHK; Joanne Lim, MASc, Pediatric Anesthesia Research Team; Mark Ansermino, MBBCh, MMed, MSc, FRCPC, Department of Pediatric Anesthesia; Trish Page, RN, Surgical Day Care Unit; Elizabeth Lamb, RGN, RSCN, BMedSci, Post Anesthetic Care Unit; Gillian Lauder, MBBCh, FRCA, FRCPC, Department of Pediatric Anesthesia, British Columbia Children's Hospital, Vancouver, British Columbia

AIM: Pediatric day surgery offers benefits to child, family, and society over in-patient surgery. (1-2) However, day surgery imparts the responsibility of post-operative pain management to parents. Recent research demonstrated that parents administer insufficient doses of analgesia after day surgery even when significant pain is recognized. (3) Good post-operative pain control improves functional recovery (4) and long-term functional outcomes. (4) Poor pain control increases post-operative morbidity. (5) In a recent study conducted at British Columbia Children's Hospital (BCCH), 7% of patients spontaneously reported inadequate analgesia. (6) The aim of this audit was to determine the current status of pain management following day surgery at BCCH.

METHODS: This was a prospective study involving 225 parents/guardians of children aged 3 months to 17 years who had undergone elective day surgery at BCCH. After Research Ethics Board approval and obtaining parental informed consent, in-hospital data (demographics, procedure type, peri-operative administration of analgesia; local anesthetic technique received, pain ratings from nurses) was collected from patient charts. Families were contacted by telephone 48 hours post-discharge and administered a 15-variable partially-validated (8) questionnaire. The questionnaire solicited parental perceptions on the adequacy of discharge instructions received and pain levels experienced by the child during the first 48 hours of recovery. Parents were asked to report the types of analgesia administered at home, frequency of use, and their level of satisfaction and confidence with post-discharge pain management.

RESULTS: Figures 1 and 2 shows incidence of significant pain by surgery. Otolaryngologic and orthopedic patients were more likely to experience significant pain at 24- and 48-hours post-discharge (p=0.05). Urologic patients were more likely to experience significant pain at 24-hours post-discharge (p=0.05). A median of 3 doses (range 0-10) of analgesia was administered within the first 24 hours. Acetaminophen was the sole analgesic for 49.7% of patients. 20.2% received ibuprofen. 17.0% of parents received written instructions. The need for written instructions was a recurrent theme from open-ended comments by parents. Parents were very satisfied and confident with pain management at home.

Figure 1. Pain levels at 24-hours post-discharge, by surgery.

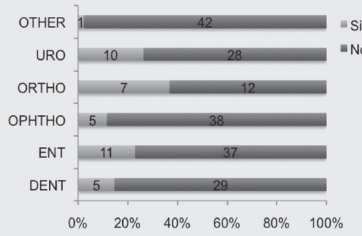
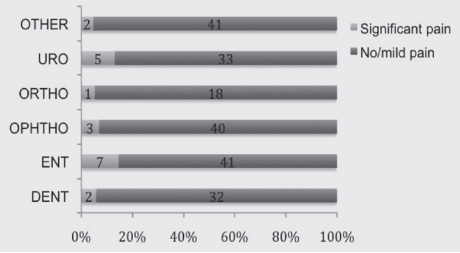


Figure 2. Pain levels at 48-hours post-discharge, by surgery.



DISCUSSION: Despite lack of written instruction, parents felt confident with pain management at home. In addition, parents in our sample administered more doses of analgesics than previously reported. Based on our results, pain management at home can be improved by exploiting the popularity of acetaminophen by increasing institutional dosing guidelines. Home use of ibuprofen should be increased where appropriate. Procedures resulting in higher incidence of significant pain should be targeted for re-audit at a larger sample size and consideration of standardized analgesia guidelines. Study limitations include a small, non-consecutive sample, possibility of practice and sampling biases, and pain ratings obtained from parents and not the children.

CONCLUSIONS: For the majority of patients, good post-operative pain control is achieved. However, improvements can be made through the development of standardized written instructions, review of analgesia guidelines for certain procedures, and increased dosing of acetaminophen and more frequent use of ibuprofen.

FOOTNOTES/REFERENCES:

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2. Ann R Coll Surg Engl 1992; 74: 130-3.
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SESSION 301 – 10:30 AM

22
FROM BRAIN TO SPINE AND BEYOND: TRACKING THE SOURCE OF LOW BACK PAIN FROM THE NERVOUS SYSTEM TO PERIPHERAL TISSUES

Chair: Laura S Stone, PhD, Assistant Professor, Alan Edwards Centre for Research on Pain, Faculty of Dentistry, McGill University, Montreal, Quebec

Speakers: Laura S Stone, PhD, Assistant Professor, Alan Edwards Centre for Research on Pain, Faculty of Dentistry, McGill University, Montreal, Quebec; Helene M Langevin, MD, Research Associate Professor, Departments of Neurology, Orthopaedics and Rehabilitation; Director, Program in Integrative Health, University of Vermont College of Medicine, Burlington, Vermont; David A Seminowicz, PhD, Assistant Professor, Department of Neural & Pain Sciences, University of Maryland Dental School, Baltimore, Maryland, USA

OBJECTIVE: Back pain affects 15% of the adult population and is the leading cause of disability in individuals age 45 and under. Current diagnostic and therapeutic approaches to chronic back pain are limited by our narrow understanding of the underlying biological mechanisms.

Learning Objectives:

Examine the question:

1. Is low back pain a neurological disorder? Recent work exploring anatomical and functional changes in the brain associated with low back pain and the ability of effective treatment to reverse these pathologies will be discussed.

2. Is low back pain a spinal disorder? A new animal model of low back pain due to degeneration of the intervertebral discs will be presented along with new insights into the relationship between low back pain, radicular pain and disc degeneration.

3. Is low back pain a connective tissue disorder? New data linking abnormal connective tissue structure in the lumbar region to chronic low back pain will be presented.

22A
DISC DEGENERATION-INDUCED LOW BACK PAIN

Laura S Stone, PhD

Assistant Professor, Alan Edwards Centre for Research on Pain, Faculty of Dentistry, McGill University, Montreal, Quebec

This presentation will focus on low back pain that results from degeneration of the intervertebral discs of the spine, a condition called Degenerative Disc Disease (DDD). While disc degeneration has been linked to chronic LBP in humans, the relationship between disc pathology and the behavioural signs of LBP remains unclear. For example, it is estimated that between 30-50% of individuals without LBP have asymptomatic disc degeneration. An animal model of progressive, age-dependent DDD-induced low back pain has been developed to address these questions. The relationship between the development of DDD and the emergence of behavioral signs of low back and radicular pain will be discussed.

22B
ALTERED LUMBAR CONNECTIVE TISSUE STRUCTURE IN CHRONIC LOW BACK PAIN

Helene M Langevin, MD

Research Associate Professor, Departments of Neurology, Orthopaedics and Rehabilitation; Director, Program in Integrative Health, University of Vermont College of Medicine, Burlington, Vermont, USA

Although the connective tissues forming the fascial planes of the back have been hypothesized to play a role in the pathogenesis of chronic low back pain (LBP), there have been few studies quantitatively evaluating connective tissue structure in this condition. Recent findings of abnormal connective tissue structure in the lumbar region in a group of human subjects with chronic or recurrent LBP will be presented along with ex vivo and in vivo animal models and the implications will be discussed.

22C
EFFECTIVE TREATMENT OF CHRONIC LOW BACK PAIN REVERSES ABNORMAL BRAIN ANATOMY AND FUNCTION

David A Seminowicz, PhD

Assistant Professor, Department of Neural & Pain Sciences, University of Maryland Dental School, Baltimore, Maryland, USA

This presentation will first review previous data indicating that chronic low back pain is associated with abnormal performance on cognitive and emotional tasks, decreased brain grey matter density/cortical thickness, and abnormal brain activity in various experiments. Recent data demonstrating the reversal of chronic pain-induced changes in cortical thickness and function after treatment will then be described. Specifically, recent evidence will be presented that these changes can be reversed relatively soon after treatment, and that the more effective the treatment, the greater the potential for recovery of cortical function.

SESSION 302 – 10:30 AM

23
PAIN PARADIGMS: IMPACTS ON TREATMENT OUTCOMES AND PATIENT CARE

Chair: Neil Pearson

Speakers: Neil Pearson, MSc, BScPT, BA-BPHE; Owen Williamson, FRACS, FAOrthA, FFPMANZCA; Lous Heshusius, PhD

Neil Pearson, MSc, BScPT, BA-BPHE, University of British Columbia, Vancouver, British Columbia; Owen Williamson, FRACS, FAOrthA, FFPMANZCA, Monash University, Melbourne, Australia; Lous Heshusius, PhD, York University, Toronto, Ontario

OBJECTIVE: To propose that the treatment and care of people with chronic pain can be enhanced by in-depth exploration of the theoretical models of pain on which we base our research and patient interactions.

Learning Objectives:

1. Open a discussion in which to question the theoretical models by which we practice.

2. Contrast the advantages and the limitations of current theoretical models of pain and people in pain.

3. Explain how the models influence patient experience, clinical practice and research.

23A
CONTEMPORARY MODELS OF PAIN

Neil Pearson, MSc, BScPT, BA-BPHE

University of British Columbia, Vancouver, British Columbia

Clinical decisions are shaped by the clinician's theoretical understanding of pain [Smart and Doody (2007)]. Over the last 50 years, the gate control theory [Melzack and Wall (1964)], the biopsychosocial model [Engel (1980)] and the pain neuromatrix model [Melzack (1999)] have expanded our understanding of pain and deepened our understanding of the person in pain. Considering the importance of these models to clinical practice and patient outcomes, it is critical that we question the models, and our individual understanding of the models. The authors' original description of the model and current practice based on the model may have disconnected. Clinical practice may be unchanged by the existence of the model. Patient outcomes may not have improved as we anticipated. This session will review key information about the biopsychosocial and pain neuromatrix models, the advantages the models provide to patient care, and potential misunderstandings of the models. The effects of clinician views on patient education and on non-pharmacological/surgical interventions will be discussed.

23B
SOCIAL AUTHENTICATION OF THE PERSON IN PAIN

Owen Williamson, FRACS, FAOrthA, FFPMANZCA

Monash University, Melbourne, Australia

People in pain report that family, friends, employers and health professionals often do not believe they are in pain thereby attesting to the difficulty society has in authenticating their claims. The German sociologist and philosopher, Jürgen Habermas developed a theory of communicative action

in order to explain social action (ie. action based on social cooperation) and described how claims might be evaluated in the subjective, objective and intersubjective domains. The application of this theory enhances the bio-psychosocial approach to the person in pain by offering further insights into differentiating pain from other unpleasant emotions, "abnormal" illness behaviour and the effects of litigation and compensation systems.

23C
THE NEED FOR A SOCIETAL MODEL OF CHRONIC PAIN

Lous Heshusius, PhD
York University, Toronto, Ontario

Models, by definition, are bounded by their own parameters, a theoretical fact that constitutes both their strengths and their weaknesses. This third session will look at the models discussed so far, asking (1) what is their focus, and (2) to whom do they assign responsibility for pain relief? The answers will be compared to the complexity and societal nature of the actual lived experience of chronic pain. Furthering the work, for instance, by Dubin (2010) and Nielsen (2010), this comparison, which shows areas of disconnect, points to the need to explore a societal and dynamic model of chronic pain that contains disease factors in the form of societal forces and institutions that directly impact pain or stand in the way of obtaining pain relief. While one could argue that aspects of society always play a role in every major disease, the case will be made that chronic pain, a disease made directly worse by stress given the essential involvement of the central nervous system, is particularly in need of a societal set of parameters within which to understand chronic pain and improve pain care. Existing models do not lose their power within such a model but can increase their strengths by tuning into it.

SESSION 303 – 10:30 AM

24
WHILE TREATING MIND AND BODY, DON'T NEGLECT THE SOUL: INCORPORATING SPIRITUALITY INTO THE ASSESSMENT AND TREATMENT OF CHRONIC PAIN

Chair: Arden McGregor
Speakers: Arden McGregor, MA, CPsychAssoc, CBIST; Hristos (Chris) Papastamos, BRE, MA

Arden McGregor, MA, CPsychAssoc, CBIST; Hristos (Chris) Papastamos, BRE, MA, Brainworks, London, Ontario

OBJECTIVE: This workshop will critically analyze the literature which posits that the multidisciplinary treatment of the whole person with chronic pain goes beyond simply the mind and the body. Clinically useful models of spirituality, along with spiritual exercises and strategies will be presented, so that practitioners from various disciplines can enhance the assessment and treatment of persons with chronic pain. Resources will be provided, along with practical examples and suggestions regarding using the material in various contexts.

Learning Objectives:

1. To raise awareness regarding "why" to include spirituality in chronic pain treatment.

2. To learn specific ways "how" to include spirituality in both the assessment and treatment of chronic pain.

3. To understand the practicalities of using a combined spiritual/health care approach (e.g. gaining funding approval for treatment, avoiding adherence to particular religions, selection of elements of different faiths, overcoming barriers presented by working cross faiths).

24A
SPIRITUAL PRACTICES AND COPING: THE RATIONALE FOR AND EFFICACY OF USING SPIRITUAL PRACTICES IN ORDER TO REDUCE THE PAIN EXPERIENCE FOR PERSONS WITH CHRONIC PAIN

Arden McGregor, MA, CPsychAssoc, CBIST
Brainworks, London, Ontario

To date, multidisciplinary chronic pain treatment has been an exemplar in the rehabilitation field, demonstrating the necessity of incorporating the expertise of practitioners who specialize in physical, behavioural, cognitive and emotional health, to maximize each person's rehabilitation. Spirituality also has an important role to play within the assessment and treatment of chronic pain thus further enhancing the multidisciplinary approach. Spirituality and spiritual practice have the potential for either adaptive or maladaptive outcomes with persons with chronic pain (Pargament, 1997; Bush et al, 1999). The case for "why" to offer this treatment component will be examined, along with caveats for implementation, in order to avoid undesired outcomes. The key elements of spiritual practice that must be present in order for there to be a positive impact in the coping process and, ultimately, on one's pain experience will be identified (Wachholtz, Pearce, & Koenig, 2007). We will explore the role that spirituality can play within a person's pain experience, and present the ways that spiritual practices/exercises can have a positive impact on persons with chronic pain. The workshop will present case examples to show the effectiveness of the combined approach.

24B
INTEGRATION AND PRACTICE: THE IMPLEMENTATION OF A SPIRITUAL COMPONENT OF TREATMENT, WITHIN A MULTIDISCIPLINARY CONTEXT

Hristos (Chris) Papastamos, BRE, MA
Brainworks, London, Ontario

This seminar will delve into how spirituality can be and is used by clients as a natural means of coping, and how practitioners can encourage and enhance the use of these coping strategies. Persons with chronic pain who utilize spirituality as a method of coping might prefer to address these issues with a spiritual leader (e.g. their priest or a chaplain) as an alternative to or in conjunction with their health care practitioner (Bussing et al, 2009). However, the integration of spirituality within multidisciplinary chronic pain management programs has presented challenges to date. There is a dearth of literature to empirically support the optimal methods by which to include spirituality in health care assessment and treatment programs. The workshop will offer ways to incorporate a spiritual component along with traditional pain treatment approaches and, for practitioners without a spiritual background, to address the issue of comfort with this approach. The workshop will refer to practices drawn from major religions and provide tools and strategies for future reference. Case examples will be presented to show the implementation of the combined approach in a multidisciplinary environment and deal with the practicalities of implementing this approach.

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SESSION 304 – 2:00 PM

25
THE TRANSITION FROM ACUTE TO CHRONIC POST-SURGICAL PAIN: FROM RISK FACTORS TO CLINICAL MANAGEMENT

Chair: Fiona Campbell
Speakers: Joel Katz, PhD; Lisa Isaac, MD; Gabrielle Pagé, MA

Joel Katz, PhD, Department of Psychology, York University; Lisa Isaac, MD, Department of Anesthesia and Pain Medicine, The Hospital for Sick Children; Gabrielle Pagé, MA, Department of Psychology, York University, Toronto, Ontario

OBJECTIVE: The aim of this workshop is to review the incidence of chronic post-surgical pain (CPSP), identify biopsychosocial risk factors associated with the transition from acute to CPSP in both adults and

children, and review clinical practices that can help reduce the risk of developing CPSP. Exact prevalence of CPSP is not known, but recent estimates indicate that it can be as high as 50% in both adults and children. A fact that is rarely appreciated by pain clinicians and researchers is that every chronic postsurgical pain was once acute; the development of CPSP involves a transitional process. Uncovering the processes that underlie the transition to chronicity can help us identify individuals at higher risk of developing CPSP. This workshop will provide an overview of recent theoretical and empirical developments in the transition from acute to CPSP in both adults and children. In addition to discussing biological, psychological, and social risk factors associated with the transition to CPSP, this workshop will also review clinical guidelines and current practices in acute postoperative pain management as well as prevention of CPSP in children.

Learning Objectives:
1. To examine the risk factors associated with the transition from acute to chronic postoperative pain in adults.
2. To provide an overview of psychological influences in the development of acute and chronic pediatric postoperative pain.
3. To review current practices in acute postoperative pain management and prevention of chronic postoperative pain in children.

25A
FACTORS INVOLVED IN THE TRANSITION FROM ACUTE TO CHRONIC PAIN AFTER SURGERY

Joel Katz, PhD
Department of Psychology, York University, Toronto, Ontario

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. In this presentation, Dr Katz will review the epidemiology of CPSP including the incidence/prevalence of CPSP pain in several high risk surgical populations; identify the risk factors and protective factors for the development of CPSP, and identify the rationale for and approaches to preventive analgesia. Research points to the severity of perioperative pain as a risk factor for the development of CPSP. What must be determined is the aspect(s) of pain that is predictive and whether it is a causal risk factor. 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.

Learning Objectives:
After attending the workshop participants will be able to:
1. Specify the incidence of CPSP in several high risk surgical populations;
2. Distinguish between a causal risk factor, a correlate and a fixed marker;
3. List the main risk factors and protective factors for the development of chronic post-surgical pain;
4. Identify the rationale for and approaches to preventive analgesia.

25B
CURRENT PRACTICES IN PERIOPERATIVE PAIN MANAGEMENT FOR THE PREVENTION OF CHRONIC POSTOPERATIVE PAIN IN CHILDREN

Lisa Isaac, MD
Department of Anesthesia and Pain Medicine, The Hospital for Sick Children, Toronto, Ontario

It has become "common knowledge" among anesthesiologists that treating perioperative pain is good practice. It is not only humane, but it also serves the purpose of assisting in the prevention of perioperative complications, such as pneumonia, deep vein thromboses, bowel function and deconditioning. This holds for the pediatric anesthesiologist as well, but the pendulum has not yet swung as far to the side of pain relief, due to concerns about side effects of opioids and of regional anesthesia.
More recently, evidence related to perioperative pain control and the prevention of chronic postsurgical pain has come to light. In order to promote good perioperative pain control, it is important to establish methods of monitoring and treating postoperative pain, including the establishment of an Acute Pain Service, and to be able to manage the early presentation of chronic postsurgical pain promptly. Increasing evidence, primarily in adults, points to the importance of good intraoperative as well as postoperative pain control to help to prevent chronic postsurgical pain. This can be achieved in a variety of ways, and Dr. Isaac will review the evidence for the treatment of perioperative pain for the prevention of chronic postsurgical pain in children.

Learning Objectives:
After attending the workshop participants will be able to:
1. Apply evidence based practices in acute perioperative pain management in children as it relates to the prevention of CPSP.
2. Distinguish between acute postoperative pain and early presentation of CPSP.
3. Identify the differences between preventive analgesia in adults and children.

25C
BIOPSYCHOSOCIAL FACTORS ASSOCIATED WITH ACUTE AND CHRONIC PEDIATRIC POSTSURGICAL PAIN

Gabrielle Pagé, MA
Department of Psychology, York University, Toronto, Ontario

Recent estimates suggest that up to 50% of children experience CPSP six months after common surgical procedures. Such prolonged pain impairs quality of life, demands constant attention, and in children, interferes with psychosocial functioning and school attendance. Unrelieved pain has been associated with more complications, longer recovery, higher risk of infection, longer hospitalization, and increased health care costs. Although much about pediatric CPSP pain remains unknown, empirical data suggest that psychosocial factors play an important role in the experience of acute and CPSP. Various psychological factors, such as pain catastrophizing, anxiety sensitivity, self-efficacy, and pain anxiety have been associated with pain experiences including pain severity and pain-related disability. The aims of this presentation are to provide an overview of the incidence of CPSP in children as well as to review biopsychosocial risk factors associated with acute postsurgical pain and the development of pediatric CPSP. Research suggests that in addition to individual differences in biological and psychological vulnerability to pain, environmental factors (e.g., socialization, parental influence) also play a role in the pain experience of children. This presentation will provide an integrative overview of the various biopsychosocial factors that influence the experience of acute and chronic pediatric postsurgical pain.

Learning Objectives:
After attending the workshop participants will be able to:
1. Identify the incidence of severe acute postsurgical pain and CPSP children;
2. Identify biopsychosocial risk factors for pediatric CPSP;
3. Specify the impact of pediatric CPSP on quality of life well-being.

SESSION 305 – 2:00 PM

26
DIABETIC NEUROPATHIC PAIN: FROM BENCH TO BEDSIDE OR BEDSIDE TO BENCH?

Chair: Cory Toth, MD, The Hotchkiss Brain Institute and the Department of Clinical Neurosciences, University of Calgary, Calgary, Alberta
Speakers: Tuan Trang, PhD, The Hospital for Sick Kids, University of Toronto, Toronto, Ontario; Cory Toth, MD, The Hotchkiss Brain Institute and the Department of Clinical Neurosciences, University of Calgary, Calgary, Alberta; Dwight Moulin, MD, London Health Science Centre, University of Western Ontario, London, Ontario
OBJECTIVE: To provide learning of diabetic peripheral neuropathy pain models, assessment techniques, and clinical trials. As an epidemic of diabetes mellitus (DM) continues to grow, the prevalence of diabetic peripheral neuropathy (DPN) has swelled. One of the main symptomatic features of DPN is the presence of neuropathic pain (NeP). Present in about 50% of patients with DPN, NeP is a source of immobility, insomnia, and impaired quality of life. Frequently, animal models of DPN are used to provide a platform for therapeutic initiatives. Models of DPN are usually rodent models with genetic or induced forms of diabetes. Assessment of these

models raises new challenges in interpretation of findings and in the translation of animal findings to human clinical trials. Determination of NeP behaviors and the procedures used to define the presence of pain are often not analogous to behaviors that human patients with DPN and NeP may exhibit. Animal models of diabetes also possess important differences from their human counterparts with diabetes. Hurdles such as these may have contributed to the dearth of positive randomized controlled clinical trials showing great efficacy in NeP relief. This seminar will review the animal models and experimental procedures used, the problems with translation of these findings to human clinical studies, and review the most updated results of human clinical trials in NeP due to DPN.

Learning Objectives:
1. To describe the most common models of diabetic peripheral neuropathy and their assessment.
2. To illustrate the hurdles in translation from the laboratory to the clinic, and vice versa.
3. To interpret the results of clinical trials in humans with diabetic peripheral neuropathy.

SESSION 306 – 2:00 PM

27
EMERGING ROLE FOR NERVE GROWTH FACTOR IN THE DEVELOPMENT AND MAINTENANCE OF MUSCULOSKELETAL PAIN

Chair: Brian Cairns
Speakers: Brian Cairns, PhD; Andre Dray, PhD
Brian Cairns, PhD, University of British Columbia, Vancouver, British Columbia; Andre Dray, PhD, AstraZeneca, Montreal, Quebec

OBJECTIVE: NGF is a neurotrophic protein that exerts its biological effects by acting on two different receptors: tyrosine kinase receptor A (TrkA) and p75 receptor. It is thought that in the periphery NGF is responsible for maintaining the sensitivity of primary afferent fibers and that up regulation of NGF can result in alterations in pain related behavior. Preclinical research will be overviewed that indicates that exogenous NGF administration can lead to the development of long-lasting thermal and mechanical sensitivity. The results of human studies that have reported long-lasting muscle sensitivity can also develop with either systemic or local administration of NGF will be discussed. The emerging challenges of using anti-NGF therapies to treat pain in several difficult to treat chronic pain conditions will be presented.

Learning Objectives:
1. Attendees will learn about the effects of elevated NGF tissue levels on nociceptive processing in animal models.
2. Attendees will learn about translation of animal models to human experimental models of pain.
3. Attendees will learn about the therapeutic potential of new treatments that are aimed at inhibiting the effects of elevated NGF levels in chronic pain conditions.

27A
NGF AND MUSCLE PAIN SENSITIVITY

Brian Cairns, PhD
University of British Columbia, Vancouver, British Columbia

NGF is a neurotrophic protein with a pivotal role in development and maintenance of the nervous system on one side and inflammatory and neuropathic pain states on the other. NGF is able to rapidly induce long lasting afferent mechanical sensitization of masseter afferent fibers upon injection into rat masseter muscle. Emphasis will placed on the discussion of potential mechanisms that may contribute to NGF-induced mechanical sensitization and their relevance to the effect of NGF on animal models and human subjects. Intramuscular injection of human NGF has been reported to cause a prolonged period of localized mechanical sensitization in human subjects reminiscent of temporomandibular disorders pain. Discussion will be focused on the potential of intramuscular NGF injections to serve as a new human pain model to examine the neurobiology of muscle pain disorders.

27B
INHIBITION OF NGF ACTION AS A TREATMENT OF CHRONIC PAIN CONDITIONS

Andre Dray, PhD
AstraZeneca, Montreal, Quebec

Increased expression and release of NGF have been demonstrated, for example, in ultraviolet and surgical injury, as well as in diseases including arthritis, cystitis, prostatitis, and headache. Few NGF antagonists have been reported, but ALE0540 and PD90780 which inhibit NGF binding to trkA and p75, respectively, have shown efficacy in chronic pain models. In addition, the therapeutic utility of targeting NGF has also received clinical confirmation since humanized anti-NGF monoclonal antibodies (mAb) RN624 (Pfizer/Rinat) and AMG403 (Amgen) have been reported to be efficacious in reducing pain and improved mobility in osteoarthritis. Anti-NGF mAb therapy thus appears as an attractive therapeutic approach with further validation being pursued in other indications including post-herpetic neuralgia, osteoarthritis and low back pain.

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CANADIAN PAIN SOCIETY POSTERS, FRIDAY APRIL 15 TO SATURDAY APRIL 16, 2011

P1
PRESENCE AND SEVERITY OF PAIN IN PATIENTS WITH DEMYELINATING ULNAR NERVE INJURY

Matti Allen, MSc, BSc, School of Kinesiology, University of Western Ontario, London, Ontario

AIM: The objectives of this study were to: (1) assess the degree of pain experienced by patients affected by focal ulnar neuropathy at the elbow (UNE); (2) assess the severity of sensory/motor symptoms in patients with UNE; (3) compare self-assessed pain and sensory/motor symptoms in these patients with their extent of nerve damage, as quantified through conduction block (CB), an electrophysiological parameter.
METHODS: Nine patients (53 ± 3 yrs) with clinical and electrophysiological features of UNE with CB were studied. All underwent bilateral, ulnar motor nerve conduction studies recorded from the first dorsal interosseous (FDI) muscle as well as completion of the Patient Rated Ulnar Nerve Evaluation (PRUNE) questionnaire, which provides self-assessed ratings of pain and sensory/motor symptoms. Patients' bilateral FDI strength was also measured using a custom-built hand dynamometer.
RESULTS: Patients presented with a mean CB% of 42 ± 17%. 88% of patients experienced arm pain associated with their neuropathy. All patients reported numbness and paraesthesia in their UNE affected hand. Patients rated numbness and paraesthesia as significantly more severe than their levels of pain. The extent of nerve damage (CB%) correlated moderately strongly with strength decrement (r = 0.74), however no relationship

was found between CB% and pain (r = 0.07) or sensory/motor symptom severity (r = 0.09).
CONCLUSIONS: Pain is a common symptom associated with UNE, although it is less severe than sensory/motor symptoms as rated by the PRUNE questionnaire. The presence or severity of pain is not a good indicator of the extent of nerve damage in patients with UNE.

P2
CAN YOU TRUST AN IV DRUG ABUSER?

Karen Antoni, RN(EC), MHSc, ACNP, Hamilton Health Sciences and McMaster University, Hamilton, Ontario

AIM: This presentation will address the challenges of acute pain management for a post-op hospitalized patient with a history of IV drug abuse. Strategies designed to enhance patient safety while caring for patients with a history of addiction will be presented.
METHODS: A case presentation involving a fatal sentinel event in a hospitalized patient provided a background for the development of strategies to aimed at reducing the risk of in-hosptial drug abuse for patients with a history of addiction who require the administration of opioids for acute pain management. A collaborative, interprofessional process was instrumental in this work to ensure a comprehensive approach.
RESULTS: Based on the findings of a root cause analysis after the fatal event, strategies were developed to minimize the risk of opioid abuse by in-patients with a history of substance abuse. Subsequent recommendations will be reported.
CONCLUSIONS: As health care professionals, it is our ethical responsibility to provide effective pain relief for all patients. It is incumbent on each of us to identify patients at risk for opioid abuse and to ensure treatment is provided in a manner that minimizes the risk for an adverse event.

P3
MANAGEMENT OF ACUTE PAIN FOR THE PATIENT WITH OPIOID TOLERANCE – A CASE FOR PARTNERSHIP

Karen Antoni, RN(EC), MHSc, ACNP, Hamilton Health Sciences, McMaster University; Maria Calvo, MD, Department of Anaesthesia, McMaster University, Hamilton, Ontario

AIM: To recognize that the unique contributions of nursing and medicine in addition to the specialized knowledge and skills related to acute pain and chronic pain management can result in a synergistic approach to care when combined.
METHODS: A case review is used to illustrate the benefits of a collaborative approach to acute pain management involving both the acute pain service nurse practitioner and a chronic pain physician specialist for a patient with significant opioid tolerance.
RESULTS: Patient-centred, safe and effective analgesia was provided by combining the opioid equianalgesic dose calculation expertise of the chronic pain physician specialist in partnership with the acute pain service nurse practitioner, who worked closely with other members of the health care team and provided daily evaluations of the patient's response to the treatment plan.
CONCLUSIONS: Combining the expertise of nursing and medicine in addition to the specialized knowledge and skills related to acute pain and chronic pain management created a synergy which resulted in better patient outcomes than either discipline or clinical specialty could have achieved independently. This partnership helped to balance a patient's right to pain relief after trauma with patient safety issues and the provider's responsibility to do no harm.

P4
WITHDRAWN

P5
PROGRAMME ACCORD – RÉSULTATS D'UN ESSAI RANDOMISÉ CONTRÔLÉ MULTICENTRIQUE SUR L'IMPACT DE L'ÉCOLE INTERACTIONNELLE DE FIBROMYALGIE (ÉIF)

Patricia Bourgault, inf PhD, École des sciences infirmières, Faculté de médecine et des sciences de la santé, Université de Sherbrooke, Sherbrooke; Anaïs Lacasse, PhD; Jacques Charest, PhD, Université du Québec en Abitibi-Témiscamingue, Rouyn-Noranda; Isabelle Gaumond, PhD, Centre de recherche clinique Étienne-LeBel, Université de Sherbrooke, Sherbrooke; Dominique Dion, MD, MSc, Centre hospitalier universitaire de Montréal, Université de Montréal, Montréal; Serge Marchand, PhD, Centre de recherche clinique Étienne-LeBel, Université de Sherbrooke, Sherbrooke; Manon Choinière, PhD, Centre hospitalier universitaire de Montréal, Université de Montréal, Montréal, Québec

AIM: Plusieurs études ont démontré que des programmes d'intervention visant à rendre les personnes plus impliquées et autonomes dans la gestion de leur maladie chronique peuvent avoir des impacts positifs sur leur qualité de vie et sur divers indicateurs de santé. Notre groupe, composé de cliniciens et de chercheurs de l'Université de Sherbrooke et de l'Université du Québec en Abitibi-Témiscamingue, a développé une intervention faisant appel à l'empowerment dans la gestion de la douleur chronique, appelée École Interactionnelle de Fibromyalgie (ÉIF). Les résultats préliminaires sont forts prometteurs et nous ont amené à en poursuivre l'étude.
METHODS: Dans le cadre du Programme ACCORD: Application Concertée des COnnaissances et Ressources en Douleur, nous avons mené un essai randomisé contrôlé multicentrique simultanément à Sherbrooke et Rouyn-Noranda. Cinquante-sept personnes fibromyalgiques (29E;28C) y ont participé. La randomisation a permis d'obtenir deux groupes comparables. Des mesures ont été prises avant l'ÉIF (T0), à la fin (T1) et à 3 mois post-intervention (T2). Les principales mesures ont porté sur l'impression globale de changement (IGC), la perception de la douleur, le fonctionnement psychologique et physique et la qualité de vie.
RESULTS: Pour toutes les mesures d'IGC réalisées au T1 et au T2, les participants des ÉIF présentaient une proportion significativement plus élevée d'amélioration (intensité de la douleur p=0,0002, p=0,0039; fonctionnalité p=0,0041, p=0,0237; qualité de vie p=0,0006, p=0,0147).
CONCLUSIONS: Puisque l'IGC est reconnu comme une « mesure étalon » de l'efficacité d'une intervention en douleur, ces résultats sont suffisamment positifs pour débuter l'implantation de l'ÉIF. Les deux prochaines années y seront consacrées.

P6
EMOTIONAL AVAILABILITY AND INFANT PAIN RESPONSES: THE ROLE OF DIFFERENT PARENTING SCENARIOS IN THE IMMUNIZATION CONTEXT

Lauren Campbell, BSc; Nicole Racine, BSc, York University; Rebecca Pillai Riddell, PhD, York University, The Hospital for Sick Children; Saul Greenberg, MD; Hartley Garfield, MD, The Hospital for Sick Children, University of Toronto, Toronto, Ontario

AIM: The objectives of the study were to examine at 2 months of age: 1) Whether a relationship exists between emotional availability during the immunization appointment and infant pain reactivity post-needle and 2) Whether either of these variables are impacted by the parenting scenario in the immunization appointment (i.e. mother only versus both parents present).
METHODS: A group of 102 caregiver-infant dyads were videotaped during a routine immunization at 2-months of age. Videotapes were coded for caregiver emotional availability (Emotional Availability Scales, Biringen 2008) and immediate post-needle infant pain reactivity (Neonatal Facial Coding Scale, Grunau & Craig, 1986).
RESULTS: Exploratory correlations revealed a significant negative relationship between the structuring subscale of emotional availability and infant pain reactivity ($r = -0.236$, $p < 0.05$). A marginally significant negative correlation was found between the non-hostility subscale of emotional availability and infant pain reactivity ($r = -0.178$, $p < 0.1$). A subsequent MANOVA was run with the significant variables from the correlational analysis

(parenting scenario was the grouping variable). No significant effects were found for structuring, hostility and infant pain reactivity (p=0.637).
CONCLUSIONS: Parents who were higher on structuring and nonhostility had infants with significantly lower immediate pain responses. However, whether the mother was with the infant alone in the immunization appointment or with the father, did not impact these variables. These results suggest that while emotional availability is related to infant pain reactivity, this relationship does not vary by different parenting scenarios.

P7

DEFINING ADVERSE EVENTS IN ORTHOPAEDIC MANUAL THERAPY: THE PATIENT PERSPECTIVE

Lisa C Carlesso BSc PT, MSc, PhD(c), Department of Clinical Epidemiology and Biostatistics; John Cairney PhD, Associate Professor, Departments of Family Medicine and Psychiatry and Behavioural Neurosciences; Lisa Dolovich BScPhm, PharmD, MSc; Associate Professor, Department of Family Medicine; Jennifer Hoogenes, BS, MS, Departments of Clinical Epidemiology and Biostatistics and Surgery, McMaster University, Hamilton, Ontario

AIM: No standard definition currently exists for adverse events (AE) in orthopaedic manual therapy (OMT) practice. However, rare, serious, and common, benign, AE are associated with the intervention. A systematic review has indicated a lack of standard definitions in studies collecting AE data. Research comparing clinician reporting of AE to that of patients demonstrates that differences exist. The purpose was to describe how patients define AE associated with OMT techniques.
METHODS: A descriptive qualitative design was employed. Semi-structured interviews were used with a purposive sample of patients (n=12) receiving OMT, from physiotherapy, chiropractic and osteopathic practices in Ontario, Canada. The interview guide was informed by existing evidence and consultation with content and methodological experts. Interviews were audiotaped and transcribed verbatim. Data were analysed by two independent team members using thematic content analysis. Data was coded into an operational codebook. Rigour was maintained by member checking of verbatim transcripts, referential adequacy, verification and an audit trail.
RESULTS: A key finding was that patients defined mild, moderate and major AE by pain/symptom severity, duration, functional impact, and ruling out of alternative causes. An overarching theme identified multiple factors that influence how the AE is perceived including patient expectations and experience, education about potential AE, trust, body awareness, acute versus chronic state and weighing of benefits and harms.
CONCLUSIONS: These results differ from a previously proposed framework for defining AE that did not include the patient perspective. Future processes to create standard definitions or measures should include the patient viewpoint to provide a broader, client-centered foundation.

P8

PREGABALIN ATTENUATES NOCICEPTIVE BEHAVIOUR INDUCED BY TRIGEMINAL NERVE INJURY IN RODENTS

Pavel S Cherkas, DMD, PhD; Vidya Varathan, BDS, PhD; Makiko Miyamoto, DDS, Faculty of Dentistry; Jonathan O Dostrovsky, PhD; Barry J Sessle, MDS, PhD, Faculty of Dentistry and Faculty of Medicine, University of Toronto, Toronto, Ontario

AIM: We have previously shown that acute and chronic pulp inflammation causes central sensitization in trigeminal nociceptive neurons in the rodent medullary dorsal horn (MDH). We have also demonstrated that pregabalin, a potent α2δ-calcium channel drug that is used for the management of especially neuropathic pain, attenuates the MDH central sensitization as well as nociceptive sensorimotor responses induced in this acute inflammatory pulpal pain model. The aim of this study was to test if pregabalin can also reduce nociceptive behaviour in a trigeminal nerve injury rodent model.
METHODS: Male adult mice were anaesthetized by isoflurane (2.0~2.5%). The left infraorbital nerve (ION) was transected, and awake mice were tested for escape responses to mechanical stimulation (von Frey filament) of the mandibular skin over a 2-week postoperative period. The effects on this behaviour of pregabalin (100 mg/kg i.p.) or vehicle (control) was tested at 7 days after the ION transection.
RESULTS: Compared to naive and sham control mice (n=6, each group), the mechanical threshold to ipsilateral skin stimulation in ION-transected mice was significantly (ANOVA, $p<0.05$) reduced, peaking at 7-10 days. Compared to vehicle treatment (n=6), administration of pregabalin (n=6) 7 days after ION transection significantly reduced the injury-induced nociceptive behaviour to baseline levels for 2 hours.
CONCLUSIONS: These results indicate that pregabalin may attenuate nociceptive behavioural responses associated with trigeminal nerve injury, and suggest that it may prove useful for the treatment of orofacial neuropathic pain states.
FOOTNOTES/REFERENCES: Supported by NIH (DE04786), CIHR (MOP-53246), and Pfizer (WS427406) grants.

P9

THE RELATIONSHIP BETWEEN THE BISPECTRAL INDEX AND EXPERIMENTAL PAIN IN ADULTS UNDERGOING GENERAL ANESTHESIA

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AIM: Pain assessment is a challenge for health care professionals, especially when patients are unable to communicate their pain. Neurophysiological measures such as bispectral (BIS) index, mainly used to assess sedation, could aleviate this, since it was recently demonstrated that nociceptive clinical procedures in ICU significantly increase bispectral index.
The aim of the study was to examine the relationship between the bispectral index and experimental pain in adults undergoing general anesthesia for an elective surgery.
METHODS: Thirty subjects received 2 experimental heat pain stimuli (PS) at temperatures producing pain intensity ratings of 4/10 and 7/10. The first PS occurred in OR, 7 minutes after the administration of fentanyl, while the second PS occurred after a steady state was obtained (BIS index 20-50) following induction of general anesthesia (propofol + rocuronium). We measured the BIS index before and during each stimulus. We analysed the difference in BIS index and EMG index.
RESULTS: We observed a statistically significant increase of the maximum BIS index values during the 4/10 PS (average increase of 2.996, p=0.003) and during the 7/10 PS (average increase of 2.520, p=0.012).
CONCLUSIONS: Although this increase was significant, the amplitude of this variation is probably too weak to be clinically useful in adjusting levels of analgesia. Furthermore, the BIS index was probably minimized by the use of rocuronium in 25 subjects, which blocks EMG activity; since BIS index is strongly influenced by EMG activity, this finding is not surprising.

P10

A NOVEL APPROACH TO PROVIDING INTERDISCIPLINARY POST-PROFESSIONAL EDUCATION IN PAIN MANAGEMENT

Judith Hunter, PhD; Shawn Drefs, BSc, MSc; David Magee, PhD, University of Alberta, Faculty of Rehabilitation Medicine

AIM: The aim of this program is to provide advanced education in collaborative pain management for health care professionals through provision of an online graduate level for credit Certificate in Pain Management. This program addresses the need for continued professional development of practicing clinicians in urban and rural settings across Canada.
METHODS: An interdisciplinary committee of pain management experts came together in order to develop program objectives and to define core curriculum elements. The course director further developed course content based on the strongest evidence based research. The first cohort entered the program in May 2010 and a second group of participants will begin the program in September 2010. Participant knowledge of pain management is assessed pre and post course and program.
RESULTS: Post course assessment, including quantitative and qualitative data collection, for the first cohort reveals high levels of satisfaction with the first course and increased knowledge in the treatment of pain conditions. Additionally, an online format has acted as a draw to students from various disciplines across Canada. Continued evaluation will occur after each course in the series and after completion of the certificate to inform future potential modifications to the program.
CONCLUSIONS: The Faculty of Rehabilitation Medicine at the University of Alberta is taking a novel approach to provide necessary post professional education in pain management. This online graduate credit

certificate program will increase the expertise and the number of health professionals who have the capacity to use an evidence-based approach to understand, assess, and treat pain conditions.

P11

HOW DOES THE AVERAGE FREQUENCY WITH WHICH CHILDREN AND ADOLESCENTS EXPERIENCE PAIN RELATE TO LEVELS OF ANXIETY SENSITIVITY (AS), PAIN ANXIETY (PA) AND PAIN CATASTROPHIZING (PC)?

Samantha Fuss, MA; Gabrielle Page, MA; Joel Katz, PhD, York University, Toronto, Ontario

AIM: Little is known about the relationship between how often pain is experienced on average and the expression of pain-related anxiety constructs like AS, PA and PC. Experiencing pain occasionally as opposed to frequently or never could help to promote resilience and effective coping strategies to deal with pain in the future but such a notion has never been tested empirically. The aim of this project is to explore how average pain frequency relates to levels of AS, PA, and PC in a cross-sectional Canadian community sample of youth aged 8-18 years.

METHODS: After REB approval and informed consent/assent were obtained participants (N = 1006, 54% female, M age = 11.6, SD = 2.7) who were recruited at the Ontario Science Centre (Toronto, ON) completed the Child Anxiety Sensitivity Index (CASI), and Children Pain Anxiety Symptoms Scale (CPASS) and Pain Catastrophizing Scale – Children (PCS-C) and were asked to estimate on average how often they experience pain.

RESULTS: Linear regression was used to test the hypothesis that pain frequency would predict levels of AS, PA and PC. The overall models proved significant for AS ($B = 1.1$, $SE_B = 0.17$, $\beta = .21$, $t = 6.7$, $p < .001$), PA ($B = 2.9$, $SE_B = 0.43$, $\beta = .2$, $t = 6.7$, $p < .001$), and PC ($B = 1.4$, $SE_B = 0.28$, $\beta = .15$, $t = 4.8$, $p < .001$) such that as pain frequency increased, so did levels of each construct.

CONCLUSIONS: We sought to understand the relationship between pain frequency and the expression of AS, PA and PC. It does not appear as though there is an optimal level of pain experiencing that is associated with attenuated levels of these variables.

P12

PSYCHOPHYSICAL MECHANISMS UNDERLYING COMORBID CHRONIC PAIN AND POST-TRAUMATIC STRESS DISORDER (PTSD) SYMPTOMS

Samantha Fuss, MA; Joel Katz, PhD, York University, Toronto, Ontario

AIM: Research has demonstrated considerable comorbidity between symptoms of PTSD and chronic pain; however, many questions remain unanswered with regard to the nature of this connection. A mutual maintenance model has been proposed, in which symptoms of PTSD may prolong or aggravate elements of chronic pain and vice versa (Asmundson, et. al., 2002). For instance, an episode of pain following trauma may serve as a reminder of the accident and trigger the re-experiencing phenomenon at the core of PTSD. Recent investigation into possible mediators of the PTSD and chronic pain relationship has focused on pain thresholds to determine whether trauma alters the perception of pain. Individuals with comorbid chronic pain and PTSD show significantly higher heat pain detection thresholds than do healthy control participants, but they report suprathreshold heat pain stimuli as much more intense than the controls (Defrin, et. al, 2008). This paradoxical finding is difficult to interpret since pain and PTSD were confounded and the study did not have a chronic pain only control group (Asmundson & Katz, 2008). The proposed clinical research project will examine differences in reported levels of pain, pain disability, and responses to heat pain stimulation in chronic pain patients with low vs high levels of PTSD symptomology. In addition, scales assessing elements of fear, catastrophizing and anxiety related to pain will be administered as these factors have been associated with the development and maintenance of chronic pain.

METHODS: Following REB approval, 200 patients attending a chronic pain clinic in Toronto will be asked to consent to take part in the study during the standard clinical intake interview. Participants will complete 9 self-report questionnaires consisting of the McGill Pain Questionnaire short form-2, Fear of Pain Questionnaire - III, Pain Anxiety Symptoms Scale, Pain Catastrophizing Scale, Anxiety Sensitivity Index, Pain Disability Index, Beck Depression Inventory II, and the PTSD Checklist – Civilian Version. Heat pain stimuli will be delivered using a Medoc Thermal NeuroSensory Analyzer (TSA-II, Ramat Yishay, Israel). Thermal detection thresholds will be obtained using an ascending method of limits. Participants will also rate the magnitude of pain (10 cm Visual Analog Scale) in response to suprathreshold heat pain stimuli up to 50°C.

RESULTS: Participants will be assigned to one of two groups (low PTSD vs. high PTSD symptomology) based on their scores on the PTSD checklist – Civilian Version. Thermal detection thresholds to warm stimuli, heat pain detection thresholds and magnitude estimations to suprathreshold stimuli will be compared between low and high PTSD pain groups by 2-way ANOVA. Scores on the questionnaires will be compared between groups by 2-way MANCOVA with pain severity as a covariate.

CONCLUSIONS: Understanding the factors that contribute to comorbid chronic pain and PTSD symptoms will help to elucidate effective treatment strategies for these intractable disorders.

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P13

THE DEVELOPMENT OF NEUROPATHIC SYMPTOMS AFTER THORACOTOMY: A LONGITUDINAL APPROACH

Wiebke Gandhi, PhD(c), The Alan Edwards Centre for Research on Pain; Juan Francisco Asenjo, MD, The Alan Edwards Pain Management Clinic, McGill University, Department of Anesthesiology, Montreal General Hospital, McGill University Hospital Centre; Petra Schweinhardt, MD PhD, The Alan Edwards Centre for Research on Pain, McGill University, Montreal, Quebec

AIM: It has been reported that 30 to 50% of patients undergoing postolateral ('standard') thoracotomy develop persistent pain after surgery (Maguire et al, 2006). Based on questionnaire data, it had been suggested that this pain is often neuropathic in nature (Maguire et al, 2006); one recent study using qualitative tests of sensory function has indeed provided evidence for symptoms of neuropathy (Guastella et al, 2010). To examine the development of neuropathic symptoms and neuropathic pain following thoracotomy in more detail, we use a quantitative sensory testing approach in this study, which allows monitoring the degree of neuropathic symptoms as well as their time courses.

METHODS: Patients scheduled for postolateral thoracotomy undergo one baseline session before surgery and monthly sessions after surgery for six months. In each session, quantitative sensory testing (QST) is performed according to the German DFNS protocol (Rolke et al, 2006). The protocol contains the following tests: cold and warm detection thresholds, number of paradoxical heat sensations during sensory limen procedure, cold and heat pain thresholds, mechanical detection and mechanical pain thresholds, mechanical pain sensitivity, dynamic mechanical allodynia, temporal summation, vibration detection threshold and pressure pain threshold. All tests are performed within the innervation area of the anterior intercostal branch but outside the primary skin lesion. The homologous site on the contralateral side serves as control area. For analysis, results are compared between ipsi- and contralateral sites for each patient for each testing session.

RESULTS: Three patients have been investigated to date. All patients reported pain in their chest wall around the incision following thoracotomy. QST showed that after surgery, all patients had higher warm and higher mechanical detection thresholds. Two patients were also less sensitive to vibration. In contrast, all patients demonstrated decreased pressure pain thresholds, indicating higher sensitivity to deep pressure.

CONCLUSIONS: At this point in the study, deep pressure pain appears to be a useful marker of positive neuropathic symptoms following intercostal nerve damage whereas warm and mechanical detection thresholds might be helpful indicators of negative neuropathic symptoms after thoracotomy.

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P14

RANDOMIZED CONTROLLED TRIAL OF MAGNESIUM VS PLACEBO FOR LENGTH OF STAY IN ADMITTED CHILDREN WITH SICKLE CELL DISEASE ACUTE PAIN CRISIS

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AIM: Sickle cell disease (SCD) is a chronic disorder with haemolysis and acute vaso-occlusive episodes (VOC) that carry a significant risk for morbidity and mortality among children. A distinguishing feature of sickle cell disease is the presence of dense, dehydrated erythrocytes. In the last decade there is increasing evidence that Mg2+ may play a role in preventing the increased HbS concentration, that may result in reduction in hemolysis, vaso-occlusion and pain. The objective of this study was to measure length of stay (LOS) in admission, measured as time of arrival to the Emergency Department (ED) until a physician order to stop analgesia was entered, for children with painful SCD crisis at a tertiary pediatric medical center.

METHODS: This study was a randomized (balanced block of 4 design), double blind, placebo controlled trial. Children 4-18 years old with a previous painful crisis resulting in an ED visit, that arrived to our ED and were diagnosed by the attending physician as having a VOC and in need of IV analgesia were approached to participate in the study. They received either magnesium sulphate (100 mg/Kg, Max 2 gram/dose) every 8 hours or placebo (Normal Saline in equivalent volume to magnesium sulfate 100 mg/Kg, Max 2 gram/dose) on top of analgesia provided as part of a Hospital protocol for management of VOC. We excluded children with fever on arrival to the ED, those transfused within 90 days of study entry, those with renal or heart disease, those receiving magnesium-containing medication or calcium channel blocker, last 24 hour use of anesthetics, cardiac glycosides and neuromuscular blockers, those admitted directly to the intensive care unit and those allergic to magnesium.

Children were monitored throughout their hospital admission and received the study drug during their ED and Pediatric Ward admission. We also gathered information on adverse events. We a-priori calculated a sample size of 63 patients per arm in order to provide 80% probability of achieving statistical significance at the 0.05 level (two-sided), suggesting that magnesium sulphate will reduce the LOS from 5 to 4 days on average.

RESULTS: During a period of Aug 2006 – Aug 2008 we randomized a total of 107 children for the study. We excluded three patients and analysed data of 104. 51 (49%) received IV magnesium and 53 (51%) received placebo. Mean age was 12 years. 56 (54%) were females and 48 males. The main outcome measure, LOS in the hospital, was 82.4 hours in the magnesium group and 79.3 hours in the placebo group (P=NS). Adverse events were minor and included pain at the infusion site (7/51 and 2/53 in the magnesium and placebo groups respectively) and nausea or vomiting (2/51 and 2/53 in the magnesium and placebo groups respectively).

CONCLUSIONS: Magnesium was not found to shorten LOS of admission to the hospital of children with VOC. Further research is needed to determine if magnesium is beneficial to specific populations of children with VOC.

P15

LIVING EVERYDAY ABOVE-AND-BEYOND PAIN (LEAP): DESIGN OF AN RCT EVALUATING AN INTERPROFESSIONAL COGNITIVE-BEHAVIORAL GROUP THERAPY IN PRIMARY CARE

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AIM: To assess the feasibility and effectiveness of implementing a chronic pain program in the primary care setting.

METHODS: Pragmatic RCT in the McMaster Family Health Team clinics (estimated patient population of 25,000). Participants were patients >18 years with musculoskeletal pain >6 months. Excluded are patients with pain due to cancer, unstable mental health, English language barriers, or with previous participation to pain groups. Participants were identified by their primary clinicians, recruited then randomized to Early or Delayed intervention (starting 6 months later) groups. The LEAP intervention is an 8 week interprofessional cognitive-behavioral pain program involving small group sessions led by a social worker and occupational therapist with intermittent participation of a physician, physiotherapist, dietitian and pharmacist. Therapy aims to improve self-concept, coping, pacing, goal setting, and interaction with health providers. Outcomes (SF-36 quality of life scale, pain medication use, health care utilization) will be assessed before, immediately and 6 months after intervention. The program delivery will be evaluated via qualitative interviews.

RESULTS: 200 patients were initially recruited, only 63 agreed to participate. Baseline characteristics are: Mean age 55 years (SD=14.1); 62.3% female; 19.7% have possible drug or alcohol problems. SF-36 was low (Physical component summary=31.4; Mental component summary=39.9) compared to published norms (>50). There were no significant baseline differences between Early and Delayed intervention groups.

CONCLUSIONS: Implementation of LEAP proved to be challenging especially in recruiting and maintaining patients in the groups. Analysis of quantitative outcomes and qualitative evaluation will be presented at the time of the conference.

P16

EXAMINING THE INFLUENCE OF PATIENTS' PAIN BELIEFS ON PAIN EXPERIENCE IN TAIWANESE CANCER PATIENTS

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AIM: The relationships among characteristic of disease, pain intensity, patients' beliefs about cancer pain, and mood status were examined, and to demonstrate whether predictor(s) had been explained, the contribution of variances for pain interferences with daily activities were examined.

METHODS: A descriptive, inferential cross-sectional method was used. Patients were recruited from inpatient oncology wards in Taiwan. Participants: Eligible patients were: (1) adults (>18 years), and (2) reported cancer-related pain. Measures: Pain experiences were measured using the Brief Pain Inventory-Short Form. Patients' beliefs were examined using the Pain and Opioid Analgesics Beliefs Scale-Cancer, the Catastrophizing subscale, and Self-Efficacy subscale as well as the Survey of Pain Attitude – the subscale of Disability. The Hospital Anxiety and Depression Scale measured patients' anxiety and depression.

RESULTS: A total of 169 inpatients participated, the mean age was 52.5 (SD=10.32) years, and 48.5% were men. 59.8% were diagnosed as stage VI or metastatic disease. Interestingly, patients with non-advanced disease reported higher scores on disability beliefs about pain and beliefs about endurance pain than patients with advanced pain ($p<.05$). For all of participants, pain intensity was moderately positively associated with pain interference, disability beliefs, pain catastrophizing, and anxiety as well as depression ($p<.05$). Additionally, patients' self-efficacy about cancer pain was inversely related to pain intensity ($p<.05$). Hierarchical Linear Regression analysis revealed that the stage of disease and the severity of global symptoms distress (R2 change: 0.350, ΔF: 28.104, $p<.001$), the worst pain intensity (R2 change: 0.108, ΔF: 31.135, $p<.001$), disability beliefs as well as self-efficacy about cancer pain (R2 change: 0.054, ΔF: 4.166, $p=.003$), and depression (R2 change: 0.016, ΔF: 2.543, $p=.082$) were established as predictors for patients' pain interference with daily activities. Moreover, using the Sobel test for examining the mediation, self-efficacy was a significant mediator to carry the influence of "patients' beliefs about opioid use" to "pain intensity" ($z=2.583$, $p=0.009$).

CONCLUSIONS: Pain interferences with daily activities had been significantly predicted by the severity of symptoms distress including global symptoms and pain intensity, pain beliefs including self-efficacy about cancer pain as well as disability beliefs, and the level of depression. Although patients' beliefs about analgesics use did not directly contribute to the account of variances for pain interferences, the self-efficacy about cancer pain was a significant mediator to carry the influence of their beliefs about analgesics use to the pain intensity.

P17

CHANGES IN COPING STYLE AND TREATMENT OUTCOME FOLLOWING A MOTOR VEHICLE ACCIDENT

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AIM: Motor vehicle accidents (MVAs) sometimes result in a complex interplay of physical injury, disability and emotional distress. It has been suggested that the manner in which individuals cope with pain experienced after injury may determine how much recovery of function can be achieved. The objective of the current study was to examine the influence of coping styles (active vs. passive) on functional and quality of life outcomes in a tertiary rehabilitation program for those injured in an MVA.

METHODS: A sample of 96 consecutive referrals to a tertiary-level, multidisciplinary functional restoration program completed physical performance measures pre- and post-treatment, as well as a standardized self-report measure of quality of life (QOL) at the same time points and 6-month follow-up. Coping style (active vs. passive) was assessed at pre- and post-treatment.

RESULTS: Improvements from pre- to post-treatment were evident on the 6-minute walk test, left and right grip strength, and most QOL measures. Increases in active coping during treatment were associated with pre- to post-treatment increases in QOL across most domains, and improvements in performance on the 6-minute walk test. Likewise, decreases in passive coping during the course of treatment were associated with improved performance on the 6-minute walk test, right-handed standing reach test, and most QOL indicators.

CONCLUSIONS: Findings suggest that those who adopt an active approach (and avoid taking a passive approach) to rehabilitation following complex musculoskeletal injury benefit along both QOL and functional dimensions relative to those who do not.

P18

THE INITIAL STEPS FOR THE DEVELOPMENT OF A SMARTPHONE-BASED HEADACHE DIARY FOR YOUTH AND YOUNG ADULTS

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AIM: Headache disorders are common. Frequent headache assessment through headache diaries facilitates pain management. Electronic diaries offer advantages over paper-based diaries. With the advent of mobile phones and wireless technology, appealing products such as Smartphones are appearing to support electronic diaries. Our goal was to create an application for a Smartphone-based headache diary to be used by sufferers between 14-28 years old.

METHODS: This application was created based on: (1) a systematic review of electronic headache diaries, (2) a qualitative study with focus groups that examined the preferences of headache sufferers on ideal clinical and technical aspects of the application, and (3) a survey with clinical and technological experts and sufferers to evaluate the appropriateness of the diary questions, and initial aspects of the mobile interface development.

RESULTS: The diary will use a combination of interval- and event-contingent recording to capture data. The diary will collect information about headache characteristics (e.g., intensity, duration, triggers, and other symptoms) and several domains of daily functioning. The diary will allow sufferers to make notes about any information that they choose to keep track of that they feel is pertinent to their headaches. It will be short (i.e., entries will be done in less than 2 minutes) and quick to complete (e.g., by setting default values for certain input fields with values from previous inputs). It will also have personalized options (e.g., choices for entry methods, reminder notifications) which will help to motivate use of the diary.

CONCLUSIONS: It is important to involve stakeholders at early stages of development. The opinions of headache sufferers and experts have helped to shape the development of the Smartphone application to ensure it meets the needs of the end-users. The next steps will be to conduct usability testing and determine the effectiveness of this diary.

P19

DEVELOPING A STANDARDIZED APPROACH TO THE ASSESSMENT OF PAIN IN CHILDREN AND YOUTH PRESENTING TO PEDIATRIC RHEUMATOLOGY PROVIDERS

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AIM: This study sought to determine the feasibility (i.e., efficiency, errors, compliance and acceptability) of three mediums (paper-and-pencil, computer, and iTouch) for implementing the newly developed Standardized Universal Pain Evaluation by Rheumatology providers for children (2 items for 4-7 years; plus parent proxy report) and youth (20 items for 8-18 years) pain measure (SUPER-KIDZ).

METHODS: Ten children and 32 youth recruited from a large pediatric centre in Canada completed the measure using each medium (order randomly assigned). A summary report was provided to the child's rheumatologist prior to clinical assessment. A satisfaction survey was then completed by children, the parents of younger children and their rheumatologists.

RESULTS: Using age-appropriate measurement scales, older children reported pain intensity during assessment to be 3.2±2.1 (M±SD) out of 10 and younger children as 2.9±2.8 out of 10. It took significantly longer for older children and parents to complete the measure using iTouch (M=6.5 minutes for both groups) compared with paper (M=3.0 and 1.8 minutes respectively) and computer (M=3.8 and 3.9 minutes respectively; $p < 0.001$). There was no difference in the number of missed responses between mediums. There were also no differences in preferred medium for assessment completion in any of the groups. However, 86% (n=27) of children 8-18 years found the iTouch or computer more appropriate for their age group.

CONCLUSIONS: It is clinically feasible to complete the SUPER-KIDZ pain measure by electronic or paper medium. The medium used in everyday clinical practice may depend on the child's age, economic and administrative factors.

P20

PROGRAMME ACCORD – DETERMINANTS OF PATIENT GLOBAL IMPRESSION OF CHANGE AFTER INTERDISCIPLINARY INTERVENTION FOR FIBROMYALGIA

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AIM: Structured interdisciplinary group interventions aimed at patient empowerment known as Interactional Schools of Fibromyalgia (ISF) were found to be effective as for patient global impression of change (PGIC). Our objective was to identify baseline determinants of patient PGIC after ISF.

METHODS: A longitudinal study was conducted in an adult sample of fibromyalgia patients who participated in a randomized controlled trial of ISF. Participants were asked to fill out a self-administered questionnaire at baseline (T0), immediately after the intervention (T1), and 3 months post-intervention (T2) in order to collect data on socio-economic variables, lifestyle, pain characteristics, physical/psychological functioning, quality of life (QOL), sleep quality, and coping strategies. PGIC regarding pain symptoms, functioning, and quality of life in the past 3 months was measured using 7-point Likert scales (very much/much/minimally improved, no change, minimally/much/very much worse). A successful outcome was defined as an improvement on these scales.

RESULTS: Our sample consisted of 28 patients (93% women) with a mean age of 50.0±9.2 years that were randomized to the ISF group. From T0 to T1, a majority of participants reported successful outcomes regarding pain symptoms (72%), functioning (55%), and QOL (77%). A majority of participants also reported improvement from T1 to T2 (62%, 43%, and 38%). In multivariate logistic regression models, none of the baseline characteristics were found to be associated with successful outcomes at T1 or T2.

CONCLUSIONS: These preliminary results suggest that ISF can be effective in a broad range of fibromyalgia patients and underline the potential benefits of ISF in real-world settings.

P21

ÉTUDE EXPLORATOIRE SUR LES ATTITUDES DU SOIGNANT ENVERS LA DOULEUR ET LA SOUFFRANCE EN CONTEXTE DE MALADIES CHRONIQUES – RÉSULTATS PRÉLIMINAIRES

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AIM: Les médecins et les infirmières côtoient quotidiennement la douleur et la souffrance d'autrui. Et pourtant, la formation et l'enseignement sur ces sujets sont peu élaborés. Est-ce que le soignant prend le soin de se questionner sur le sens de la vie, de la mort, de la souffrance ? Ces questionnements relèvent de la spiritualité qui est une expérience humaine de recherche de sens. Puisque la douleur est une expérience subjective, tout comme la spiritualité, nous suggérons qu'une corrélation existe entre ces deux expériences et que le soignant doive d'abord se positionner en tant qu'individu spirituel avant de pouvoir reconnaitre le vécu douloureux chez son patient souffrant.

METHODS: Nous avons utilisé une typologie d'identité spirituelle pour explorer les attitudes du soignant face à la souffrance de patients atteints de douleur/maladie chronique. Cette typologie se base sur les concepts d'une construction narrative de son identité, du besoin de réalisation personnelle et du mode de croyance face à la vie. Des soignants de diverses disciplines ont été interrogés. Trois types sont explorés.

RESULTS: Le type Tout-puissant qui croit en une entité supérieure qui peut tout régler ou guérir (Dieu, la science ou la médecine). Le type Guide qui croit en une relation authentique avec plus grand que soit pour se réaliser. Finalement, le type Moi, qui ne croit qu'en ses seules possibilités. Dépendamment de leur identité spirituelle, leur interprétation et prise en charge de situations cliniques expérimentalement standardisées sont très différentes.

CONCLUSIONS: Des exemples verbatim seront présentés ainsi que les implications pratiques de ces divergences d'attitudes.

P22

DEMOGRAPHICS AND PHARMACOEPIDEMIOLOGY OF WORK SAFETY INSURANCE BOARD (WSIB) CLAIMANTS REFERRED TO THE TORONTO WESTERN HOSPITAL TERTIARY CARE PAIN CLINIC

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AIM: To describe characteristics and drug prescriptions of a subgroup of injured workers referred by WSIB staff to a tertiary care pain clinic (Comprehensive Pain Program [CPP] of Toronto Western Hospital).

METHODS: Cross Sectional study including 110 consecutive injured workers (2008-2009). Demographics, medications at CPP entry, clinical diagnosis and pain ratings were collected at first consultation and via retrospective chart review.

RESULTS: Male/Female ratio was 2.3:1; mean age 45.5 years; mean pain duration 6 years; 79% of patients were unemployed. Mean pain ratings were 7.1±1.8 (on a Numerical Rating Scale 0-10); 21% of the workers were diagnosed with a biomedical problem (Group I), 51% with medical/psychological factors (Group II) and 25.5% had identifiable psychological factors but no physical pathology (Group III). At the point of CPP entry 81.8% of the injured workers (90/110) were on opioids; of those 67.7% were prescribed <200mg of daily morphine or equivalent (MED) (mean dose 55.8 mg) and 32.2% >200mg MED (mean dose 589.1 mg). Most of Group II and III injured workers (85.5% and 93% respectively) were on opioids, as compared to Group I (54%) ($p<0.05$).

CONCLUSIONS: The vast majority of injured workers are on long term opioid therapy with 1/3 exceeding by far the "watchful" dose of 200 mg MED suggested by the 2010 Canadian Guideline. The data show worrisome trends of prescribing opioids with increasing frequency to a specific sample of injured workers with psychological factors involved in their disability, even in the absence of detectable pathology.

P23

EVALUATION AND REFINEMENT OF THE ICONIC PAIN ASSESSMENT TOOL VERSION 2 (IPAT2) BY ADULTS AND ADOLESCENTS WITH ARTHRITIS

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AIM: The current study aimed to evaluate and refine the IPAT2, a web-based tool that records the visual self-report of pain in the form of time-stamped 'diaries' (1;2), from the perspective of patients with arthritis pain. We have previously reported content validity testing of the IPAT1 through

formal evaluation by a heterogeneous group of people with chronic pain (2), and subsequently modified the tool according to patient feedback. Patients can choose among a bank of stylized icons to describe the quality of their pain. After assigning an intensity rating (0-10 NRS), each individual icon can be 'dragged-and-dropped' onto a body-map to indicate pain location.
METHODS: Adult (n=15) and adolescent (n=15) patients diagnosed with inflammatory arthritis were recruited to take part in a single, semi-structured interview following a scheduled clinic visit. First, participants evaluated various characteristics of the IPAT2 pain iconography. Second, participants used the tool to document their current pain. Third, perceptions and satisfaction with the IPAT2 concept were assessed through audio-taped semi-structured interview.
RESULTS: Quantitative data were summarized by descriptive statistics, while a line-by-line coding analysis identified key concepts from interview transcripts. The stakeholder feedback generated by this study will direct refinement of the IPAT2 prototype for individuals with arthritis pain. Selected aspects of the user interface, such as level of detail on the body-map, are being modified to reflect patient preferences.
CONCLUSIONS: The IPAT2 concept of expressing pain through iconography was well-received by this patient sample. Future studies will assess clinical feasibility and utility of the IPAT2, in comparison with standard self-report protocols.
FOOTNOTES/REFERENCES: 1. McMahon, E. et al. The Iconic Pain Assessment Tool: Facilitating the Translation of Pain Sensations and Improving Patient-Physician Dialogue. J Bio Communication 34, E20-E24 (2008).
2. Lalloo, C. & Henry, J. L. Evaluation of the Iconic Pain Assessment Tool by a heterogeneous group of people in pain. Pain Res Manage 16, 13-18 (2011).

P24
EVALUATING THE CLINICAL FEASIBILITY AND UTILITY OF THE ICONIC PAIN ASSESSMENT TOOL VERSION 2 (IPAT2) FROM THE PERSPECTIVE OF PATIENTS AND HEALTHCARE PROFESSIONALS AT A PEDIATRIC CHRONIC PAIN CLINIC

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AIM: This study aims to evaluate feasibility (ease of application in the clinical setting) and utility (meaningful application of tool results) of the IPAT2 prototype, a web-based program for the visual self-report of pain quality, intensity and location (1;2).
METHODS: A healthcare provider will identify potential participants (12-18y, fluent in English, diagnosed/currently under treatment for recurrent or chronic pain) during their scheduled clinic visit. Participants will self-report their current pain using the IPAT as well as standard clinic scales (self-reported current, worst, least, and average pain over the past week using NRS, word descriptors). The order of these assessments will be randomized. Results from both assessments (standard and IPAT) will be provided to the health team during their follow-up visit with the patient. A brief interview will assess the patient's satisfaction (likes and dislikes) with the IPAT. Subsequently, a focus group discussion will be organized with the entire health team to assess their satisfaction with the IPAT versus standard protocol and identify factors that could limit effective clinical integration of the tool. Audio recordings will be transcribed verbatim and undergo line-by-line coding analysis to identify key themes. Data collection and analysis will occur simultaneously (constant comparative analysis). An iterative testing approach will establish final sample size. After an initial cycle of 8 patients, prototype will be modified as needed, and a validity-check focus group with the health team will determine the need for subsequent cycles (theoretical saturation). We anticipate that 2-3 cycles of testing will be needed to refine the prototype.
RESULTS: Study is currently being initiated.
CONCLUSIONS: n/a
FOOTNOTES/REFERENCES: 1. McMahon, E. et al. The Iconic Pain Assessment Tool: Facilitating the Translation of Pain Sensations and Improving Patient-Physician Dialogue. J Bio Communication 34, E20-E24 (2008).
2. Lalloo, C. & Henry, J. L. Evaluation of the Iconic Pain Assessment Tool by a heterogeneous group of people in pain. Pain Res Manage 16, 13-18 (2011).

P25
CHARACTERISTICS OF CHRONIC NON-CANCER PAIN (CNCP) PATIENTS REFERRED TO A TERTIARY CARE PAIN CENTRE, ASSESSED AS HIGH RISK FOR OPIOID RELATED ABERRANT BEHAVIOUR

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AIM: To identify characteristics of CNCP patients assessed in a tertiary care pain clinic in Toronto, who scored high on the ORT.
METHODS: Retrospective cross-sectional study of all new patients referred over 12 months. Data extraction included demographics, pain ratings, opioids at point of entry, diagnosis, and ORT scores (High, Moderate and Low risk).
RESULTS: The sample consisted of 322 patients. Male/female ratio was 1:1.2, mean age 49±14 years; mean pain duration 7 years; mean pain ratings 6.36±2.1 (on a 0-10 scale); 67% of patients were Canadian born. Pain was attributed to a biomedical problem (Group I) in 38% of the patients, to biomedical/psychological factors (Group II) in 42%, and to primarily psychological factors (Group III) in 19%. Opioids were prescribed in 69%; 1/5 opioid users were prescribed >200 mg morphine or equivalent. Of the total sample 10% of the patients were classified on the ORT as high, 69% moderate and 22% low risk. Men were twice as likely ($p<0.001$) and Canadian born 7.5 times more likely ($p<0.0001$) to be high risk as compared to females and foreign born, respectively. In Group I, 5% of patients scored high on the ORT compared to 13% and 15% of Group II and III patients, respectively ($p<0.05$).
CONCLUSIONS: Canadian born males with significant psychological co-morbidities are more likely to be classified as high risk for opioid-related aberrant behaviour.

P26
WITHDRAWN

P27
ANTI-HYPERNOCICEPTIVE PROPERTIES OF EXTRACT FROM THE BULBILS OF *DIOSCOREA BULBIFERA L VAR SATIVA* (DIOSCOREACEAE) IN PERSISTENT INFLAMMATORY AND NEUROPATHIC MODELS OF PAIN IN MICE

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AIM: Here we evaluated the antinociceptive effects of the extract from the bulbils of *Dioscorea bulbifera L. var sativa* (Dioscoreaceae) in persistent inflammatory and neuropathic models of pain in mice, in order to assess some of the mechanisms involved in its actions. This plant is used in Cameroonian traditional medicine in the treatment of many pathologies including pain.
METHODS: The analgesic effects were evaluated on three models of acute pain induced by LPS, PGE2 and capsaicin, one model of chronic inflammatory pain induced by CFA and two models of neuropathic pain induced after avulsion of the brachial nerve and sciatic nerve ligature.
RESULTS: Oral administration of the methanol extract inhibited significantly and in a dose-dependent manner the different models of pain used. The methanol extract of D. bulbifera significantly inhibited acute pain

induced by LPS and prostaglandin E2, the inflammatory pain induced by CFA and the neuropathic pains induced by avulsion of the brachial nerve and sciatic nerve ligature; in addition, on the other hand this extract did not have an effect on the capsaicin induced pain. The analgesic activity of the methanol extract of D. bulbifera was inhibited by L-NAME and glibenclamide on the prostaglandin E2 induced pain.
CONCLUSIONS: These results suggest that, the analgesic effect of the extract of D. bulbifera could result from an activation of the NO/GMPc/ATP dependent potassium channel. These results show that the bulbils of D. bulbifera possess analgesic properties. *Dioscorea bulbifera L. var sativa* have therapeutic virtues, which justify its use in traditional medicine. The results of this study show that this plant is equipped with pharmacological analgesics properties and probably anti-inflammatory properties.

P28
DO YOU SEE WHAT I SEE? MULTIDISCIPLINARY PRACTICES AND PREFERENCES IN THE ASSESSMENT OF CRPS

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AIM: This poster will present the results of a cognitive debriefing study which examined the process used by a cross-section of experienced clinicians to arrive at the observational judgements required by the health professional assessment component of a new assessment tool. The current iteration of the Hamilton Inventory for Complex Regional Pain Syndrome (HI-CRPS) has 2 sections: a 15 item clinician based assessment (CB-HI-CRPS) and a 35-item patient self-report (PR-HI-CRPS).
METHODS: 20 cognitive debriefing interviews were conducted with clinicians representing a variety of professions involved in the care of patients with CRPS, including physiotherapy, occupational therapy, physiatry, plastic surgery, anaesthesia, and nursing. Verbal probing of the 15 concepts represented by the CB-HI-CRPS was completed and recorded in a standardized format; the transcripts were then reviewed and coded for both thematic content analysis and quantitative summaries of scale preferences and assessment practices.
RESULTS: 10 themes emerged from the interviews, including the role of subjective and objective assessments, the influence of pain on scoring, the role of clinical experience, diagnostic vs outcome assessment and knowledge translation. From a numbers perspective, clinicans preferred 4 point scales to 7 point scales and several of the 15 items were identified as having more value for diagnosis than for the assessment of outcome. Few participants (35%) currently assessed pinprick hyperpathia, so developers may consider dropping this item from future versions of the tool.
CONCLUSIONS: Cognitive debriefing interviews can provide detailed information on how clinicians formulate judgements about assessment concepts, and highlighted similarities and differences across professional groups. This information can be used to refine clinical assessment tools intended for multidisciplinary use, potentially improving the reliability and validity of the tool. The descriptive scale anchors generated by participants also were clinically relevant and reflected a multidisciplinary lexicon. This mixed methods study will supplement the quantitative pilot testing of the CB-HI-CRPS and strengthen future iterations of the tool.

P29
OPIOID TOLERABILITY AND CHRONIC PAIN MANAGEMENT – IMPACT ON TREATMENT ADHERENCE, CANADIAN HEALTH CARE RESOURCE USE, PRODUCTIVITY & PATIENT QUALITY OF LIFE

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AIM: A web-based, observational study was conducted to assess the clinical and economic impact of opioid tolerability related issues experienced by Canadian chronic pain patients.
METHODS: Approximately 165 patients were enrolled from 14 recruiting centres across Canada. Eligibility criteria were: diagnosis of non-malignant chronic pain requiring strong opioids for >=4 days per week; patients were either opioid naïve, new to opioid therapy or opioid experienced. Eligible patients were invited to participate by their physician during routine care appointments at family or pain medicine practices. Interested and eligible patients were directed to a web-site where they provided consent and then completed a weekly on-line questionnaire documenting their chronic pain experience over a 12 week period. The anonymized, pass-word protected, web-based survey could be completed at home; data entry reminders were issued via email and telephone.
RESULTS: Assessments included pain severity via the Numerical Rating Scale, opioid treatment adherence, concomitant medication surveillance and effectiveness of medications to manage GI side effects, impact of opioid related side effects on quality of life, medical resource use, productivity.
CONCLUSIONS: Results will inform unmet care needs and health economic analyses.

P30
CATHEPSIN G CAUSES DE-SENSITISATION OF PRIMARY AFFERENT NERVE FIBRES IN RAT KNEE JOINTS

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AIM: The serine proteinase Cathepsin G is a chemoattractant which is seen in the synovial fluid of rheumatoid arthritis patients. It is not known, however, whether Cathepsin G plays any role in joint pain. Therefore, this study examined the effect of Cathepsin G on type III and type IV afferent firing rate in rat knee joint nerve fibres in response to mechanical stimulation.
METHODS: Electrophysiological techniques were used to measure single unit neuronal activity from afferent fibres in the knee joints of naive 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 1ng/100µl - 10µg/100µl of Cathepsin G, or boiled Cathepsin G as control.
RESULTS: Doses of 100ng, 1µg and 10µg/100µl Cathepsin G significantly decreased firing rates of joint primary afferent fibres during non-noxious and noxious rotation of the joint ($p<0.01$ compared to boiled enzyme control using two-way ANOVA, n=8-16).
CONCLUSIONS: These data reveal that in normal rat knee joints Cathepsin G causes de-sensitisation of primary afferent fibres during non-noxious and noxious movement, the latter response being indicative of an anti-nociceptive effect. The mechanism behind this phenomenon is now being investigated.

P31
CREATING AN AMBULATORY BRACHIAL PLEXUS CATHETER PROGRAM: AN ACUTE PAIN SERVICE EXPERIENCE

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AIM: This quality improvement initiative describes the experience of patients who were discharged home with a continuous peripheral nerve block following upper extremity surgery.
METHODS: To be considered for the ambulatory CBPB program, patients had to: reside within a 1 hour driving radius from the hospital and have a care giver willing to remove the catheter. An interscalene or infraclavicular perineural catheter was placed pre-operatively. A disposable pump of 0.1% or 0.15% ropivacaine at 5cc/h was attached to the CPBP catheter. Patients were given instructions for the management of the CBPB and provided with contact telephone numbers. The patients were assessed daily by telephone for symptoms of local anesthetic toxicity, sensory or motor block, and adequacy of analgesia.
RESULTS: 51 patients who underwent upper extremity surgery were discharged to home with a CBPB between March 2009 and January 2010. 38 (75%) patients were discharged home on the day of their surgery. The mean pain score on post-operative day 1 and 2 was 3/10. The majority of patients had their CPNB removed on post-operative day 2. 8 patients returned to hospital for the following reasons: difficulty removing the catheter at home (n=5), severe pain and had their CPNB topped up with local anesthetic (n=2), decreased sensation and severe pain in hand that was resolved with catheter removal (n=1).

CONCLUSIONS: The majority of patients had good analgesia with an ambulatory CBPB and oral analgesics and no major complications were noted. Daily telephone contact allowed for patient assessment and the opportunity to provide advice regarding oral analgesic use.

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P32

NURSES' KNOWLEDGE AND BELIEFS REGARDING PATIENT CONTROLLED ORAL ANALGESIA

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AIM: The purpose of this study was to identify nurses' knowledge and beliefs regarding PCOA.

METHODS: Nurses who work at the Holland Orthopaedic and Arthritic Centre were asked to complete a survey exploring their beliefs regarding PCOA. The nurses were asked to complete the same survey twice: prior to an education program, in Feb 2010, and 3 months following implementation of PCOA, in June 2010.

RESULTS: In Feb 2010, 74 and in June 2010, 32 nurses participated in the survey. 18% of nurses had previous experiences with PCOA prior to program implementation. Nurses believed that the PCOA program reduced wait times for analgesics and improved patient satisfaction with pain management.

Prior to program implementation, negative beliefs included that patients on the PCOA program would: lose their analgesics (10%), would give their analgesics to visitors or other patients (15%), were at risk for having their analgesics stolen (16%) and that they were liable if patient's analgesics were lost or stolen (16%). Following program implementation no nurse believed that patients would lose their analgesics or give their analgesics to visitors or other patients, or that they were liable for lost or stolen analgesics. However, 15% of nurses continued to believe that patients were at risk for having their analgesics stolen.

CONCLUSIONS: We found that nurses were concerned that analgesics could be lost, misused or stolen, and they would be liable for lost analgesics. These findings were consistent with literature discussing patients' outcomes regarding PCOA. It is important to address these concerns prior to PCOA program implementation.

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P33

WITHDRAWN

P34

DETERMINING FACTORS IN THE EXPERIENCE OF PERCEIVED INJUSTICE FOLLOWING WHIPLASH INJURY

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AIM: Perceived injustice has been indicated to detrimentally impact pain, disability, and work return following musculoskeletal injury (Sullivan et al., 2008). However, little is currently known about factors that predispose individuals to experience injustice, or how it might be targeted through intervention. Thus, this study examined determinants of perceived injustice following injury. Available theory and research suggest that the experience of loss is an important component of injustice. Therefore, loss-related factors, such as heightened pain and disability, reduced physical functioning, and loss-exacerbating psychological factors (pain catastrophizing, fear of movement/(re-injury), depression, and low pain self-efficacy), were expected to predict perceived injustice. Following this reasoning, favourable changes on these loss-related factors over the course of treatment were expected to predict treatment reductions in injustice.

METHODS: Participants were 104 whiplash-injured individuals enrolled in a standardized multidisciplinary rehabilitation program during which they completed self-report measures of pain severity, disability, pain-related psychological functioning, and perceived injustice. Physiotherapists assessed participants' physical functioning. Assessments were completed upon admission to, midway through, and upon completion of the program.

RESULTS: A hierarchical regression analysis revealed pain severity, disability, and physical functioning to significantly predict perceived injustice, ΔR^2=0.15, Fchange(5, 96)=3.7, p<0.01. Pain-related psychological variables significantly contributed additional variance to the injustice prediction, ΔR^2=0.38, Fchange(4, 92)=23.4, p<0.001. An additional hierarchical regression analysis revealed favourable treatment changes on pain severity, disability, and physical functioning, as well as favourable pain-related psychological changes to significantly predict reductions in perceived injustice, ΔR^2=0.16, Fchange (6, 97)=3.2, p=0.01, and, ΔR^2 = 0.19, Fchange(3, 94)=9.4, p<0.001, respectively.

CONCLUSIONS: The losses associated with heightened pain and disability, reduced physical functioning, and poor pain-related psychological functioning appear to be determinants of perceived injustice following whiplash injury. Interventions aimed at improving these loss-related factors might, therefore, also help target perceived injustice.

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P35

PULSE RADIOFREQUENCY OF DORSAL ROOT GANGLION AS A TREATMENT FOR CHRONIC LUMBAR RADICULAR PAIN; A RANDOMISED, DOUBLE BLINDED, PILOT STUDY

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AIM: To assess the feasibility of studying Pulse Radiofrequency as a treatment option in patients with Chronic Lumbar Radicular Pain in terms of Recruitment Rate and Proposed methodology.

As secondary objectives, the study would also look into assessing 1) Effectiveness of PRF for pain relief measured in VAS at 4 weeks, 2) Change in Oswestry Disability Index, 3) Observed Side effects, and 4) Decrease in analgesics at 4 weeks and 3 months.

METHODS: Patients with Clinical Diagnosis and Radiological confirmation of Chronic Lumbar Radiculopathy of at least 6 months are recruited once the inclusion exclusion criteria are fulfilled. Consented patients are randomised into 2 groups; Placebo and Pulse RF. Patients in both groups undergo an intervention under fluoroscopy with predefined technical parameters of needle position at the suspected Dorsal Root Ganglion. After test stimulation to confirm the level of affected DRG treatment is applied.

All personnel, except the technician operating the RF machine, were blinded to the intervention, including the interventionist, assessor and the patient. Placebo involves only stimulation even during the treatment period. Patients are followed at the following intervals: 1 day, 1 week (both telephonic follow up) for VAS and side effects; and 4 weeks, 8 weeks and 12 weeks for VAS score, Side effects, ODI score and Analgesic Use.

RESULTS: The study is into its 4th month and presently up to 1/3rd of estimated patients have been recruited, satisfying the recruitment rate expected of this pilot trial. Since it is a blinded study other parameters of clinical success have not been determined. No side effects of clinical relevance have been observed with any patients so far.

CONCLUSIONS: This Research Project has been selected as one among the two CPS Research Trainee Award in Clinical Sciences Category for 2011.

P36

HETERODIMERIZATION BETWEEN SOMATOSTATIN RECEPTOR-4 AND DELTA-OPIOID RECEPTOR: MODULATION OF ANALGESIC SIGNALING PATHWAYS (STUDENT PRESENTATION)

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AIM: To determine heterodimerization between SSTR4 and delta Opioid Receptor. Somatostatin acts as a neurotransmitter and neuromodulator and influence motor, sensory, cognitive and autonomic functions. Like SST, the opioid transmitter system is also expressed in the brain and modulates pain perception through three different receptor subtypes namely delta, mu and kappa. SST analogues induce powerful analgesic effects in conditions where opioids are ineffective. Whether heteromeric-interactions exist between SSTRs and ORs and modulates pain progression is still elusive.

METHODS: Biochemical and Biophysical techniques including immunocytochemistry, Pb-FRET, Co-Immunoprecipitation, cAMP analysis, western blot analysis and electrophysiology were employed in this study.

RESULTS: By using immunocytochemistry SSTR4 and delta OR were localized in rat spinal cord, striatum and cortex. Further, stably cotransfected HEK-293 cells were used to determine heterodimerization, receptor trafficking, coupling to adenylyl cyclase and signaling pathways and compared with monotransfected cells. SSTR4/delta OR exist as heterodimers as shown by relative-FRET efficiency 16.4% and 15% in the basal condition and upon treatment with SB-205607 (delta OR agonist) respectively, whereas heterodimerization was lost upon SST treatment due to SSTR4 internalization. Treatment of cotransfectant with SST or SB-205607 induced maximum inhibition of Forskolin-stimulated cAMP by >35% whereas upon treatment in combination with SST-14+SB-205607 forskolin-stimulated cAMP was inhibited by >40%. Significant changes in the signaling pathways including ERK1/2, ERK5, PI3K/AKT and PKA were observed in cotransfected cells. The status of phospho-PKA, ERK1/2, ERK5 and PI3K was predominantly regulated by SSTR4 which was blocked upon PTX treatment. These results show that SSTR4 associates with delta OR as a hetero-oligomer to form a novel receptor with distinct properties from individual receptor.

CONCLUSIONS: Data presented in this study demonstrates significant role of SSTR4/delta Opioid receptor heterodimerization in regulation of signaling cascade involved in pain-processing and analgesic responses.

P37

PAIN ASSESSMENT PRACTICES IN HOSPITALIZED CHILDREN ACROSS CANADA (MODERATED SESSION)

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AIM: To describe (a) the nature and frequency of acute paediatric pain assessment and (b) procedural pain intensity in hospitalized Canadian children.

METHODS: Data on pain assessment and pain intensity during the previous 24-hours were collected from 3822 hospitalized children aged 0-18 years. Data were collected from 32 inpatient units (14 medical, 10 critical care and 8 surgical) across 8 Canadian university-affiliated paediatric hospitals.

RESULTS: Of the 3822 charts reviewed, 2615 (68.4%) had some type of pain assessment reported within the previous 24-hr period. Documentation using a validated pain assessment tool was found in 1073 (28.5%) charts. The most frequently used tools were: Numerical Rating Scale (17.6%); Faces Legs Activity Cry Consolability Scale (6.3%); the Scale for Use in Newborns (1.3%), 4-point Verbal Scale (0.8%); and the Modified Comfort Scale (0.8%). Of the 28% of children who had pain assessed using a validated measure, pain was assessed an average of 4.6 times with an average standardized pain score of 2.56 (range: 0-10).

CONCLUSIONS: Less than one-third of hospitalized children had pain assessed using a validated pain assessment tool; however, children who had pain assessed with a validated pain assessment tool were likely to have their pain assessed regularly (i.e., every 4-6 hrs) over a 24-hour period. The mean pain intensity score was within the mild range but the full spectrum of scores was noted, suggesting many children still experience severe pain during hospitalization. Further investigation into innovative strategies to improve acute paediatric pain assessment practices is needed.

P38

COMPARISON OF TWO PATIENT PAIN OBSERVATIONAL TOOLS IN A TRAUMA/NEUROSURGICAL INTENSIVE CARE UNIT

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AIM: While many nonverbal patients are present in the intensive care unit (ICU), there are few valid tools available for the assessment of pain in this group. The purpose of this study was to examine the validity of two pain assessment tools, the adult non-verbal pain scale (NVPS) and the critical care pain observation tool (CPOT) in a trauma and neurosurgical patient population.

METHODS: Patients were assessed using the NVPS and CPOT by trained ICU nurses and research assistants prior to, during, and after two procedures: turning of the patient (nociceptive procedure), and blood pressure cuff inflation (non-nociceptive procedure). Communicative patients were also asked to report their level of pain during each assessment.

RESULTS: Seventy patients (35 communicative and 35 noncommunicative) were included in the study. CPOT and NVPS scores were significantly higher during the nociceptive procedure than during the pre- and post-rest periods ($p<0.001$). There were no significant increases in scores during the non-nociceptive procedure. Correspondingly, patients' self-reported pain scores were significantly higher during the nociceptive procedure than during the rest periods ($p<0.05$).

CONCLUSIONS: Considering the high levels of pain experienced by critically ill patients in the ICU and the inability for many patients to provide their self-report of pain, the implementation of a valid pain assessment tool for nonverbal patients is crucial. This study demonstrates

criterion and discriminative validity of the CPOT and NVPS in critically ill patients with traumatic injuries or neurosurgical indications.

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UNDERSTANDING CHRONIC PAIN FOLLOWING SURGERY IN WOMEN

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AIM: Chronic postsurgical pain (CPSP) may be as high as 85% in certain surgical procedures. Evidence on chronic pain after surgery is primarily based on cross-sectional or retrospective studies. The purpose of this study was to document the incidence and predictors of CPSP after gynecological surgery.

METHODS: This prospective study conducted in Southeastern Ontario included a convenience sample of 433 women scheduled for elective surgery. Women completed questionnaires preoperatively, 6 weeks and 6 months postoperatively. The primary outcome was pain measured with the Brief Pain Inventory (BPI). Predictive factors included preoperative demographic, clinical and pain characteristics, anxiety (State-Trait Anxiety Inventory) and depression (Centre for Disease Control - Depression).

RESULTS: Mean age of study participants was 48.9 years (±11.2), the majority had at least a high school education and 64% were employed. Thirty-five percent reported depressive symptoms (≥16/60), 35% state anxiety (≥45/80) and 19% trait anxiety symptoms (≥45/80). Preoperatively, 31% reported moderate to severe pain-related interference. Six months postoperatively, 14% reported pain related to surgery, with 9% reporting moderate to severe pain intensity and 11% reporting moderate to severe pain interference. Women with preoperative depressive or state anxiety symptoms were >2 times more likely to report CPSP. Preoperative pain (surgical site and other) was a significant predictor of CPSP. Surgery-related pain six weeks postoperatively predicted surgical pain intensity and interference at six months postoperatively.

CONCLUSIONS: Women with preoperative psychological symptoms and pain are at increased risk of CPSP. Further studies should evaluate prevention interventions in groups at high risk of CPSP.

P40

THE PAIN AND STRESS RESPONSES OF FULL TERM NEWBORNS BORN TO MOTHERS WITH AND WITHOUT PRENATAL DEPRESSION

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AIM: To compare measures of infant pain behavior, heart rate (HR) and heart rate variability (HRV) before, during and after infant heel-lance (HL) between groups of infants born to mothers with prenatal depression (n=14) and control infants (n=10).

METHODS: Measures of infant HR were continuously collected during baseline (BL – 5min), HL and the post HL events (5min). Infant body movements were continuously videotaped for the full duration of each infant's HL. Two blinded coders continuously coded the pre-recorded videotaped behaviors of each infant case, second-by-second using the reliability established Infant Motor Behavior Coding System. Inter-rater reliability was k=.80. Change in Mean HR, and HRV (High-Frequency-Power (HFP); Low-Frequency-Power (LFP) over 12 study epochs of HL (epochs 1-5 = BL; 6-7=HL, 8=12=Post-HL) were calculated. Infant behavior and HR data were compared between groups and across events using repeated measures ANOVA.

RESULTS: During BL, HL and post-HL events, the upper and lower motor movements of Exposed infants were more jerky (p=.006), tense (p=.001), strained (p=.013) and tremulous (p=.000). There was a significant main effect of time on Infant mean HR (F (3) = 27, p=.000) with significant reduction in HR from epochs 5vs6, 6vs7, 7vs8, 8vs9 (p =.000, p=.024, p=.000, p=.006). Exposed infants had lower mean HR values (F (1, 16) = 14.388, p=.002) and they showed greater increase in HFP during epochs 8-12 suggesting a more rapid return of parasympathetic cardiac modulation.

CONCLUSIONS: Infant exposure to maternal prenatal depression may alter infant pain and stress responses. More studies with larger sized samples are needed to clarify complex pathways of association.

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A WEB-BASED INTERACTIVE INTERPROFESSIONAL PAIN CURRICULUM RESOURCE

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AIM: This study aims to develop and test an interprofessional, interactive web-based pain curriculum resource for pre-licensure students in health science faculties across Canada. Initial design was framed by dual considerations of pain content and educational cognitive psychology theory.

METHODS: Pain content and learning objectives were identified reflecting the needs of an interprofessional learning context. Three phases were identified for storyboard scaffolding and interactive scripting (pre-operative, post-operative and treatment to one year). Consultants for content, pedagogy and technology included oncology experts, Standardized Patient Program (Director, storyboard writer, videographer), Deteriorating Patient simulation model experts, and researchers in Education & Technology.

RESULTS: An authentic patient case was constructed situated in interprofessional complex care, from acute to persistent pain, to highlight learning objectives related to the three phases of pre-operative, post-operative and treatment up to one-year later for a surgical cancer patient. Key components of pain assessment, management, and relevant mechanisms were developed using simulation and cutting-edge virtual environment that are realistic, with an accessible platform; cost-effective and affordable. Five knowledge building scaffolds were used: (1) virtual patient video simulations, (2) contextualized evidence-based resources, (3) reflective exercises based on real world practice, (4) embedded and concurrent feedback, and (5) in-depth commentaries.

CONCLUSIONS: The architecture of the website has been designed primarily for individual use, with access to collaborative discourse and virtual learning components. Phase 1 prototype (preoperative) has been created and results of the pilot related to relevance, feasibility and fidelity with health science students, our multiprofessional consultants and patient representative will be presented.

FOOTNOTES/REFERENCES: Acknowledgements: Funding has been received from the CIHR-CAHR grant #86786.

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NMDA RECEPTOR ANTAGONIST BLOCKS NECK MUSCLE ACTIVITIES EVOKED BY DURAL STIMULATION IN THE RAT

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AIM: To test whether intrathecal (i.t.) application to the rat brainstem of APV, a NMDA receptor antagonist, blocks neck muscle electromyographic (EMG) activity evoked by mustard oil (MO) application to frontal dura (FD).

METHODS: In lightly anaesthetized (halothane, 0.6%) male rats, bilateral EMG activities of neck, peri-orbital, tongue (genioglossus) and jaw muscles were recorded at baseline for 30 minutes before and 30 minutes after application of mineral oil (MI, vehicle of MO; 0.2 µl) to the right FD, then 10 µl phosphate-buffered saline (PBS, as vehicle control) or APV (0.05 mM) was applied to the brainstem (i.t.) and 5 minutes later, MO (0.2 µl, 20%) was applied to FD. EMG activities of each muscle were analyzed by calculation of the normalized area under the curve (AUC).

RESULTS: Application of MO to FD after i.t. PBS caused a significant increase (paired t-test, $P<0.01$) in only ipsilateral neck muscle EMG activity (Mean ± SEM, AUC: 0.463±0.0711 µV* min, n=10; latency: 7.064 ±1.118s, duration: 141.086 ± 60.905s) compared with that immediately before MO application (0.171± 0.0158 µV* min). In the same rats, MI did not induce any significant changes ($P>0.05$) in EMG activities (0.177± 0.0104 µV* min, n=10). In rats receiving i.t. APV, the application of MO to FD did not cause any significant changes ($P>0.05$) in ipsilateral neck EMG activity (0.162 ± 0.048 µV* min, n=7).

CONCLUSIONS: These data suggest that noxious stimulation of FD causes a significant increase in ipsilateral neck muscle activity that is dependent on brainstem NMDA receptors.

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A SYSTEMATIC REVIEW OF LOW DOSE INTRAVENOUS KETAMINE FOR POSTOPERATIVE PAIN MANAGEMENT

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AIM: A systematic review of perioperative low-dose intravenous ketamine for pain management was done to delineate subgroups that benefit from ketamine and those for whom it is not helpful. Previous reviews have included all routes of administration and assumed a fixed-effects model. Heterogeneity between studies is significant and this was addressed by narrowing inclusion criteria, using a random effects model and performing subgroup analyses.

METHODS: In accordance with PRISMA guidelines, the review included high-quality studies that were randomized, double-blinded and placebo-controlled using low-dose intravenous ketamine (<0.5mg/kg bolus and <500mcg/kg/hr infusion) as the treatment group. Studies with regional anesthesia were excluded. No limitation was placed on patient age or language of publication.

RESULTS: Fifty-eight studies were analyzed. A reduction in total narcotic consumed and increase in time to first narcotic dose was observed ($p<0.001$). Despite using more narcotic, half of the placebo groups experienced more pain than the ketamine groups, implying an improved quality of pain control in addition to the decrease in narcotic consumption. This effect was sustained past 24 hours in one quarter of the studies, suggesting a longer term benefit. There was a trend towards a decrease in nausea and vomiting, pruritis and urinary retention at the expense of an increase in sedation with increasing size of ketamine doses. Hallucinations and nightmares were not increased by ketamine.

CONCLUSIONS: Intravenous low-dose ketamine is useful for postoperative pain, with particular benefit when added to PCA, and for painful procedures such as upper abdominal and thoracic surgeries.

P44

ANTI-NOCICEPTIVE AND ANTI-INFLAMMATORY ACTIVITIES OF THE HEXANE AND ETHYL ACETATE EXTRACTS OF CROTON MACROSTACHYUS STEM BARK IN RATS AND MICE

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AIM: The hexane and ethyl acetate extracts of the stem bark of Croton macrostachyus (family Euphorbiaceae) were investigated for possible anti-nociceptive and anti-inflammatory effects in mice and rats.

METHODS: Three models were used to study the extract's effects on nociception which were the acetic acid-induced abdominal constriction test, formalin test (both in mice) and the analgesy meter test in rats. The anti-inflammatory effects were investigated employing the carrageenan-, histamine-, serotonin-, and formalin-induced hind-paw oedema in rats.

RESULTS: Results of the study revealed the extracts to have significant ($P < 0.001$) anti-nociceptive effect at a dose of 600 mg/kg p.o. in mice and rats in all the models for anti-nociception while 300 mg/kg p.o. showed significant ($P < 0.001$) effect in the acetic acid-induced abdominal constriction test and in the formalin test. The two extracts also exhibited acute and chronic anti-inflammatory effects which were found to be significant ($P < 0.001$) at 600 mg/kg p.o. in the rats tested. Preliminary phytochemical screening of the extract showed the presence of alkaloids, terpenoids and phenolic compounds in the hexane extract, whereas the ethyl acetate extract showed the presence of flavonoids, terpenoids and phenolic compounds.

CONCLUSIONS: The results suggest the extract contains pharmacologically active principles. The result is in agreement with the local application of the plant in painful and inflammatory conditions.

P45

SURVEY OF KNOWLEDGE, ATTITUDES AND BEHAVIOURS AMONG ONTARIO PHYSIATRISTS REGARDING USE OF OPIOIDS FOR CHRONIC PAIN (MODERATED SESSION)

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AIM: We conducted an electronic survey among Ontario Physiatrists before the release of the Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain (CNCP). The goal of the survey was to determine physiatrists' knowledge, attitudes and behaviours regarding the use of opioids for CNCP.

METHODS: We contacted 142 Physiatrists by email and 35 completed the survey (25%). The majority had more than 10 years of experience (66%) and practiced in urban centres (89%). Only one Physiatrist had advanced training in pain management.

RESULTS: Of the 35 respondents, 9 (26%) did not prescribe opioids, 3 (9%) prescribed only weak opioids and 23 (65%) prescribed both weak and strong opioids. The main barriers for prescribing opioids were "too time consuming", "concerns with long-term adverse effects", and "type of practice that limits follow-up".

The majority assessed pain using a scale, assessed patient's level of function, and explained benefits and harms of long-term opioid therapy. Gaps included: lack of assessment of risk for addiction using a screening tool, underutilization of urine drug screens and signed treatment agreement, not attempting to taper benzodiazepines, and not giving the patient written information about opioid therapy.

The majority (78%) considered that patients might need to be reassessed or more closely monitored when taking a daily dose equal to or less than 100 mg of morphine equivalents.

CONCLUSIONS: Most respondents indicated the need for further education and additional resources in management of CNCP.

P46

TRANSDERMAL LIDOCAINE AND KETAMINE FOR NEUROPATHIC PAIN: A RETROSPECTIVE CHART REVIEW

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AIM: To evaluate the effectiveness and tolerability of a transdermal preparation of Lidocaine and Ketamine for the management of neuropathic pain.

METHODS: A retrospective chart review was performed to identify people with neuropathic pain who were given a prescription of a transdermal cream containing Lidocaine and Ketamine between May 30, 2007 and June 1, 2009 in an ambulatory setting at an university-affiliated rehabilitation centre. Descriptive and quantitative data analyses were performed. The effectiveness of the transdermal preparation was evaluated by the number of patients with improvement (n) divided by the total number of patients who received a prescription of the transdermal preparation (N).

RESULTS: A total of 854 patient charts were reviewed. Twenty-one patients with symptoms, signs, and/or a documented diagnosis of neuropathic pain and who had been given a prescription of a transdermal preparation containing Lidocaine and Ketamine were identified. Four groups of patients were identified: those with a clearly stated diagnosis of neuropathic pain who were prescribed a transdermal compound containing Lidocaine and Ketamine with follow-up (Group A) or without follow-up (Group B), and those with a suggested diagnosis of neuropathic pain with (Group C) or without follow-up (Group D). Effectiveness of the transdermal cream was seven out of eight (87%) for Group A and one out of three (33%) for Group C. In total, eight out of 11 patients (73%) benefited from a transdermal cream containing Lidocaine and Ketamine. Two patients experienced adverse skin reactions that led to discontinuation of the transdermal cream.

CONCLUSIONS: Transdermal cream containing Ketamine and Lidocaine was effective in 73% of patients with acute neuropathic pain and may be a good alternative to oral medications.

P47

AN AUDIT OF PAIN MANAGEMENT FOLLOWING PEDIATRIC DAY SURGERY AT BRITISH COLUMBIA CHILDREN'S HOSPITAL (BCCH)

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AIM: Pediatric day surgery offers benefits to child, family, and society over in-patient surgery. (1-2) However, day surgery imparts the responsibility of post-operative pain management to parents. Recent research demonstrated that parents administer insufficient doses of analgesia after day surgery even when significant pain is recognized. (3) Good post-operative pain control improves functional recovery (4) and long-term functional outcomes. (4) Poor pain control increases post-operative morbidity. (5) In a recent study conducted at British Columbia Children's Hospital (BCCH), 7% of patients spontaneously reported inadequate analgesia. (6) The aim of this audit was to determine the current status of pain management following day surgery at BCCH.

METHODS: This was a prospective study involving 225 parents/guardians of children aged 3 months to 17 years who had undergone elective day surgery at BCCH. After Research Ethics Board approval and obtaining parental informed consent, in-hospital data (demographics, procedure type, peri-operative administration of analgesia; local anesthetic technique received, pain ratings from nurses) was collected from patient charts. Families were contacted by telephone 48 hours post-discharge and administered a 15-variable partially-validated (8) questionnaire. The questionnaire solicited parental perceptions on the adequacy of discharge instructions received and pain levels experienced by the child during the first 48 hours of recovery. Parents were asked to report the types of analgesia administered at home, frequency of use, and their level of satisfaction and confidence with post-discharge pain management.

RESULTS: Figures 1 and 2 show incidence of significant pain by surgery. Otolaryngologic and orthopedic patients were more likely to experience significant pain at 24- and 48-hours post-discharge (p=0.05). Urologic patients were more likely to experience significant pain at 24-hours post-discharge (p=0.05).

A median of 3 doses (range 0-10) of analgesia were administered within the first 24 hours. Acetaminophen was the sole analgesic for 49.7% of patients. 20.2% received ibuprofen. 17.0% of parents received written instructions. The need for written instructions was a recurrent theme from open-ended comments by parents. Parents were very satisfied and confident with pain management at home.

Figure 1. Pain levels at 24-hours post-discharge, by surgery.

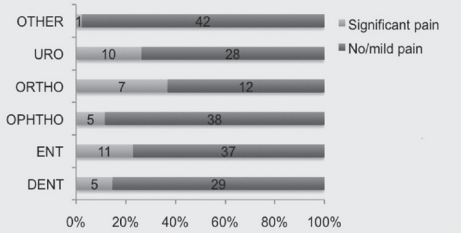
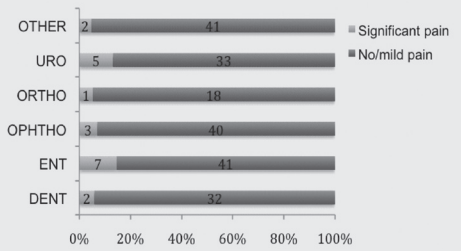


Figure 2. Pain levels at 48-hours post-discharge, by surgery.



DISCUSSION: Despite lack of written instruction, parents felt confident with pain management at home. In addition, parents in our sample administered more doses of analgesics than previously reported. Based on our results, pain management at home can be improved by exploiting the popularity of acetaminophen by increasing institutional dosing guidelines. Home use of ibuprofen should be increased where appropriate. Procedures resulting in higher incidence of significant pain should be targeted for re-audit at a larger sample size and consideration of standardized analgesia guidelines. Study limitations include a small, non-consecutive sample, possibility of practice and sampling biases, and pain ratings obtained from parents and not the children.

CONCLUSIONS: For the majority of patients, good post-operative pain control is achieved. However, improvements can be made through the development of standardized written instructions, review of analgesia guidelines for certain procedures, and increased dosing of acetaminophen and more frequent use of ibuprofen.

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