THURSDAY MAY 22, 2003
INTERDISCIPLINARY PAIN EDUCATION DAY

8:30 AM – KEYNOTE SPEAKER

UPDATE ON NEUROPATHIC PAIN

Gary Bennett PhD
McGill University, Faculty of Dentistry, Montreal, Quebec
Abstract is available as a handout

Brief description of session:
Painful peripheral neuropathies due to disease, trauma, and certain toxins represent a continued medical challenge. Recent work with animals models of post-traumatic neuropathy and neuropathy to chemotherapeutic drugs (e.g., paclitaxel and vincristine) have revealed several mechanisms that may account for the pathology. This presentation will review the evidence for a causative role for primary afferent nociceptors, central hypersensitivity, and for a neuroimmune interaction involving pro-inflammatory cytokines.

9:15 AM – PLENARY SESSION

PAIN MANAGEMENT: FROM THE BENCH TO THE BEDSIDE

Chair: Cynthia Struthers RN MScN ACNP
The Hospital for Sick Children
Speakers: Michael Salter MD PhD, Judy Watt-Watson RN PhD, Christine Chambers PhD

PLASTICITY OF NERVOUS SYSTEM

Michael Salter MD PhD
University of Toronto, Centre for the Study of Pain and The Hospital for Sick Children, Toronto, Ontario

PATIENT EXPECTATIONS AND PAIN MANAGEMENT

Judy Watt-Watson RN PhD
University of Toronto, Faculty of Nursing and Centre for the Study of Pain, Toronto, Ontario

Learning Objectives:
a. Patients' expectations and how these influence pain management
b. Clinicians' contributions to patients' satisfaction and beliefs related to pain
c. Strategies to help patients understand their rights and the need to modify some expectations

Unrelieved pain continues to be reported by patients in a variety of contexts including institutions and home settings. With acute pain, the most common reason people with same day surgeries have returned to hospital or been admitted has been pain. As well, chronic pain is a prevalent problem; 11 to 12% of Canadians 12-years and over have reported moderate to severe pain that interferes with their everyday activities. Inadequate pain relief is a silent epidemic that continues despite modalities that can help many patients. Research indicates that many people are satisfied with poor pain management and trust that their health professionals are doing everything possible to help them. This presentation will focus on how clinicians' problems with pain assessment and management are compounded further by patient expectations and beliefs about pain and its management. Strategies to help patients understand their rights and the need to modify some expectations will be discussed.

THE IMPACT OF PAIN ON THE FAMILY

Christine Chambers PhD
University of British Columbia, Department of Pediatrics and British Columbia's Children's Hospital, Department of Psychology, Vancouver, British Columbia

Learning Objectives:
a. Participants will be able to identify common tasks faced by families of children with chronic pain and be introduced to current research in this area

Family factors have long been recognized as influencing the development and maintenance of chronic pain in children. In contrast, only recently have researchers begun to consider the impact of chronic pain on the family. Although most chronic pain conditions are not life-threatening, for those children whose chronic pain is associated with no identified organic cause, the uncertainty regarding the etiology of the pain can be very distressing for families. This presentation will introduce tasks and challenges faced by the families of children with chronic pain conditions, including accepting the child's condition, managing the child's condition on a day-to-day basis, and meeting the developmental needs of other family members. This presentation will also review empirical findings regarding the impact of pediatric chronic pain on the family. Recent research indicates that mothers of adolescents with chronic pain report significant restrictions in their family's social life, family problems coping with the adolescent's pain, and personal strain as a result of their adolescents' pain and indicate that these family difficulties remain stable even after several years. Clinicians working with children with chronic pain should be attentive to the potential family burden associated with caring for a child with chronic pain.

11:15 AM – PLENARY SESSION

GIVING A VOICE TO PAIN: PATIENT PANEL

Chair: Patrick McGrath OC PhD FRSC
Killam Professor of Psychology, Professor of Pediatrics and Psychiatry, Canada Research Chair, Dalhousie University; Psychologist, IWK Health Centre, Halifax, Nova Scotia

Perspectives from across the life span from 3 persons living with chronic pain.

1:30 PM – SESSION 101

GENITAL PAIN SYNDROMES IN WOMEN

Chair: Allan Gordon MD FRCP(C)
Mount Sinai Hospital, Wasser Pain Management Centre and the University of Toronto, Toronto, Ontario
Speakers: Howard Glazer PhD, Ursula Wesselmann MD, PhD, Alan Watier MD, LMCC, FRCP

Educational Objectives of the Session:
Delegates will learn:

1. Participants will be able to identify, assess and treat pubococcygeal muscle surface electromyographic abnormalities with essential urogenital pain disorders
2. Participants will be able to identify and assess patients with chronic pelvic pain syndromes
3. The differential diagnosis of chronic non-malignant pelvic pain will be discussed
4. Participants will be able to achieve a meticulous and orderly method of examining a painful pelvic floor
5. Participants will see the interconnections between urogenital and perineal pain syndromes and pelvic pain

Summary of Session:
Urogenital, perineal and pelvic pain syndromes are all related. The session will demonstrate a variety of clinical and neurophysiologal approaches to the diagnosis, assessment and therapy of these conditions.

PELVIC FLOOR MUSCLE SURFACE ELECTROMYOGRAPHY IN THE DIAGNOSIS AND TREATMENT OF VULVOVAGINAL PAIN DISORDERS

Howard Glazer PhD
Clinical Associate Professor of Psychology in Psychiatry and in Obstetrics and Gynecology, Weill Medical College of Cornell University, New York, New York, USA

Learning Objectives:
a. Participants will be able to identify, assess and treat pubococcygeal muscle surface electromyographic abnormalities associated with essential urogenital pain disorders
This presentation discusses pelvic floor muscle anatomy and physiology and the use of intravaginal/intra-anal pubococcygeal muscle surface electromyography. Essential vulvovaginal pain syndromes such as vulvar vestibulitis syndrome and dysesthetic vulvodynia are conceptualized as a form of Chronic Regional Pain Syndrome in which localized striate muscle dysfunction perpetuates both nociceptive and neuropathic pain mechanisms. Pubococcygeal surface electromyography allows noninvasive measurement of motor unit action potential trains. Processing of this signal allows the collection of data related to electromyographic amplitudes, variability, recruit/recover times and power density spectral frequency analysis. A series of published studies are presented demonstrating that this electrophysiological data can reliably differentiate subsets of symptomatic patients from both each other and from asymptomatic controls, thus permitting the development of a diagnostic database. It is further demonstrated that the normalization of abnormal surface electromyographic readings in symptomatic patients produces significant and long lasting therapeutic benefit.

ASSESSMENT OF THE PELVIC PAIN PATIENT

Ursula Wesselmann MD PhD
Associate Professor of Neurology, Neurological Surgery and Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, Maryland, USA

Learning Objectives:
a. Participants will be able to identify and assess patients with chronic pelvic pain syndromes
b. The differential diagnosis of chronic non-malignant pelvic pain will be discussed
Chronic pelvic pain is a common and debilitating problem that can significantly impair the quality of life of a woman. Patients with chronic pelvic pain are usually evaluated and treated by gynecologists, gastroenterologists, urologists, and internists. Although these patients seek medical care because they are looking for help to alleviate their pelvic discomfort and pain, in many cases the only focus is on finding and possibly treating the underlying pelvic disease and these patients often undergo many diagnostic tests and procedures. However, often the examination and work-up remain unrevealing and no specific cause of the pain can be identified. In other cases pelvic pathology is found, however, the relationship to the extent of pain remains unclear. In these cases it is important to recognize that pain is not only a symptom of pelvic disease, but that the patient is suffering from a chronic pelvic pain syndrome, where "pain" is the prominent symptom of the chronic visceral pain syndrome. Knowledge of the clinical characteristics of visceral pain will guide the health care provider in making a diagnosis of chronic pelvic pain and in sorting it out from the lump diagnosis of idiopathic pain.
References:
Wesselmann, U., Guest Editorial: Pain - the neglected aspect of visceral disease. Eur. J. Pain, 3, 189-191, 1999
Wesselmann, U., Pain of pelvic origin. In: Pain 1999 - An Updated Review: Refresher Course Syllabus - International Association for the Study of Pain, Editor: M. Max, IASP Press, Seattle, pages 47-58, 1999.

PELVIC FLOOR ASSESSMENT FOR PERINEAL PAIN

Alan Watier MD, LMCC, FRCP Gastroenterologist
Directeur Unité de Pelvi-Périnéologie, Centre Hospitalier Universitaire de Sherbrooke
Learning Objectives:
a. Participants will be able to achieve a meticulous and orderly method of examining a painful pelvic floor.
The clinical examination of a painful pelvic floor may be a difficult task. A detailed pelvic examination is critically important in developing a comprehensive management plan for the suffering patient.
A 'unisystem' approach is also important, a compartmental approach must be avoided. Inspection is important. A complete neurological evaluation is a must. Observations must be done at rest, during a pelvic floor contraction, during a cough or even in the standing position. Observation of extraneous muscle activity is important.
Transvaginal and transrectal palpation permits evaluation of 'hypertonicity' muscle strength and painful regions. Identification of any type of prolapse is important.
Irritation of the pudendal nerve by different muscle groups must be searched for (pyriformis, obturator, psoas, levator ani, transverse muscle…). Refered pain patterns generated by trigger points must also be evaluated.

1:30 PM – SESSION 102

IMPROVING PAIN MANAGEMENT IN VULNERABLE POPULATIONS

Chair: Bonnie Stevens RN PhD
University of Toronto, Faculty of Nursing and The Hospital for Sick Children, Toronto, Ontario
Speakers: Sharyn Gibbins RN PhD, Ann Brignell RN, Lynn Breau PhD

Educational Objectives of the Session:
Delegates will learn:
1. About the most up-to-date methods for identifying and assessing pain in vulnerable populations, including human newborn infants, children and adults with severe cognitive impairment and the frail, elderly person.
2. What are the effective pharmacological, psychological and environmental interventions for alleviating pain in these vulnerable groups
3. About current research efforts to develop new assessment and management approaches to pain

Summary of Session:
Some of the most important challenges facing the pain community involve identifying, understanding and properly treating the many different pains experienced by vulnerable populations in our society. This symposium will highlight a number of such vulnerable groups: human neonates of various gestational ages; children and adults with severe cognitive impairment; and frail elderly persons in pain. Progress in effectively managing pain hinges on the ability to accurately and reliably identify when a person is in pain and assess the intensity and quality of the pain. A major focus of this session will be on presenting state-of-the-art assessment techniques and instruments for identifying and assessing pain in these especially vulnerable groups.

PAIN ASSESSMENT AND MANAGEMENT IN NEONATES

Sharyn Gibbins RN PhD
Sunnybrooke & Women's College Health Sciences Centre, Toronto, Ontario

Learning Objectives:
a. Participants will be able to identify, assess and manage pain in neonates of varying gestational ages.

There is a multitude of evidence for the existence of capability for pain in neonates. The issue of whether the potential for pain exists is no longer discussed among researchers, clinicians and parents. Rather, the measurement of pain, the implementation of safe and efficacious interventions to manage pain and the impact of pain on long-term outcomes for neonates who experience multiple painful procedures are the important research areas for study.

Despite the plethora of infant pain measures that have been developed, only a few have established psychometric properties. Without reliable, valid and clinically useful measures for pain in neonates, clinicians are left to interpret the physiological, behavioral and biochemical responses from neonates who may respond differently than neonates of older gestational ages.

Pain can be managed by pharmacological agents and/or environmental interventions. However, it is imperative to identify the cause and severity of the pain in order to intervene in the most safe and efficacious manner. Developmental differences in pharmacokinetics and pharmacodynamics must be understood when choosing specific agents for pain management in neonates.

This session will examine the difficulties in assessing pain in neonates and provide an overview of the pharmacological and environmental interventions for managing pain in this high-risk population.

RECOGNIZING AND ASSESSING PAIN IN THE FRAIL, ELDERLY AND NON-COGNIZANT PERSON

Ann Brignell RN
MOHLTC Palliative Care Initiatives, Palliative Pain and Symptom Management Consultant/Educator, Lambton County, Ontario

Learning Objectives:

a. Participants will have a heightened awareness of and be able to recognize how facial grimace and body language reflect the presence of pain in the frail elderly and non-cognizant person.

b. Participants will be able to assess, monitor and communicate the location, intensity, and quality of the pain and the effect that pain has on the activities of daily living of the frail elderly and non-cognizant person.

Recognizing the presence of pain/distress in the elderly and non-cognizant person is the first step to promoting quality of life for this population. Not identifying disturbing behaviour as a possible "red flag" related to discomfort is still one of the major barriers to assessing and managing pain. Understanding that physical pain is often reflected by a facial grimace and that acute or chronic pain changes behaviour, the care provider will screen for the presence of pain when these indicators are noted. The use of slides and overhead drawings of pain faces and behaviours provides a powerful visual impact for the participants. Accurate assessment is the cornerstone for pain management and tools specifically tailored to this population facilitate the timely implementation of interventions aimed at promoting comfort. Reassessment and monitoring the efficacy of interventions is vital to providing optimal pain management and quality of life. Clear communication among team members around the rational for interventions will promote continuity of care. Facial Grimace Scale and Behaviour Checklist tools and flow sheet along with a Communication Work Sheet are introduced.

PAIN ASSESSMENT IN CHILDREN WITH SEVERE COGNITIVE IMPAIRMENTS

Lynn Breau PhD
Postdoctoral Fellow, Pediatric Pain Research Lab and Psychologist (Candidate Register), Pediatric Pain Management Program, IWK Health Centre, Halifax, Nova Scotia

Learning Objectives:

a. Understand the nature and incidence of pain due to specific etiologies in this group of children.

b. Understand possible risk factors for specific pain etiologies.

c. Learn how to use the Non-communicating Children's Pain Checklist (NCCPC) to assess postoperative pain in children with severe cognitive impairments.

d. Be capable of instructing caregivers on use of the NCCPC for pain in the home setting.

e. Be aware of the relation between self-injury and pain behaviour in this population.

f. Be aware of the effect pain may have on children's development.

g. Learn of ongoing research to develop pain management strategies for this population.

From 35% to 52% of children with severe cognitive impairments experience pain each week; most due to medical conditions (82%). Specific child factors, such as age, gender, and level of physical impairment, may also increase risk for experiencing specific types of pain. Assessing this pain is possible using the Non-communicating Children's Pain Checklist (NCCPC), an observational tool that can be used by caregivers or healthcare professionals. The NCCPC has been validated for postoperative pain, and pain in the home setting, and cut-off scores are available. Although it has been reported that children with severe cognitive impairments and self-injurious behaviour have reduced pain sensitivity, research suggests they do not display less pain behaviour than children without self-injury when pain behaviour is assessed using the NCCPC. It also suggests the nature of their self-injury may be useful in pain assessment. Pain assessment is the foundation of good management and prevention of pain's negative effects. For children with severe cognitive impairments, these effects may be long-term, leading to fewer gains or even loss of motor, communication, and daily living skills. Ongoing research to detect areas of development most affected by pain and to develop better management strategies for their pain will be outlined.

1:30 PM – SESSION 103

CONTROVERSIES IN THE MEDICAL MANAGEMENT OF CHRONIC PAIN

Chair and Speaker: Colin McCartney MBChB, FRCA
University of Toronto, University Health Network, Department of Anesthesia and Pain Management, Toronto, Ontario
Speakers: Mary Lynch Md, FRCPC, Colin McCartney MBChB, FRCA, Doug Gourlay MD, FRCPC

Educational Objectives of the Session:

Delegates will learn:

1. Current controversies with the use of cannabinoids, interventional therapies and opioids in the management of chronic, non-malignant pain will be discussed. At the close of the session participants will be able to evaluate these therapies in order to optimize selection and facilitate their use in patient management.

Summary of Session:

Controversy surrounds the use of cannabinoids, injection therapies and opioids to relieve chronic non-malignant pain. However all three types of therapy have potential for benefit with minimal adverse effects in properly selected patients.

CANNABINOIDS AND PAIN, AN UPDATE

Mary Lynch MD FRCPC
Departments of Psychiatry, Anesthesia and Pharmacology, Dalhousie University, Halifax, Nova Scotia

Learning Objectives:

a. Participants will be able to identify and describe the endo-cannabinoid system.

b. Participants will be able to discuss the evidence supporting that cannabinoids exhibit analgesic effects in animal models of inflammatory and neuropathic pain.

c. Participants will be able to assess the current published literature regarding cannabinoids and analgesia in humans.

The endogenous cannabinoid system has been well described. Two cannabinoid receptors have been identified to date, although there is speculation that there are others. The CB1 receptor is essentially restricted to neurons and has been identified in brain, spinal cord, dorsal root ganglia and primary afferent neurons in key areas involved in the processing and

modulation of nociceptive information. CB2 receptor expression is essentially restricted to immune cell lines and probably mediates analgesic effects both during inflammation and through inhibition of nociceptor sensitization at peripheral sites. To date three endocannabinoids have been identified (anandamide, 2-arachidonylglycerol, and noladin) as well as a structurally related fatty acid amide palmitoylethanolamide all of which exhibit anti-nociceptive properties.

A large body of work has demonstrated that cannabinoids block pain responses in models of acute, inflammatory and neuropathic pain and are effective at multiple levels. Human work to date has demonstrated a moderate analgesic effect for orally administered THC and a synthetic nitrogen analog of THC. Survey studies completed in Canada cite pain as one of the most frequent reasons for using medical marijuana and reveal that 15% of patients presenting to a pain management unit have used and 10% continue to use marijuana for pain control.

CONTROVERSIES IN THE MEDICAL MANAGEMENT OF CHRONIC PAIN: INTERVENTIONAL THERAPY

Colin McCartney MBChB FRCA FFARCSI
Staff Anesthetist and Consultant in Pain Management, University Health Network and University of Toronto, Toronto, Ontario

Learning Objectives:

a. Current controversies with the use of interventional therapy will be discussed. Participants will be able to evaluate current controversies in order to facilitate selection and management of patients.

Interventional therapy for chronic pain management can be useful in selected patients and can both decrease pain and improve function in the short and long term. However unrestricted use of these techniques can be unhelpful at best, potentially exposes patients to adverse effects and may create dependency on the medical practitioner.

Interventional techniques can be divided into those having short-medium term effects and those with potential for long term effects such as implantable therapy. Examples of each will be presented with reference to selecting the type of patient who will gain maximum benefit with least adverse effects with these techniques. Controversies with current selection criteria will be discussed.

PAIN AND CHEMICAL DEPENDENCY

Doug Gourlay MD FRCPC
Mount Sinai Hospital, Medical Consultant, Wasser Pain Management Centre, Toronto, Ontario

Learning Objectives:

a. Understand the concept of a pain - addiction continuum

b. Define addiction, tolerance and dependence

c. Explore a "Universal Precautions" approach to pain management

The fields of pain management and addiction medicine have been complicated by an imprecise set of terms used to describe aberrant behavior associated with addictive disorders.

It has previously been stated that in the context of 'legitimate pain', the likelihood of a concurrent addictive disorder is so small as to not merit looking for. More recently, this has changed to state that in the absence of any past history of substance abuse, addiction in the pain patient is rare. This has led to an 'either or' approach to pain and addiction.

During this presentation, the concept of a pain - addiction continuum will be described. Participants will learn the difference between addiction, tolerance and dependence. The prevalence of addictive disorders in the general population will examined. Finally, a "universal precautions" approach to pain management will be outlined.

2:45 PM – SESSION 104

COMPLEMENTARY THERAPY

Chair: Ted Robinson MD CCFP FCFP
Outpatient Rehabilitation and Chronic Pain Management, St. John's Rehabilitation Hospital, Sunnybrook and Women's College Health Sciences Centre, Toronto Western Hospital and The Riverdale Hospital, Toronto, Ontario
Speakers: Linda Rapson MD CAFCI, Lawrence Sugarman MD ABMH

Educational Objectives of the Session:

Delegates will learn:

1. To discuss in general terms the neurophysiology of acupuncture as it relates to pain.
2. To identify indications for acupuncture in the management of acute and chronic pain.
3. To define and describe clinical hypnosis pertaining to pain management.
4. To provide examples of hypnotic strategies for managing acute and chronic pain.
5. To identify sources for professional education in clinical hypnosis.

Summary of the session:

Traditional Western Medicine has had mixed success in treating both acute and chronic pain. Other healing traditions have used a variety of different approaches for pain control. These approaches may be seen to complement traditional Western treatments, and in some cases they may provide more effective pain control than "orthodox" treatment.

In this session we consider two treatment approaches for pain management; both have been used for long periods of time. Only recently are they being embraced by Western Medicine as part of the armamentarium for addressing the complex issues of pain management. Today our speakers will provide a theoretical framework for the use of acupuncture and hypnosis, and address practical issues about their clinical applications.

ACUPUNCTURE FOR PAIN MANAGEMENT

Linda Rapson MD, CAFCI
Acupuncture Foundation of Canada Institute, Toronto, Ontario

Learning Objectives:

a. Discuss in general terms the neurophysiology of acupuncture as it relates to pain.

b. Identify indications for acupuncture in the management of acute and chronic pain.

In 1976 Professor Bruce Pomeranz at the University of Toronto presented the first evidence that acupuncture raises endogenous opioids, focusing scientific interest on this ancient traditional Chinese medicine. In the ensuing 26 years, knowledge about the response of various neurotransmitters to the insertion of thin solid needles at specific points on the body has grown exponentially. Acupuncture plays a role in pain management from the peripheral release of substance P and calcitonin gene-related peptide, which increase peripheral blood flow, to the central release of ACTH from the pituitary, as evidenced by the elevation of blood cortisol in response to needling.

Clinically, acupuncture is used for a wide range of conditions, including many internal medicine dysfunctions. It appears to produce many of its effects by promoting homeostasis, the modern explanation for the balancing of Yin and Yang.

Pain of various etiologies, both acute and chronic, can be well and safely managed with acupuncture. Often the response is immediate or begins after a few treatments and the effects become cumulative and lasting. Acupuncture's capacity to balance the autonomic nervous system allows one to treat conditions usually considered difficult to manage.

This session will provide a practical look at the potential benefits of acupuncture for painful conditions.

CHANGING PAIN WITH HYPNOSIS

Laurence I Sugarman MD FAAP ABMH
Private Practice in Pediatrics, Clinical Assistant Professor in Pediatrics, University of Rochester, Rochester, New York, USA

Learning Objectives:

a. Define and describe clinical hypnosis pertaining to pain management.
b. Provide examples of hypnotic strategies for managing acute and chronic pain.
c. Identify sources for professional education in clinical hypnosis.

Clinical hypnosis is the oldest intervention for pain management. With elucidation of the psychophysiology of pain comes growing interest in refining hypnotic strategies that help patients regulate painful experiences. Hypnosis allows patients to modify pain by intensifying concentration and responsiveness to therapeutic suggestions. Research supports that hypnosis is not a placebo effect, alters maladaptive conditioned responses, decreases reliance on medication and shortens postoperative hospitalization. There are intriguing directions for research in this field. When integrating hypnosis into pain therapy, it is critical that clinicians foster self-efficacy and mastery by employing patient-centered language and choices. Authoritarian, directive techniques for symptom removal are less effective, increase risks for abreaction and do not promote self-regulation. Professionals using clinical hypnosis need to learn a repertoire of styles in order to flexibly adapt methods to their patient's age, developmental level, imaginative ability and learning style. Therefore, qualified health care providers learning hypnosis are strongly urged to participate in a program of ongoing professional training.

2:45 PM – SESSION 105

PAIN - THE COMMUNITY VIEW

Chair: Larry Librach MD CCFP FCFP
Mount Sinai Hospital, The Temmy Latner Centre for Palliative Care and Sunnybrook and Women's College Health Sciences Centre, Palliative Care and University of Toronto, Toronto, Ontario
Speakers: Howard Hamer MD FCFP, Doris Howell RN MScN, Robert Shepherd PhD CPsych

Educational Objectives of the Session:

Delegates will learn:

1. About the complexities of managing the patient with chronic pain in a community setting.
2. The importance of structured pain assessment and best practice guidelines in this setting.
3. Strategies for enhancing communication among the patients' various care-givers.
4. To identify and overcome specific barriers to effective pain management in community practice.

Summary of Session:

Management of the chronic pain patient in a community setting is associated with a set of unique challenges that are not encountered in specialty multidisciplinary pain centers. This symposium addresses these challenges from three perspectives including that of a community physician, a community nurse and a psychologist working in a rural community setting.

CHALLENGES OF MANAGING THE PATIENT WITH CHRONIC PAIN DISORDER IN PRIMARY CARE

Howard Hamer MD FCFP MSc(A) CCBOM
Occupational and Family Medicine, Toronto, Ontario

Learning Objectives:

a. Delineate the complexities of the chronic pain disorder patient.
b. Recognition of the early warning signs for diagnosis.
c. Understanding the management of this patient.

In conjunction with other primary care providers, Dr. Hamer will demonstrate the complexity of managing a chronic pain suffer in the family doctor's office. This will be accomplished through a case presentation. Participants will be exposed to the specific challenges faced by a solo practitioner when confronted by a patient with chronic pain disorder. The participant will come away with an approach to identify the early warning signs of this diagnosis and the strategies foe management of this challenging condition.

THE NURSING PERSPECTIVE

Doris Howell RN MScN
Consultant in Oncology and Palliative Care, Lisle, Ontario

Learning Objectives:

a. Identify the need for structured pain assessment and best practice guidelines in the community.
b. Adopt strategies for communicating with family and physician colleagues to promote effective pain treatment.

This presentation will examine the challenges of pain assessment in the community and management issues such as access to appropriate expertise, lack of structure and continuity in pain assessment and treatment and family misconceptions and fears. Strategies for promoting assessment and effective communication with physician colleagues and family members in the treatment of pain and in setting realistic goals for pain relief will be discussed.

PSYCHOLOGY AND THE TREATMENT OF PAIN IN OUR COMMUNITIES: GETTING IN TOUCH WITH REALITY

Robert Shepherd PhD CPsych
Clinical Psychologist, Private Practice, Seaforth, Ontario

Learning Objectives:

a. Participants will be able to identify specific barriers to effective pain management in community practice, learn how knowledge of these barriers can enhance clinical efficacy, and apply these concepts to patient treatment.

Real life issues in pain management present community practitioners and pain specialists with many challenges. These include dealing with an overburdened health care system, contending with weak treatment effects, resolving conflicting interests, addressing poor patient compliance, respecting the need for professional accountability, and resisting an emphasis on manualized therapies and medication protocols over more ecologically valid interventions.

These challenges are explored within the context of real life psychological practice in a rural community setting. Using case examples and group trends from a broad range of pain patients, several solutions are explored, many of which are simple yet easily overlooked in daily clinical practice. Recommendations are offered for addressing pain in community settings, with an emphasis on practical suggestions to enhance effective and compassionate treatment – a goal that often eludes both generalists and pain specialists.

2:45 PM – SESSION 106

PAIN ASSESSMENT / SELF REPORT ISSUES

Chair: Celeste Johnston RN DEd CPS President
McGill University, School of Nursing, Montreal, Quebec
Speakers: Carl L von Baeyer PhD Rpsych,
Thomas Hadjistavropoulos PhD, David Warr MD FRCPC

Educational Objectives of the Session:

Delegates will learn:

1. Become familiar with specialized procedures that are suitable for the assessment of pain among persons with cognitive impairments.
2. Learn to select, administer, and interpret three or more self-report measures of pain intensity that are suitable for young children.
3. Learn to list two pieces of evidence supporting the contention that accurate assessment of pain requires an explicit evaluation of pain intensity by the patient.

4. Learn to list three pitfalls that may occur during assessment of the patient with cancer pain.

Summary of Session:
The importance of accurate pain assessment cannot be overstated. This is true regardless of the nature of the pain problem (acute or chronic, nociceptive, neuropathic or cancer-related), or the age or cognitive status of the patient. Without reliable and valid methods of assessing pain, effective pain management is not possible. This symposium will highlight the importance of accurate pain assessment among three especially vulnerable populations: persons with severe cognitive impairments; young children; and patients with cancer-related pain. Pain assessment instruments developed specifically for use with these patient populations will be presented along with their advantages and limitations.

MEASUREMENT OF CHILDREN'S PAIN INTENSITY BY SELF-REPORT: METHODS AND INTERPRETATION

Carl L von Baeyer PhD RPsych
Professor of Psychology, Associate Member in Pediatrics, Director of Clinical Psychology Training, University of Saskatchewan, Saskatoon, Saskatchewan

Learning Objectives:
a. Participants will be able to select, administer, and interpret three or more self-report measures of pain intensity that are suitable for young children.
Topics:

- Measurement of pain intensity as a necessary oversimplification
- Cognitive capacities required for self-report measurement of pain intensity
- Desirable characteristics of self-report scales for young children
- Selected scales: faces, poker chip, drawing, numerical, visual analogue
- Effects of scale selection and scale anchors on pain scores
- Role of observational measures in complementing self-report
- Interpretation and application of self-report scores

Reference will be made to websites providing free online resources for pain assessment, including:

- Children's Pain Assessment Project: www.ich.ucl.ac.uk/cpap/
- Pediatric Pain Sourcebook: www.painsourcebook.ca

METHODS FOR ASSESSING PAIN AMONG PERSONS WITH COGNITIVE IMPAIRMENTS

Thomas Hadjistavropoulos PhD RPsych
Department of Psychology and Centre on Aging and Health, University of Regina, Regina, Saskatchewan

Learning Objectives:
a. Participants will become familiar with specialized procedures that are suitable for the assessment of pain among persons with cognitive impairments.
Clinicians often fail to identify pain among persons with severe cognitive impairments because such patients have serious limitations in their ability to communicate distress. Assessment of pain in this population can be conceptualized using a communications model of pain that construes the complex pattern of response to tissue injury as varying in reflexive automaticity and cognitive executive mediation. The self-report of pain tends to be reliant on higher mental processes. In contrast, nonverbal pain behaviours tend to be more automatic and thus, are more suitable targets for pain assessment among persons with severe cognitive impairments. In this presentation, specialized observational instruments, developed specifically for the assessment of pain among persons with severe cognitive impairments, will be reviewed. Moreover, certain self-report procedures that have been found to be valid with individuals who have mild to moderate cognitive impairments will also be discussed.

THE PITFALLS OF PATIENT SELF REPORT OF CANCER PAIN

David Warr MD FRCPC
Department of Medical Oncology and Hematology, Princess Margaret Hospital, Toronto, Ontario

Learning Objectives:
a. State two pieces of evidence supporting the contention that accurate assessment of pain requires an explicit evaluation of pain intensity by the patient.
b. List three pitfalls that may occur during assessment of the patient with cancer pain.
Simultaneous ratings of cancer pain by patients and oncologists demonstrate that one cannot assume that patients with advanced cancer will spontaneously describe the intensity of their pain. Data also suggest that family members may be inaccurate surrogates. An explicit pain history from the patient is the only way to obtain information that is accurate.
Although diaries for recording pain severity are sometimes advocated for ambulatory patients, their utility outside of clinical trials is unproven and they are unlikely to enhance pain management. Formal questionnaires may be useful probes especially in areas that may be usually given insufficient attention in a busy clinic, e.g., evaluation for presence of depression. Experience at the Princess Margaret Hospital suggests that short lists of questions are well accepted but lengthy questionnaires may dramatically increase the refusal rate especially in those with severe pain.
The critical elements of the history in the patient with refractory pain sometimes require a skilled historian. Anecdotally, several pitfalls have been identified in histories from patients referred to a cancer pain management clinic.

- The descriptors "throbbing" or "sharp" often are used to indicate that a pain is severe as opposed to pulsatile or knife-like respectively.
- The extent (dominant versus minor) of neuropathic pain is often not appreciated.
- The location, quality and severity of the pain may change substantially over time without mention by the patient.
- Although opioid misuse is rare, it is challenging for many oncology professionals to identify (both false positives and false negatives).

4:00 PM – KEYNOTE SPEAKER

PAIN AND eLEARNING: MAINTAINING COMPETENCE IN THE INFORMATION AGE

Alejandro (Alex) R Jadad MD DPil FRCPC
Director, Centre for Global eHealth Innovations, CIHR Chair in eHealth Innovation and Rose Family Chair in Supportive Care, Professor, Departments of Health Policy, Management and Evaluation, and Anesthesia, University Health Network and University of Toronto, Toronto, Ontario

Keeping up with existing and new knowledge around pain management is not an easy task. Because of the speed with which knowledge is growing and the limited availability of time, innovative strategies are required to ensure that clinicians, researchers, policy makers, patients and other consumers can benefit from the information that could best guide their decisions.
With the advent of the Internet and the increase in power of information and communication technologies (ICTs), there is optimism about the ability of technology to lead to effective learning with efficient use of resources. To date, however, most efforts to use technology to promote learning (eLearning) have failed to meet this promise.
In this presentation, I will discuss opportunities for the Internet and other ICTs to help learners achieve high levels of competence, optimal performance, improvement in health outcomes and efficient resource utilization around the management of pain.

8:30 AM – KEYNOTE SPEAKER

HARNESSING THE OPPOSING EFFECTS OF TWO DIFFERENT TYPES OF CORTICAL REORGANIZATION AS A BASIS FOR NEW TREATMENTS FOR CHRONIC CONDITIONS

Edward Taub PhD
University of Alabama at Birmingham, Department of Psychology, Birmingham, Alabama, USA

There appear to be two general types of plastic brain reorganization processes. Injury-related cortical reorganization involves a decrease of afferent input to portions of the nervous system. After deafferentation or amputation of a body part there is an "invasion" of the cortical representation zone of the affected body part by adjacent cortical zones representing intact portions of the body; after stroke there is a contraction of the cortical representation zone of an affected arm. Injury-related cortical reorganization is often associated with consequences that are adverse for the individual, such as phantom limb pain, tinnitus, and decreased use of a limb after stroke. In contrast, use-dependent cortical reorganization follows increased use of a body part in behaviorally relevant tasks and involves increased afferent input and an expansion of cortical representation zones. It is usually associated with consequences that are advantageous to the individual, such as skill acquisition. The idea behind the experiments to be reported is that perhaps a therapy which greatly increases use of an underused residual limb after amputation or of an unused or underused extremity after stroke can have the effect of counteracting injury-related cortical reorganization and its adverse consequences. Examples of this approach will be given involving the reduction of phantom limb pain through use of a functional prosthesis and of "learned nonuse" after stroke by the administration of CI therapy.

10:00 AM – PLENARY SESSION

E-HEALTH, TECHNOLOGY AND PAIN

Chair: David Goldstein MSc MBBcH FRCPC
Speakers: Alejandro (Alex) R Jadad MD DPhil FRCPC, Kevin J Leonard MBA PhD CMA, Patrick McGrath OC PhD FRSC

Kingston General Hospital, Department of Anesthesiology and Queens University, Faculty of Health Sciences, Kingston, Ontario

Educational Objectives of the Session:
Delegates will learn:

1. About upcoming developments in information and communications technologies (ICTs) that are likely to affect the way in which people communicate and relate to each other.
2. About the opportunities and threats associated with the use of the Internet as a means of communicating for the purpose of managing pain.
3. To identify the barriers that hinder the use of the Internet and other ICTs in promoting communication between patients and providers.
4. To identify and understand the relationship between healthcare's movement to electronic patient records and the subsequent evolution of patients managing their own care (including pain management).
5. About web based interventions, kiosks for pain in doctors' offices and other forms of pain-based information technology that can revolutionize access to care for many patients.

Summary of Session:
One of the most exciting and promising avenues of pain research involves the confluence of information technology, electronic health and the personal computer. With few exceptions, specialized pain centres are accessible only to pain patients who live in large, urban centres with university-based teaching hospitals. The majority of patients with chronic pain do not ever see a pain expert. Internet access offers the promise of making pain information, assessment and intervention accessible to people living in under-serviced regions and to those with disabilities that make commuting difficult. This symposium brings together leading experts in electronic health and pain. Presentations will focus on the advantages and disadvantages of electronic patient records, using the Internet for health related matters, web-based pain management interventions and other forms of pain-based information technology.

TO E OR NOT TO E: EXAMINING THE POSSIBILITIES AND PERILS OF COMMUNICATION

Alejandro (Alex) R Jadad MD DPhil, FRCPC
Director, Centre for Global eHealth Innovations, CIHR Chair in eHealth Innovation and Rose Family Chair in Supportive Care, Professor, Departments of Health Policy, Management and Evaluation, and Anesthesia, University Health Network and University of Toronto, Toronto, Ontario

Most patients in Canada have access to the Internet and would like to use it to communicate with health professionals. Are we ready for this?
In this session, I will:

- Highlight recent and upcoming developments in information and communications technologies (ICTs) that are likely to affect the way in which people communicate and relate to each other.
- Describe the opportunities and threats associated with the use of the Internet as a means of communication during the management of pain.
- Illustrate the most important barriers that are hindering the use of the Internet and other ICTs to promote communication between patients and providers, and possible strategies to overcome them.

THE ELECTRONIC HEALTH RECORD: A PRESCRIPTION FOR PATIENCE

Kevin J Leonard MBA PhD CMA
Associate Professor, Department of HPME, Faculty of Medicine, University of Toronto, Research Scientist, Centre for Global eHealth Innovation, University Health Network, Toronto, Ontario

Learning Objectives:
a. Learn to identify and understand the relationship between healthcare's movement to electronic patient records and the subsequent evolution of patients managing their own care (including pain management).
With the current prevalence of electronic patient records (EPR) and the escalating use of the Internet, many believe that, ultimately, patients and physicians will soon be able to access electronic patient medical records. Further, we believe that patients, once exposed to the benefits of the EPR, will be one of the strongest advocates for change – and will work with their healthcare providers to overcome the drawbacks in order to access the benefits. From a patient perspective some of the direct benefits are:

- Availability when clinicians are busy or absent.
- Customized instruction.
- Patient privacy and avoidance of embarrassment.
- Apt use of feedback and reinforcement.
- Precise documentation of the learning processes and outcome.
- Improved health outcomes due to patients more actively managing their care.

The objective of this talk is to document patient needs and preferences pertaining to the design and layout of an electronic patient record. Based on our findings and incorporating literature from other areas of computer systems design, we identify the critical success factors pertaining to electronic patient record development and implementation.

TECHNOLOGY TO IMPROVE ACCESS TO CARE

Patrick McGrath OC PhD FRSC
Killam Professor of Psychology, Professor of Pediatrics and Psychiatry, Canada Research Chair, Dalhousie University; Psychologist, IWK Health Centre, Halifax, Nova Scotia

Information technology has transformed much of our lives. Our cars, our telephone systems, even our clothes dryers have imbedded computers that obtain, analyse and distribute information. However, the impact of the computer revolution on health care has been very spotty. We have the benefits of CAT scans and functional MRI. Thousands of lab tests are done every day using sophisticated technology. At the front line, most of health care delivery has not changed much in the last hundred years. For example in pain management, a health care professional or team sits with a patient and asks questions, observes them, pokes and prods them (physically and psychologically) comes up with a diagnosis and then a treatment plan. In the tertiary care centres, treatment includes medicine taken by the patient and physiotherapy and psychotherapy delivered individually or in groups in tertiary care health centres. Chronic pain clinics frequently have waiting lists that are a year or two long. Only a small percentage of serious chronic pain sufferers ever see a pain expert. Information technology holds the promise to revolutionize access to care and bring sophisticated multidisciplinary care to many more. Examples of web based interventions, kiosks for pain in doctors' offices and other forms of how this could happen will be presented and discussed.

11:30 AM – STUDENT PRESENTATIONS

HOT TOPICS IN PAIN RESEARCH

ATTRIBUTION OF INFANT PAIN: A COMPARATIVE ANALYSIS OF PARENT, NURSE AND PHYSICIAN PERSPECTIVES

Presenter: Rebecca Pillai Riddell MA
Authors: Rebecca Pillai Riddell MA, KD Craig PhD

AIM: With the growing recognition that pain is present and important during infancy, questions are slowly shifting to more detailed analyses of how infants experience pain and how best to assess and manage infant pain. The latter depends upon how responsible adults perceive infant pain. The current research project examined, under controlled conditions, how different groups of caregivers (parent, nurse, and pediatrician) make attributions of pain to infants.

METHODS: Separate samples of parents (n=49), nurses (n=50) and pediatricians (n=32) were recruited from the community to participate in a video judgement study. Every judge viewed infants belonging to each of five age categories: 2 months, 4, months, 6, months, 12 months and 18 months. They were subsequently asked to provide sensory and affective pain judgments for each infant.

RESULTS: The preliminary analyses conducted were two 3 by 5 between-within ANOVAs on both the VAS and affective ratings. The VAS analyses indicated that each sample attributed similar levels of pain across the five age groups of infants but that between the samples significant differences were found. Tukey follow-up analyses indicated that nurses and pediatricians did not differ in their pain attributions of the infants nor did nurses and parents. However pediatricans attributed significantly less pain to infants than did parents. The affective analyses found inverse results in that significant differences within the 5 age groups were found but not between the samples. It appears that all samples attributed significantly less affective distress to the older infants.

CONCLUSIONS: This series of studies marks the first time infant pain attributions have been quantitatively analysed and compared over three different caregiver populations. Differences within and between the samples were found on both the sensory-intensity and emotional-affective measures of infant pain. This demonstrates that pain attributions differ across caregiver samples and infant ages, suggesting one must be cautious about generalizing research findings regarding pain assessment between populations of caregivers and infants.

THE ROLE OF SEROTONIN IN CHRONIC PAIN FOLLOWING SPINAL CORD INJURY: POSSIBLE INVOLVEMENT OF THE 5-HT_3 RECEPTOR

Presenter: Mark Oatway BSc
Authors: MA Oatway BSc, JC Bruce MSc, Y Chen BSc, LC Weaver DVM, PhD

INTRODUCTION: Chronic pain is a prevalent secondary consequence following spinal cord injury. An observed threefold increase of serotonergic fiber immunoreactivity in cord segments rostral to the injury site may be pro-nociceptive, contributing to this chronic pain. We determined effects of an anti-inflammatory strategy on serotonergic sprouting and tactile allodynia. Early intraspinal infiltration of leukocytes was blocked by an antibody to the $\alpha D\beta 2$ integrin. In different experiments, effects of acute 5-HT_3 receptor blockade/stimulation on tactile allodynia were assessed to determine this receptor's role in mediating the pro-nociceptive action of serotonin.

METHODS: The anti-$\alpha D\beta 2$ antibody was administered intravenously at 2, 24 and 48 hours following clip-compression injury of the 13th thoracic spinal segment. A second group received the 5-HT_3 receptor agonist, m-CPBG or the antagonist, ondansetron, intrathecally at five weeks following injury. Tactile allodynia was assessed on the trunk and hindpaws using calibrated von Frey filaments.

RESULTS: The anti-$\alpha D\beta 2$ antibody treatment significantly attenuated tactile allodynia at 2-4 weeks after injury. A significant decrease in serotonergic fibers rostral to injury was observed, accompanied by an increase of serotonergic sprouting caudal to injury. Intrathecal ondansetron reduced the presence of allodynic behaviours while m-CPBG had no effect.

CONCLUSIONS: (1) Serotonin may be involved in the tactile allodynia associated with spinal cord injury, (2) An anti-inflammatory antibody against the $\alpha D\beta 2$ integrin reduces serotonergic fiber sprouting rostral to injury and the subsequent tactile allodynia, (3) The pro-nociceptive action of serotonin following spinal cord injury may be due to actions at the 5-HT_3 receptor.

Support: Ontario Neurotrauma Foundation

NMDA RECEPTOR ANTAGONIST APPLICATION TO RATTMJ ATTENUATES CAPS/SAICIN-EVOKED JAW MUSCLE ACTIVITY

Presenter: David Lam DDS
Authors: BJ Sessle BDS MDS PhD, BE Cairns PhD, JW Hu PhD

AIM: We have previously shown peripheral N-methyl-D-aspartate (NMDA) receptor mechanisms are involved in nociceptive reflex responses of jaw muscles to mustard oil or glutamate injection into the temporomandibular joint (TMJ). In this study, we explored whether NMDA receptor mechanisms are also involved in nociceptive reflex responses evoked by the algesic chemical capsaicin (CAP).

METHODS: The effects of the non-competitive NMDA antagonist, MK-801, were tested on the CAP-evoked increases in electromyographic (EMG) activities of digastric (DIG) and masseter (MASS) muscles in 24 halothane-anesthetized male rats. Five minutes (min) prior to CAP (1.0%, 10 µL) injection into the TMJ, MK-801 (0.001, 0.01 or 0.1M) or vehicle control (isotonic saline) was administered (10 µL; n=6 per group) locally into the TMJ. Baseline EMG activity was recorded before and after both injections. The area under the EMG response curve (AUC) was calculated by summation of area bins (min) greater than 2 times the standard deviation of the mean baseline (20 min).

RESULTS: Compared with baseline EMG activity, CAP injection following pre-injection of vehicle evoked significant increases in EMG activity in both DIG and MASS muscles. Pre-injection of MK-801 resulted in a significant dose-dependent reduction in the incidence and magnitude of CAP-evoked DIG and MASS EMG responses (ANOVA-on-ranks, $P<0.05$).

CONCLUSION: Jaw muscle reflex activities evoked by CAP injection into the TMJ can be attenuated by TMJ pre-injection of an NMDA receptor antagonist. These findings suggest that the activation of peripheral NMDA receptors is important in the mechanisms whereby CAP evokes nociceptive trigeminal responses. Supported by CIHR MOP-43905.

1:30 PM – SESSION 107

PRIMARY AFFERENT PHYSIOLOGY

Chair: Michael Salter MD PhD
University of Toronto Centre foro the Study of Pain and the Hospital for Sick Children, Toronto, Ontario
Speakers: Philippe Séguéla PhD, Michael Costigan MD PhD, Michael Caterina MD PhD

ATP-GATED AND PROTON-GATED RECEPTOR-CHANNELS IN PRIMARY AFFERENTS

Philippe Séguéla PhD
Montreall Neurological Institute, Department of Neurology and Neurosurgery, McGill University, Montreal, Quebec

Learning Objectives :
a. Participants will be able to assess the role of 2 classes of receptor-channels in peripheral nociception.
Inflammation, trauma and tumors generate pain because they trigger the release of a cocktail of pain-inducing compounds such as ATP and H^+ ions in peripheral tissues. Knowledge of the molecular basis of nociception significantly increased when two gene families of neuronal receptor-channels activated by extracellular ATP (P2X receptors) or acidic pH (acid-sensing ion channels, ASICs) were identified by our group and others, and found to be expressed in primary afferents in rodents and humans.
ATP-gated P2X receptors are trimeric non-selective cation channels with high permeability to calcium ions. Recent converging pharmacological and genetic evidence support a role for sensory-specific P2X3 and P2X2+3 receptor subtypes in inflammatory and visceral pain. Proton-gated ASICs are tetrameric sodium-selective channels sensitive to the antagonist amiloride. While most ASIC subunits are also expressed in brain and spinal cord, ASIC3-containing proton receptors display an exclusive localization in subpopulations of small- to large-diameter primary sensory neurons where, according to gene knockout experiments, they contribute to responses to tissue acidosis and/or to mechanoreception. Therefore, investigation of the native composition and exact roles of sensory subtypes of P2X ATP receptors and ASICs might reveal new avenues in the treatment of peripheral pain.

THE APPLICATION OF MICROARRAYS TO SEARCH FOR NEW PAIN MECHANISMS

Michael Costigan MD PhD
Massachusetts General Hospital, Department of Anesthesiology and Critical Care and Harvard Medical School, Charleston, Massachusetts, USA

Learning Objectives:
a. Participants will be able to understand how microarrays can be utilized to obtain gene regulation data and use this data to identify molecular mechanisms in chronic pain.
Neuropathic pain is a chronic hypersensitive pain state resulting from damage to or malfunction of the nervous system. Modified sensory processing in primary sensory and spinal cord neurons contribute to this hypersensitivity. Altered gene expression, a feature of neuronal damage likely underlies much of this abnormal sensory processing. Oligonucleotide microarrays provide the capacity to analyze parallel changes in many thousands of genes. We have studied alterations in gene expression in the dorsal root ganglia and the spinal cord dorsal horn produced by the Spared Nerve Injury (SNI), Spinal Nerve Ligation (SNL) and Chronic Constriction Injury (CCI) models of neuropathic pain as well as after a complete transection of the sciatic nerve. Results show both common and distinct mechanisms present with each type of nerve injury. Comparison of these neuropathic changes with genes regulated in CFA-induced inflammatory pain offer many new insights into the molecular mechanisms of chronic pain.

MOLECULAR BASIS OF HEAT TRANSDUCTION

Michael Caterina MD PhD
Department of Biological Chemistry and Neuroscience, Johns Hopkins University School of Medicine, Baltimore, Maryland, USA

Learning Objective:
a. Participants will be able to understand current thinking regarding the molecular mechanisms of temperature sensation by TRPV family members.
The sensations of painful and nonpainful heat rely upon specialized neurons in the peripheral nervous system that continuously monitor their physical and chemical environments. Until recently, however, the molecules underlying the initial steps in thermo-transduction were not known. The identification of the capsaicin receptor (VR1/TRPV1) as a heat-gated ion channel expressed in small-diameter nociceptive neurons has provided considerable insight into heat-evoked pain mechanisms and has permitted the subsequent identification of a family of ion channel proteins gated by elevated temperatures. TRPV2, which is expressed in medium-diameter, myelinated sensory neurons, is gated by very hot temperatures (>52°C). TRPV3 and TRPV4, in contrast, are gated by relatively warm temperatures (>33°C). Surprisingly, the most prominent expression of these latter two channels within the skin is not in sensory neurons, but in keratinocytes. Studies of recombinant channels of the TRPV family, along with the analysis of knockout mice lacking these proteins, has begun to provide a rather complex picture of how mammals detect heat. In addition, the fact that many of these channels can alternatively be activated by nonthermal stimuli means that they may underlie a variety of sensory processes throughout the body.

1:30 PM – SESSION 108

PAIN, SEX AND GENDER

Chair: Lucia Gagliese PhD
York University, School of Kinesiology and Health Science, University Health Network and University of Toronto, Department ofo Anesthesia, Toronto, Ontario
Speakers: Roger Fillingim PhD, Karen Berkley PhD, Linda LeResche ScD

Educational Objectives of the Session:
Delegates will learn:
1. Define the major epidemiologic measures of disease (prevalence, incidence, duration) and the relationships among these measures.
2. List the important issues to be considered in applying epidemiologic methods to the study of gender differences in pain.
3. Recognize patterns of pain prevalence by age and gender and identify factors that may contribute to the observed age-sex differences in the prevalence of specific pain conditions
4. Describe the nature of gender differences in the experience of both clinical and experimentally-induced pain
5. Identify biological and psychosocial factors that contribute to gender differences in pain responses.
6. Consider how they might address sex and gender issues in their research and their diagnosis and treatment of pain

Summary of Session:
Epidemiologic and clinical studies show that pain and its consequences differentially affect men and women. The prevalence of most chronic pain conditions is greater in women. In addition, the burden of pain is greater, more varied and more variable for women than men. This symposium will bring together experts in the study of pain, sex and gender to explore some of the most exciting issues in the epidemiologic, clinical, and human and animal laboratory research in this area. The focus will be on understanding the complex ways in which biological, psychological and social factors contribute to the observed differences between the sexes in pain experience and response.

SEX, GENDER, AND PAIN: THE BIOPSYCHOSOCIAL MODEL IN ACTION

Roger Fillingim PhD
University of Florida College of Dentistry and Gainsville VA Medical Centre, Gainsville, Florida, USA

Learning Objectives:

a. Participants will be able to describe the nature of gender differences in the experience of both clinical and experimentally-induced pain.

b. Participants will be able to identify biological and psychosocial factors that contribute to gender differences in pain responses.

c. Participants will be able to apply information regarding gender differences in pain to the clinical setting to enhance pain management in women and men.

Summary of Session:

Several converging lines of evidence suggest that sex and gender represent important variables in pain research. Epidemiologic, clinical, and laboratory research clearly document the obvious: women and men are different. However, the nature and determinants of sex differences in the experience of pain continue to be debated. In considering the nature of sex differences in pain responses, I will review primarily findings from human laboratory research. In addition, I will briefly discuss findings regarding sex differences in analgesic responses. To examine the mechanisms underlying sex and gender differences in pain, the biopsychosocial model will be adopted, which proposes that sex and gender differences in pain responses inevitably result from complex interactions among biological, psychosocial, and sociocultural variables. Evidence demonstrating important contributions of biological and psychosocial factors to sex differences in pain will be discussed. Lastly, the clinical relevance of sex and gender related influences on pain will be discussed. For example, results suggesting sex differences in pain treatment outcomes may have important implications for treatment tailoring. Encouragingly, issues related to sex, gender and pain are receiving increased attention in both the scientific community and the general public. It is now incumbent upon us as pain scientists and clinicians to elucidate the complex nature of sex and gender differences in pain responses. Ultimately, greater knowledge of sex and gender-related influences on pain will inform clinical practice and enhance outcomes for patients suffering from pain.

EPIDEMIOLOGY OF SEX DIFFERENCES IN PAIN

Linda LeResche ScD
Research Professor, University of Washington, Department of Oral Medicine, Seattle, Washington, USA

Learning Objectives:

a. Participants will be able to define the major epidemiologic measures of disease (prevalence, incidence, duration) and the relationships among these measures.

b. Participants will be able to list the important issues to be considered in applying epidemiologic methods to the study of gender differences in pain.

c. Participants will be able to recognize patterns of pain prevalence by age and gender and identify factors that may contribute to the observed age-sex differences in the prevalence of specific pain conditions.

Epidemiology is the study of the distribution, determinants and natural history of disease in populations. Epidemiologic data on the gender and age distributions of chronic/recurrent pain problems can provide clues concerning risk factors for the onset and maintenance of pain. Most chronic/recurrent pain conditions are more prevalent in adult women than in men. However, the age-specific pattern of gender differences varies across pain conditions, and reliable data are not always available concerning when in development gender differences in pain prevalence begin. In an epidemiologic study of 3101 adolescents (11-17 years old) we identified prevalent cases of headache, back, stomach and temporomandibular disorder pain and assessed the associations of gender, age, pubertal development, somatic symptoms and psychosocial factors with each of these pain conditions. All four pain conditions were more prevalent in females than in males and female predominance generally increased with age. Although the strength of association for specific risk factors varied by pain condition, both biological maturity and psychosocial factors appear to contribute to the higher prevalence in older adolescent girls. These patterns in adults and adolescents suggest that both generic factors (e.g., gender role) and factors specific to particular pain conditions may influence rates of pain by gender.

MECHANISMS OF SEX AND GENDER[1] DIFFERENCES IN PAIN AND THEIR CLINICAL IMPLICATIONS

Karen Berkley PhD
Program in Neuroscience, Florida State University, Talahassee, Florida

Learning Objective:

a. Participants will be able to consider how they might address sex and gender issues in their research and their diagnosis and treatment of pain.

Epidemiological, psychophysical, and disease-prevalence studies reveal that the pain burden is greater, more varied and more variable for women than men. Genetic, physiological, hormonal, neural, and cultural research suggests that all these factors interact throughout an individual's lifespan to provide women with a wider array than men of both sex- and gender-related mechanisms to reduce pain. Despite their increased vulnerability and mechanisms, recent studies indicate that sociocultural gender processes conspire so that women appear less well treated than men for their pain.

The clinical implications of these findings are significant for both sexes, testifying to the importance of continued aggressive experimental investigations of sex and gender factors underlying pain and its treatment. Although we appear able now to form some general conclusions on basic mechanisms and clinical strategies, are we ready yet to make recommendations for diagnosis and treatment of individual patients in pain based simply on whether that individual is female or male? Given that sex and gender characteristics comprise only one of many other interacting factors that influence not only how pain develops and changes through an individual's unique lifespan, but also how that individual's pain is assessed and treated by others, will we ever be?

[1]In a recent report from the Institute of Medicine, of the US National Academy of Sciences, the word "sex" has been defined as "the classification of living things, generally as male or female according to their reproductive organs and functions assigned by chromosomal complement," whereas "gender" has been defined as "a person's self-representation as male or female, or how that person is responded to by social institutions based on the individual's gender presentation." (Wizemann TM, Pardue M-L (eds). Exploring the Biological Contributions to Human Health. Does Sex Matter? National Academy Press, Washington DC, 2001.)

1:30 PM – SESSION 109

THE HIDDEN COSTS OF UNRELIEVED PAIN ACROSS THE LIFESPAN

Chair and Speaker: Patricia McGrath PhD
Chronic Pain Program, Hospital for Sick Children, Toronto, Ontario
Speakers: Christine Chambers PhD, Jean-Paul Collet MD, PhD
Educational Objectives of the Session:

Delegates will learn:

1. The main psychological, emotional, psychosocial and economic costs associated with unrelieved pain.
2. How to evaluate and modify the situational factors that affect children and adults with unrelieved pain so as to lessen their emotional distress and disability.
3. About approaches for involving in treatment the family and friends of the person in pain.

Summary of Session:

The biological, psychological, social and economics costs of unrelieved pain are enormous. Pain accounts for billions of dollars annually in direct health care costs and even more when one includes indirect costs due to lost productivity and compensation. The cost of pain in terms of human suffering and misery is equally enormous. Prolonged pain impairs quality of life, demands constant attention, drains the individual and family of vital

energy. This symposium will explore some of the less obvious costs of unrelieved pain, including the impact of pain on development and biological processes; effects of pain on family and friends; the economic costs of pain and the associated use of health care resources.

PSYCHOLOGICAL AND EMOTIONAL COSTS OF UNRELIEVED PEDIATRIC PAIN

Patricia McGrath PhD
Chronic Pain Program, Hospital for Sick Children, Department of Anaesthesia, University of Toronto, Toronto, Ontario

Learning Objectives:
a. Participants will be able to identify the main psychological and emotional costs associated with unrelieved pain for children, families, and health care providers.
b. Participants will learn how to evaluate and modify the situational factors that affect children with unrelieved pain, so as to lessen their emotional distress and disability.

Unrelieved pain is very costly – both from a personal suffering perspective and from an economic perspective. Studies have documented the profound and long-lasting impact of inadequately treated acute pain, particularly for infants. In addition to prolonged suffering, untreated acute pain impedes wound healing, increases pain sensitivity, prolongs hospitalization, increases morbidity and alters development. Studies of children with inadequately treated chronic pain reveal a host of pain and disability associated psychological, social, and emotional adverse effects. Chronic pain is often complex with multiple sources, comprised of nociceptive and neuropathic components. In addition, several situational factors usually contribute to children's pain, distress, and disability. Children and families endure increased stress as they search for the right treatment, usually consulting with myriad health providers and trying multiple therapies (including complementary and alternative therapies). Children experience increased disability reflected in disrupted social activities, increased school absenteeism, and isolation from peers. Children are at risk for increasing anxiety and depression, particularly if they do not understand the complex causes and contributing factors for their pain. In addition, the costs of untreated pain may be high for health care providers – as evidenced by increased discomfort, anxiety, conflicts among staff, distancing from the child with pain or gradual indifference.

COSTS TO FAMILY AND FRIENDS OF UNRELIEVED PAIN

Christine Chambers PhD
University of British Columbia, Department of Pediatrics and British Columbia's Children Hospital, Department of Psychology, Vancouver, British Columbia

Learning Objectives:
a. Participants will be able to identify the impact of chronic pain on family and friends and be introduced to approaches for involving these individuals in treatment for chronic pain.

Unrelieved pain has deleterious effects not only on the suffering individual, but also on their families and friends. This presentation will review current knowledge regarding the impact of adult chronic pain on their spouses, children, and peers. Given the tendency for chronic pain conditions to aggregate in families, children of adults with chronic pain may represent a particularly at-risk group for developing pain and other difficulties. The results from a recent study examining the impact of parental chronic headaches on their children's health will be presented. Participants were 53 parents who met criteria for either tension-type or migraine headache with either high (n=24) or low (n=29) levels of pain-related disability and 23 pain-free parents and their 8- to 15-year-old children. Results from interviews with families regarding the children's behavioural and emotional adjustment and physical health using standardized measures will be presented. The impact of chronic pain on the peer relationships of adult and pediatric patients is an area that has received little research attention, although there is some evidence of negative effects such as decreased leisure time spent with peers. Approaches to minimizing the impact of chronic pain on family and friends by involving them directly in treatment will be introduced.

THE ECONOMIC IMPACT OF UNRELIEVED PAIN AFTER SURGERY: CONSEQUENCES ON USE OF HEALTH RESOURCES, QUALITY OF LIFE AND ACTIVITY OF DAILY LIVING

Presenter: Jean-Paul Collet MD PhD
McGill University, Department of Epidemiology and Biostatistics, Montreal, Quebec
Authors: Jean-Paul Collet, Jennifer Cogan, Ana Velly, Manon Choinière, Carinen Bellera, Vania Costa, Ann Robinson
McGill University, Center for Clinical Epidemiology and Community Studies, Jewish General Hospital, Montreal, Quebec

Learning Objectives:
a. Participants will be able to understand the important impact of Pain after surgery on activity of daily living (ADL), quality of life (QOL), anxiety and depression and use of health care resources.

Pain after surgery (both acute and chronic), has numerous and serious consequences on both patients and society. We illustrate this point using data from a recent study conducted in Quebec, the POPMan study (Post-Operative Pain Management).

In hospital use of resources to control pain are numerous but relatively inexpensive compared to surgery related costs. Regarding use of resources at home, most patients (73%) leave the hospital with a prescription to control pain. During follow-up 70 to 90% of patients with pain use pain medications and 25 to 50% of them (at different times) use other techniques such as acupuncture (60 to 80%), massage (5 to 10%) and herbs (1to 4%). Finally 10 to 15% of patients contact a physician because of pain. Therefore, at home, pain is responsible for significant direct and indirect costs.

Pain after surgery has also important consequences on patients' lives (intangible costs) with: significant decrease of QOL, severe limitation of ADL and occurrence of depression and anxiety.

Conclusion: Presence of pain after surgery is responsible for important direct and indirect costs and to negatively affect QOL and ADL. The presentation will stress the paramount importance to control pain after surgery.

Acknowledgements: The POPMan study was supported by Pfizer Inc, Pharmacia Corporation and the Canadian Institute of Health Research (CIHR) through a grant administered by CIHR.

1:30 PM – SESSION 110

REGULATORS AND OPIOIDS - SAFEGUARD OR BARRIER TO OPTIMUM PAIN MANAGEMENT?

Chair: Roman Jovey MD
Physician Director, Alcohol and Drug Treatment Program, Credit Valley Hospital, Mississauga, Ontario

Learning Objectives:
a. Update their knowledge on existing evidence and guidelines regarding the use of opioids for chronic pain.
b. Understand some of the potential regulatory barriers to pain management.
c. Understand the dual role of the College of Physicians and Surgeons in ensuring quality medical care while minimizing the misuse of prescribed opioids.
d. Discuss possible future regulatory initiatives to improve the availability and quality of chronic pain management in Canada.

Background and Summary of Session:
The use of long-term opioid therapy is becoming increasingly accepted among pain clinicians as a valuable treatment option for Chronic Non-Cancer Pain (CNCP). However, growing evidence in the form of randomized controlled trials and supportive guidelines published by expert organizations have not been sufficient to bring about significant change in physicians' prescribing practices. One of the commonly stated reasons for this situation has been "fear of the College".

Using the available literature, published guidelines and the collective experience of the attendees, this workshop will explore and discuss some of

the perceived regulatory barriers to more optimum use of opioids in pain management, such as: the lack of a professional / ethical imperative to treat pain in College guidelines; the lack of a requirement for institutional accountability for pain management by Canadian accreditation bodies; the use of triplicate prescribing programs in some provinces; a possible "knowledge gap" among some regulators as demonstrated by the published American data and the special regulations around the prescribing of methadone for pain.

The barriers to pain management created by medical regulators are balanced by their mandate to ensure quality care and to protect the public from inappropriate prescribing and the misuse of controlled substances. Some case vignettes illustrating "red flags" for questionable prescribing practices will be presented to facilitate discussion of good prescribing practices. Some tools to simplify the documentation process for patients on opioids will be provided to attendees.

Finally, the possibility of future regulatory changes, to improve the availability and quality of pain management for Canadians will be discussed. One example, is the requirement in California for mandatory medical education in pain management for all physicians by 2006.

4:00 PM – SESSION 111

UROGENITAL PAIN

Chair: Irv Binik PhD
McGill University, Department of Psychology, Montreal, Quebec
Speakers: Ursula Wesselman MD, Caroline Pukal BA, Maurice Bensignor MD

Educational Objectives of the Session:
Delegates will learn:

1. Identify and assess pudendal neuralgia among chronic perineal pain syndromes.
2. Describe the pain characteristics of vulvar vestibulitis syndrome, and
3. Identify objective and subjective measurement tools used for genital pain assessment.
4. Identify and assess patients with interstitial cystitis.
5. Identify the characteristics of chronic visceral pain.

Summary of Session:
Pain of urogenital pain origin affects a significant proportion of the population and yet only recently has progress been made into identifying its pathophysiology and psychosocial consequences. This symposium will focus specifically on the pain of vulvar vestibulitis, interstitial cystitis, and other painful conditions involving the pudendal nerves. The speakers will present novel approaches to the definition, diagnosis, classification, assessment and treatment of these urogenital pain conditions.

THE PAIN OF INTERSTITIAL CYSTITIS

Ursula Wesselman MD, PhD
Associate Professor of Neurology, Neurological Surgery and Biomedical Engineering, Johns Hopkins University, School of Medicine, Baltimore, Maryland, USA

Learning Objectives:
a. Participants will be able to identify and assess patients with interstitial cystitis.
b. The characteristics of chronic visceral pain will be discussed.

Interstitial cystitis (IC) has remained an unresolved problem in clinical urology. IC is characterized by pelvic/perineal pain and urinary frequency and urgency, and shares many features with other chronic non-malignant visceral pain syndromes. In clinical practice much emphasis has been placed on finding a specific etiology and specific pathological markers for the disease and on identifying specific events that precipitated IC. This conceptualization has influenced clinical treatment approaches for IC and has not resulted in significant progress in this area so far. An additional approach is suggested, based on the conceptualization of the hypotheses (1) that IC is a chronic visceral pain syndrome and (2) that a spectrum of different insults can lead to chronic pain in patients suffering from IC. This concept is likely to lead to new insights into the pathophysiological mechanisms of IC and to novel treatment avenues for patients suffering from IC and – in a broader view – also for patients with other chronic visceral pain syndromes.

PAIN MEASUREMENT IN WOMEN WITH VULVAR VESTIBULITIS SYNDROME

Presenter: Caroline Pukall BA PhD Candidate
McGill University, Department of Psychology, Montreal, Quebec
Authors: Caroline F Pukall BA PhD Candidate[1], Yitzchak M Binik PhD[1,2], Samir Khalifé MD[3], Rhonda Amsel MA[1], Alina Kao BA PhD Candidate[1]
[1]Department of Psychology, McGill University, Montreal, Quebec; [2]Sex and Couple Therapy Service, Department of Psychology, McGill University Health Center (Royal Victoria Hospital), Montreal, Quebec; [3]Departments of Obstetrics and Gynecology, McGill University and Jewish General Hospital, Montreal, Quebec

Learning Objectives:
a. Describe the pain characteristics of vulvar vestibulitis syndrome.
b. Identify objective and subjective measurement tools used for genital pain assessment.

Aim: Vulvar vestibulitis syndrome (VVS) is a common form of painful intercourse in pre-menopausal women, affecting 12% of the population. Although recent research has focused on the pain characteristics of this condition, there has been a paucity of measurement tools for careful genital pain assessment.

Methods: Two pain measurement devices were developed to measure tactile and pain thresholds in the genital region of women with VVS and matched controls: modified von Frey filaments and a vulvalgesiometer. Pain intensity and unpleasantness ratings, and adjectives used to describe the elicited sensations were recorded.

Results: With the filaments, women with VVS had significantly lower genital and non-genital tactile detection and pain thresholds as compared with matched controls. The most common adjectives chosen in response to painful stimulation were pricking and pinching. The vulvalgesiometer indicated that women with VVS had lower pain thresholds than controls, and women with VVS chose adjectives, such as burning and cutting, to describe the painful stimulation. Women in both conditions rated pain unpleasantness as higher than controls.

Conclusions: These genital pain measurement tools can yield highly useful data for research and may aid in diagnosis and classification of women with different vulvar pain syndromes.

NERVE BLOCKS AND SURGERY IN PUDENDAL NEURALGIA

Presenter: Maurice Bensignor MD
Clinique Viaud, Nantes, France
Authors: Maurice Bensignor, Jean-Jacques Labat, Roger Robert
Anaesthesiology, Clinique Viaud 40 rue Fontaine de Barbin 44000 Nantes, France; Neurosurgery, Hotel Dieu, 44093 Nantes Cedex 1, France

Learning Objectives:
a. Participants will be able to identify and assess pudendal neuralgia among chronic perineal pain syndromes.

Burning pain extending to the vulva, vagina, scrotum or to the anorectal region, worsened sitting and relieved standing or lying, evoke an involvement of pudendal nerves. Perineal examination is normal. Pressure on ischial spine or internous obturator muscle reveals tenderness. Electrophysiology may give more information. Anatomical and surgical studies suggested many patients may present with pudendal nerve entrapment. Improvement may be obtained from steroid blocks in the sacrospinous ligament or in the Alcock's canal. Among patients transiently improved by local anesthetic blocks who had no benefit from steroids, a few carefully selected ones may be referred for surgery. More than 400 patients had pudendal neurolysis and transposition. They were assessed one year or more after surgery: 44% considered being completely

or almost completely relieved, 23% were substantially improved, 33% had no benefit. None was aggravated. A prospective randomized controlled study demonstrated that decompression and transposition of the pudendal nerve is a safe and effective treatment for patients with intractable pudendal neuralgia refractory to other treatments.

4:00 PM – SESSION 112

POLITICS, POLICIES AND PAIN

Chair and Speaker: Mary Ellen Jeans RN PhD
Speakers TBA

Learning Objectives:
a. Participants will identify barriers and opportunities to influencing political and policy agendas in the Canadian context.
b. Participants will identify and apply strategies to increase the visibility of pain as a priority issue.
The relationship between and among these three terms can be dynamic, iterative and complex. Three speakers will address these complexities with the objective of increasing our knowledge and understanding of the process of elevating the visibility of pain as an issue that should influence politicians and policy makers. Getting the problem of pain onto the top priorities list of governments and policy based organizations is an ongoing challenge. In the USA this current decade has been named the Decade of Pain Control and Research. It is anticipated that funding will be targeted to increase the volume of research, education and clinical innovations in pain. How might we achieve this level of national support in Canada?
The speakers in this session will present some preliminary ideas to advance the pain agenda and will dialogue with one another and the audience to propose strategies to move forward. These strategies may be applicable to local, provincial and national initiatives. Examples of successful strategies will be provided.

4:00 PM – SESSION 113

THE ROLE OF CHOLECYSTOKININ ANTAGONISTS IN CLINICAL PAIN MANAGEMENT

Chair and Speaker: Gary McCleane MD
Rampark Pain Centre, Lurgan, Northern Ireland, UK
Speakers: Todd Vanderah PhD, Gary McCleane MD

Learning Objectives:
a. To assist participants to understand the role of cholecystokinin as an anti-opioid peptide, what factors produce elevations in its concentrations and how currently available cholecystokinin receptor antagonists may enhance the analgesic efficacy of opioids and prevent opioid tolerance.
The peptide cholecystokinin (CCK), originally thought to be present only in the gastrointestinal tract is now known to coexist in the central nervous system. It is now firmly established that CCK has an anti-opioid effect. Endogenous levels of CCK are increased by neural injury and chronic opioid administration. The consistent finding from murine and rodent pain models is that administration of a CCK antagonist enhances the antinociceptive effects of opioids. Furthermore, CCK antagonists may prevent the establishment of antinociceptive tolerance and even reverse established tolerance.
Human studies have now shown that CCK antagonists can be safely administered with strong opioids. Side effects from their use are infrequent. Proglumide, and mixed CCK A and B antagonist has been shown to have a pro-analgesic effect when used with morphine in human experimental, postoperative and chronic pain models. Recent studies have shown that Proglumide may enhance the analgesic effect of dihydrocodeine and even to have an intrinsic analgesic effect when used alone. It is still unclear whether specific CCK A or B antagonists have the most pro-analgesic effect when used with opioids in humans. To date the issue of analgesic tolerance has not been studied in humans.

CHOLECYSTOKININ, ITS RECEPTORS AND ANTAGONISTS: THE PRE-CLINICAL EVIDENCE

Todd Vanderah PhD
University of Arizona, Tuscan, Arizona, USA

Aim: To outline the neurobiology and pharmacology of cholecystokinin and explain the mode of action of the CCK antagonists.
Method: Presentation of the results obtained from laboratory animal experimentation.
Discussion: It is known that the peptide cholecystokinin (CCK) exists in two forms, A and B. In murine and rodent models, CCK B is predominantly represented in the central nervous system; conversely, in primates CCK A has a greater CNS representation.
Levels of CCK are elevated in those animals who suffer a neural injury and exhibit the signs of neuropathic pain. Those that suffer a similar injury but lack these signs do not have elevated CCK levels. When analgesia is obtained using an opioid, it is significantly reduced by the co-administration of CCK. If a CCK antagonist is administered, both the quality and duration of analgesia are increased.
When an opioid is continually administered, analgesic tolerance develops. The onset of tolerance is slowed down when a CCK antagonist is administered, and in animals with evidence of established analgesic tolerance, CCK antagonists can reverse this established tolerance.
Conclusion: Substantial evidence exists for a pivotal role of cholecystokinin in opioid derived analgesia. Furthermore, the laboratory data would suggest that CCK antagonists should augment opioid derived analgesia in the human subject with the additional potential benefit of reducing the onset of analgesic tolerance.

CLINICAL APPLICATION OF CHOLECYSTOKININ ANTAGONISTS

Gary McCleane MD
Rampark Pain Centre, Lurgan, Northern Ireland, United Kingdom

Aim: to examine the human evidence of a pro-analgesic effect of a variety of CCK antagonists, including those active predominately on the CCK A and CCK B receptors along with mixed A & B receptor antagonists.
Method: A description of the currently published human trials with the CCK antagonists Proglumide, L365,260 and Devokade.
Discussion: Partial efficacy and tolerance to morphine in patients with neuropathic pain limits its use. These problems may well be multifactorial, but it seems that at least in part they are linked to CCK. The animal pain models suggest that the levels of this peptide increase after neural injury and with chronic opioid administration. Elevated levels reduce the analgesic effect of opioids, and reversal of these elevated levels produces improved pain relief with the opioid.
In human practice evidence is accruing for a pro-analgesic effect of the mixed CCK A & B antagonist Proglumide along with a suggestion of a similar effect with the specific CCK A antagonist Devokade. Contrary to the rat and murine evidence , the CCK B antagonist L365,260 seems not to posses this pro-analgesic effect in the human subject.
Further evidence now exists that CCK antagonists may augment the analgesic effect of the tricyclic antidepressant drugs.
Side effects associated with the use of CCK antagonists in humans are infrequent and usually mild.
Conclusion: the animal evidence of a pro-analgesic effect of a variety of CCK antagonists has been confirmed in the case of the A and a mixed antagonist, but not in the case of the specific B antagonist.

4:00 PM – SESSION 114

RECOGNIZING AND ADDRESSING MANAGEMENT RESISTANT BELIEFS, ORIENTATIONS, AND ATTITUDES IN CHRONIC PAIN PATIENTS, PATIENT, PRACTITIONER, AND TREATMENT TEAM PERSPECTIVES

Chair and Speaker: Ken Reesor PhD, CPsych
Reesor Pigeon, Ottawa, Ontario
Speakers: Tamra Ricci PhD CPsych, Deb Thompson PhD CPsych

Learning Objectives:
a. Participants will be able to identify and assess clinically relevant chronic pain patient experiences and provide intervention to address pain management-incompatible beliefs, orientations, or attitudes in individual treatment and as part of comprehensive multidisciplinary pain management and rehabilitation.

Research has revealed how beliefs, thoughts, attitudes and other cognitions impact on the management, treatment, experience, outcome, and disability in chronic pain. Three perspectives on pain management-resistant beliefs, attitudes, and orientations are addressed. First, the patient's perspective and their unique experience in the context of chronic pain is addressed. This perspective is especially important to the assessment and treatment process when we consider that the definition of pain is a subjective experience. Secondly, from the practitioner's perspective, working in a counselling, educational, or psychological intervention capacity with chronic pain clients can be rewarding, but is often fraught with challenges. We address practical solutions to common difficulties which arise when engaging clients in the process of adaptation to pain and associated lifestyle changes, with a particular emphasis on transforming thoughts, attitudes, beliefs and behaviors. Finally, since attitudes and beliefs play such a central role in chronic pain adaptation and outcome to intervention, and given the necessity of treating teams to address chronic pain, it is incumbent that those who treat the non-psychological dimensions of pain are aware of the role of patient cognitions and are able to provide communication, education, or interventions that shape adaptive cognitive activity. Approaches to modifying beliefs may work more efficiently in the context of multidisciplinary or transdisciplinary functioning, hence the importance of the treating team's perspective. Having a consistent "team intervention approach" that adopts effective transdisciplinary orientations so can optimize the way that maladaptive thoughts, beliefs or expectations are addressed in order to assist their patients in addressing these barriers to optimal pain management. Clinical case examples will be utilized throughout to illustrate and demonstrate the learning objectives.

THE PATIENT'S PERSPECTIVE
Tamra Ricci PhD, CPsych
Reesor Pigeon, Ottawa, Ontario

THE PRACTITIONER'S PERSPECTIVE
Deb Thompson PhD, CPsych
Private Practice, Kingston, Ontario

THE TEAM'S PERSPECTIVE
Ken Reesor PhD, CPsych
Reesor Pigeon, Ottawa, Ontario

7:55 AM – KEYNOTE SPEAKER

FOREBRAIN MECHANISMS OF PAIN AND ANALGESIA

Catherine Bushnell PhD
2002 Distinguished Career Award Recipient, McGill University, Anesthesia Research Unit, Montreal, Quebec

Learning Objectives:
a. To discuss current knowledge and future challenges about higher-order brain mechanisms underlying the normal and aberrant pain processing and analgesia.

Forebrain processing of the complex experience of pain involves a network of sensory and limbic regions. Pain processing in the brain is dynamic; it is continually modified by psychological and environmental factors and sometimes permanently altered by dysfunctions within afferent pain pathways and/or pain modulatory systems. This lecture will discuss data from human psychophysical and brain imaging studies and provide an overview of forebrain mechanisms of pain perception, discuss psychological modulation of pain, and examine forebrain involvement in pathological pain states.

8:45 AM – PLENARY SESSION

PAIN AND GENETICS

Chair: Angela Mailis-Gagnon MD MSc FRCPC (PhysMed)
Toronto Western Hospital and Krembil Neuroscience Centre, Comprehensive Pain Program, Toronto, Ontario
Speakers: Jeffrey Mogil PhD, Michael Salter MD PhD, Ze'ev Seltzer DMD

FINDING PAIN GENES: FROM MICE TO MOLECULES

Jeffrey S Mogil PhD
EP Taylor Professor of Pain Studies, Department of Psychology, McGill University, Montreal, Quebec

Learning Objectives:
a. Participants will be given an appreciation as to the sources of variability in the clinical presentation of pain states, and will be updated as to known and potential genes involved in producing such variability.

Genetic approaches attempt to explain variability in biological systems, and pain is associated with much variability, including in the propensity to develop painful pathologies. We are performing extensive studies of the sensitivity of inbred mice to basal nociception and hypersensitivity after injury. Published and new data reveal clusters of genetically-correlated nociceptive measures, indicative of pain "types" sharing common genetic mediation. We have also now assessed the sensitivity of inbred strains to multiple analgesic classes, including opioid, non-opioid, and non-steroidal anti-inflammatory drugs. Recent and ongoing gene mapping efforts are identifying the chromosomal locations of genes underlying the considerable variability noted in these traits. Finally, we are making considerable progress in identifying the genes responsible, and in identifying the environmental factors with which they interact. Together, these efforts may lead to novel clinical treatments for pain and/or facilitate the patient-centered, individualized treatment of pain using current pharmaceuticals.

THE DREAM GENE

Michael Salter MD PhD
University of Toronto Centre for the Study of Pain, and the Hospital for Sick Children, Toronto, Ontario

We have recently discovered that DREAM, downstream regulatory element antagonistic modulator, a calcium-binding transcriptional repressor, is involved in modulating pain. Mice engineered to lack the DREAM gene, dream-/- mice, displayed markedly reduced responses in models of acute and chronic pain. In contrast, dream-/- mice showed no major deficits in tests of motor function or learning and memory. We have also found that in the dream -/- mice pain behaviours are reduced because of de-repressed expression and enhanced release of the opioid peptide, dynorphin, in the spinal cord dorsal horn. One of the major undesirable side effects of strong opioids such as morphine is development of tolerance and/or addiction. We tested for this in the dream-/- mice and found no evidence for tolerance or addiction to endogenous dynorphin. Thus, targeting DREAM clinically may produce analgesia without major deleterious side effects of opioids.

HOW CAN WE USE COMPARATIVE GENOMICS TO IDENTIFY GENES FOR CHRONIC PAIN?

Presenter: Ze'ev Seltzer DMD
University of Toronto Centre for the Study of Pain, Toronto, Ontario
Authors: Ruslan Dorfman, Ilya Sabsovich, Edith Gershon, Ze'ev Seltzer, Faculty of Dentistry,Toronto, Ontario

There is about 80% homology in the genes of mammals, suggesting that the same pain gene may play a similar role across different mammalian species. The following application shows that this homology may provide methodological advantages when searching for pain genes. We recently identified a quantitative trait locus (QTL) on mouse chromosome (chr) 15 that has a major effect on chronic pain levels in the Neuroma model. Near this QTL are about 10 good candidate pain genes. However, the confidence interval provided by our previous report spans a region too large for identification of the gene at play by direct sequencing. Since some of these candidate genes "correspond" to human chr 8 and others to chr 22, we now carry out a segregation analysis between several polymorphic genetic markers in these human chromosomal regions and levels of phantom limb pain, in a sample of chronic pain patients. The same approach, to be applied in the rat, can additionally refine the mouse pain gene map. Once identified in humans, mice lines with a knock-out or a knock-in of the pain gene, or antisense-treated wild type mice, may further assist us in determining the role played by this gene in the Neuroma and other pain models.

11:15 AM – SESSION 115

OPIOID THERAPY: CONTROVERSIES, CONUNDRUMS AND CONSENSUS

Chair and Speaker: Dwight Moulin MD
University of Western Ontario, Departments of Clinical Neurological Sciences and Oncology, London, Ontario
Speakers: Andrew Darke PhD, Ian Gilron MD FRCPC

Learning Objectives:
a. Learn the prevalence of chronic pain in Canada and evidence supporting the role of opioid analgesia in the management of chronic pain.
b. Understand the use and abuse potential of opioid analgesics for chronic pain.
c. Appreciate the role of polypharmacy as an opioid sparing technique and as a synergistic tool in pain management.

Chronic pain is common in adult Canadians and is a source of major disability and economic loss. A recent Canadian survey reported an overall pain prevalence of 29% with approximately one-third enduring moderate to severe pain. Among a subgroup who were taking prescription analgesic med-

ication for their chronic pain, the average duration of pain was 10.7 years and the average intensity was 6.3 (0-10 scale). Less than 10% of subjects taking prescription medication were treated with a major opioid. Despite growing evidence from controlled trials supporting the use of opioid analgesics for chronic pain, major opioids continue to be underutilized as part of a multidisciplinary treatment program – perhaps because of concerns over abuse potential and regulatory sanction, and confusion between physical dependence and addiction. While abuse by patients with chronic pain is rare, diversion through double doctoring, forgery and theft appears to be related to the corresponding number of legitimate prescriptions for various opioids. Opioid therapy may also be complicated by dose-limiting problems such as sedation and nausea. A proposed solution is co-administration of non-opioid "adjuvant" drugs that facilitate opioid dose reduction to reduce adverse effects and/or improve efficacy. This requires the study and identification of drugs that act synergistically with opioids without increasing adverse effects.

CHRONIC PAIN IN CANADA - THE MAGNITUDE OF THE PROBLEM

Dwight Moulin MD
Departments of Clinical Neurological Sciences and Oncology, University of Western Ontario, London, Ontario

OPIOID USE AND ABUSE

Andrew Darke PhD
Vice President, Department of Scientific Affairs, Purdue Pharma, Pickering, Ontario

OPIOIDS IN MONO AND POLYPHARMACY

Ian Gilron MD FRCPC MSc
Queen's University, Departments of Anesthesiology, and Pharmacology and Toxicology and Kingston General Hospital, Kingston, Ontario

11:15 AM – SESSION 116

PAIN IN VULNERABLE POPULATIONS: GIVING PAIN A VOICE

Chair: Anna Taddio PhD
The Hospital for Sick Children, Department of Pharmacy, Toronto, Ontario
Speakers: Bonnie Stevens RN PhD, Lucia Gagliese PhD, Duncan Lascelles BSc BVSc PhD

Educational Objectives of the Session:
Delegates will learn:

1. Know the extent of untreated pain in humans infants, elderly people and in companion animals.
2. Understand which objective, or validated subjective, measures can be used to assess pain in non verbal humans companion animals.
3. Know the current treatments for acute and chronic pain in companion animals.
4. Understand the role of factors such as disease progression, cognitive impairment, in advancing knowledge of the mechanisms of pain and its control in humans.

Summary of Session:
Some of the most important challenges facing the pain community involve identifying, understanding and properly treating the many different pains experienced by vulnerable populations in our society. This symposium will highlight three such vulnerable groups: human infants; the elderly person; and companion animals. Attention will be directed to the epidemiology of pain in these populations; measurement and assessment issues; and treatment approaches. Presentations will focus both on common challenges facing clinicians and researchers in these areas as well as population-specific concerns.

PAIN IN NEONATES

Bonnie Stevens RN PhD
University of Toronto, Faculty of Nursing and The Hospital for Sick Children, Toronto, Ontario

All neonates experience pain. However, preterm infants who are hospitalized in the Neonatal Intensive Care Unit, during the first days and weeks of life, undergo multiple painful events during diagnosis and treatment of medical and surgical conditions. These experiences render them vulnerable to both immediate and long-term consequences of pain and stress. Health professionals are challenged with eliminating or minimizing the pain associated with these events. Although major advances have been made in acute pain assessment and the management of post-operative pain, many challenges remain. Most notable are learning how (a) to assess pain in the most preterm and sick infants, (b) to manage acute and chronic pain using safe and effective pharmacological, behavioural, environmental and physical interventions, and (c) to develop and implement evidence-based clinical guidelines. Attributing importance to pain in these infants and focusing the attention of multidisciplinary efforts on this problem will ultimately lead to enhanced outcomes in this vulnerable population.

PAIN IN THE ELDERLY PERSON

Lucia Gagliese PhD
York University, School of Kinesiology and Health Science and University Health Network and University of Toronto, Department of Anesthesia, Toronto, Ontario

As the population ages, the challenge of providing effective and safe pain management to elderly patients will grow. Unfortunately, our understanding of the ways in which pain and analgesia change with advancing age remains in its infancy. Preliminary evidence suggests that elderly people may be at greater risk than younger people for inadequate management of postoperative, cancer and chronic pain. This may be especially true among the most vulnerable group of elderly people, the cognitively impaired who are unable to verbally report pain. This presentation will explore reasons why pain in elderly patients may be inadequately managed including lack of assessment, risks of pharmacotherapy, and poor understanding of age-related patterns of pain and analgesic efficacy.

PAIN ASSESSMENT AND MANAGEMENT IN ANIMALS

Duncan Lascelles BSc BVSc PhD
North Carolina State University, College of Veterinary Medicine, Raleigh, North Carolina, USA

Learning Objectives:
a. Know the extent of untreated pain in companion animals.
b. Understand which objective, or validated subjective, measures can be used to assess pain in companion animals.
c. Know the current treatments for acute and chronic pain in companion animals.
d. Understand the role of spontaneous animal disease in advancing knowledge of the mechanisms of pain and its control in humans.

As in non-verbal humans, the assessment of pain in animals is fraught with difficulty. Various scales (Categorical, Visual Analogue and Multidimensional) have been adapted from use in humans. However, only recently have attempts been made to validate these, using objective computer-aided behavioral analysis. A variety of objective tools (antinociceptiometric devices, force plates, pressure mats) have been developed and used to assess pain and candidate analgesic interventions. This had lead to a number of evidence-based recommendations for analgesic therapy in acute and chronic pain, however most clinical analgesic intervention is still empirical. A virtually unexplored area is the use of spontaneous disease in companion animals (e.g. dogs and cats) as a relevant model for human pain. Osteoarthritis is present in at least 15 million dogs in the US at any one time, representing huge potential for evaluating both the basic mechanisms of osteoarthritis pain (with ready availability of tissue) and evaluating novel treatments. Primary bone cancer is 40 or 50 times more common in dogs than in humans, again representing a rapid turnover model of human primary or metastatic bone cancer pain.

11:15 AM – SESSION 117

MALADAPTIVE VERSUS ADAPTIVE BRAIN PLASTICITY

Chair and Speaker: Karen Davis PhD
Toronto Western Research Institute and University of Toronto, Toronto, Ontario
Speakers: David Mikulus MD, Christo Pantev PhD DSc

Educational Objectives of the Session:
Delegates will learn:

1. Participants will have a fundamental understanding of functional brain imaging techniques such as fMRI, PET and MEG.
2. Participants will understand the scope and limitations of brain imaging to assess plasticity that occurs during training, learning or neural damage.
3. Participants will be able to identify the cortical changes that occur following manipulation of the auditory, somatosensory and motor systems.
4. Participants will be able to predict the cortical changes that may accompany chronic pain states and discuss the issue of causal (or lack of) relationships between plasticity and pain.

Summary of Session:
The brain undergoes functional change (plasticity) is response to normal everyday events such as learning and training. Brain plasticity also occurs after injury or trauma. Such changes may be either maladaptive or adaptive to the organism. However, the causal association between plasticity and functional outcome is not known. This symposium will first explore the utility of different types of brain imaging techniques (fMRI, PET, MEG) in assessing brain plasticity. Presentations will provide an overview of plasticity due to training, learning and injury in the motor, somatosensory and auditory systems. These findings will be discussed to gain insight into possible outcomes following injury and pain.

PAIN AND PLASTICITY INTERACTIONS

Karen Davis PhD
Associate Professor of Surgery and Canada Research Chair in Brain and Behaviour, University of Toronto, and Senior Scientist, Toronto Western Research Institute, Toronto Western Hospital, Toronto, Ontario

Learning Objectives:
a. Participants will be able to identify the cortical changes that occur following injury to the periphery (e.g., amputation) and central structures (e.g., stroke). Participants will be able to predict the cortical changes that may accompany chronic pain states and discuss the issue of causal (or lack of) relationships between plasticity and pain.
The brain undergoes functional change (plasticity) is response to normal everyday events such as learning and training. Brain plasticity also occurs after injury or trauma. Such changes may be either maladaptive or adaptive to the organism. However, the causal association between plasticity and functional outcome is not know. This presentation will review findings from anatomical, electrophysiological, psychophysical and brain imaging studies of plasticity in the somatosensory system. In particular, recent findings of a link between plasticity and chronic pain will be discussed.

APPLICATION OF FUNCTIONAL BRAIN IMAGING IN THE ASSESSMENT OF BRAIN PLASTICITY

David Mikulus MD
Associate Professor and Director of fMRI Research, The University of Toronto and The University Health Network, The Toronto Western Hospital, Department of Imaging, Toronto, Ontario

Learning Objectives:
a. Participants will understand the mechanisms of functional imaging.
b. Participants will understand the limitations of functional imaging.
c. Participants will gain appreciation for the potential role of functional imaging in their own line of research.
The concept that the brain is "hard wired" is true in the sense that "reconfiguration" of major system and network architecture is not observed. However, an increasing body of evidence has demonstrated that, despite anatomic restrictions, significant adaptation and recovery of function can still occur. Adaptation is being observed at the network level in terms of neuronal connections and synaptic activity as well as the molecular level through changes in neurotransmitters and their receptors. However, the natural response of the brain to injury or changes in afferentation may not always be optimal. For example, there is emerging evidence that rehabilitative intervention applied at the appropriate time may actually enhance the brain's ability to recover from an injury such as an acute stroke. Furthermore, "maladaptive" plasticity may be the brain's response to changes in afferentation as indicated by the phantom limb pain syndromes that develop in amputees. The intense interest in identifying the mechanisms of these adaptations has spilled into the functional imaging community whose expertise is the identification of functional neuronal networks. The purpose of this presentation therefore is to demonstrate how functional imaging methods can be used to identify functional neural networks in the brain, and to review the application of functional imaging in the assessment of brain plasticity.

PLASTIC CHANGES IN THE HUMAN AUDITORY AND SOMATOSENSORY CORTEX AS CONSEQUENCE OF MUSICAL TRAINING

Christo Pantev PhD, DSc
Canada Research Chair "Human Cortical Plasticity", University of Toronto, Rotman Research Institute, Baycrest Centre for Geriatric Care, Toronto, Ontario

Perceptual stimuli in different modalities reach through the central pathway the corresponding brain neurons, which due to their specific tuning are multiply represented, like a mosaic, in several sensory maps. However, the brain organization is not fixed, due to the brain's capacity to adapt to current needs of the environment. Several experiments on cerebral cortical organization in musicians demonstrate an astonishing plasticity. Using magnetoencephalographic (MEG) technique in different studies, we have investigated the changes that occur in the human cortex if a skill is acquired, such as when learning to play an instrument. We found enlarged cortical representation of tones of the musical scale as compared to pure tones in skilled musicians. Enlargement was correlated with the age at which musicians began to practice. We also investigated cortical representations for notes of different timbre (violin and trumpet) and found that they are enhanced in violinists and trumpeters, preferentially for timbres of the instrument on which the musician was trained. In a melody perception experiment we estimated the involvement of the auditory cortex in the extraction of pitch of complex tones, with special consideration of learning-induced, plastic neural changes. Another important question related to cortical plasticity is the cross-modal reorganization of cortical functions By means of auditory, visual, and somatosensory feedback mechanisms, musicians continually adjust their motor program to fit their musical image. For example, trumpet players assess their performance in the auditory modality by listening for errors and in the somatosensory modality by monitoring both the position and pressure of their lips touching the mouthpiece and their fingers pressing the valves. Errors in musical performance are detected by proprioception and can be used in order to refine existing skills. Furthermore, the information from different modalities can interact and add new quality of perception that conveys information not inherent in each single modality. In general, it seems that the perception of cross-modal cues, involving cross-modal plasticity mechanisms, is important for playing an instrument and primary cortices that have been classically thought to be unimodal might actually be multifold.

11:15 AM – SESSION 118

NEW EMPIRICAL FINDINGS IN THE ETIOLOGY AND TREATMENT OF VULVAR VESTIBULITIS SYNDROME

Chair and Speaker: Sophie Bergeron PhD
Department of Sexology, Université du Québec à Montréal, Montréal, Québec
David C Foster MD MPH
Department of Obstetrics and Gynecology, University of Rochester School of Medicine and Dentistry, Rochester, New York, USA
Kimberley A Payne PhD (Candidate)
McGill University, Department of Psychology, Montréal, Québec

Learning Objectives:
At the end of this workshop participants will be able to:
a. Understand some of the central pain processing mechanisms thought to be involved in the etiology of VVS.
b. Identify some of the psychological variables which appear to play a role in the maintenance of VVS.
c. Identify some of the predictors of treatment outcome for VVS.
Recent epidemiological estimates suggest that up to 21% of women under the age of 30 complain of consistent recurring pain during sexual intercourse. Vulvar vestibulitis syndrome (VVS) is suspected to be the most frequent cause of dyspareunia, or painful intercourse, in premenopausal women. Despite a high prevalence rate and the fact that VVS was first described over 100 years ago, there has been little controlled research to elucidate the syndrome's descriptive characteristics, etiology, or treatment. The proposed workshop will focus on new empirical findings concerning possible central pain mechanisms, psychosocial etiological correlates and predictors of treatment outcome for VVS. Dr. Foster will present evidence suggesting that alterations in capsaicin-induced allodynia may reflect changes in the central pain processing in VVS. Kimberley Payne will discuss findings indicating that women with VVS possess anxiety and fear-mediated hypervigilance for pain stimuli. Finally, Dr. Bergeron will present 2.5-year treatment follow-up data demonstrating that pre-treatment pain and confidence in treatment appear to be key factors in predicting successful pain outcomes of behavioral treatments for vulvar vestibulitis, whereas conservative sexual attitudes are the sole predictor of negative surgery outcomes. Implications of these findings for future treatment recommendations will be discussed.

REGIONAL DIFFERENCES TO INTRA-DERMAL CAPSAICIN TESTING IN VULVAR VESTIBULITIS SYNDROME (VVS) AND PAIN-FREE CONTROLS

Presenter: David Foster MD MPH
Authors: DC Foster[1], RW Wood[1], RH Dworkin[2]
[1]Department of Obstetrics and Gynecology, University of Rochester School of Medicine and Dentistry Rochester, New York
[2]Department of Anesthesiology, University of Rochester School of Medicine and Dentistry Rochester, New York, USA

Aim: Longstanding pain found in Vulvar Vestibulitis Syndrome (VVS) may alter central pain processing and lead to differences in the response to intra-dermal capsaicin. We hypothesize that intra-dermal capsaicin testing in the dorsum of the foot will result in heightened pain, a more extensive region of hyperalgesia, allodynia, and increased perfusion compared to the forearm of the same individual and to foot and forearm of pain-free controls.
Method: 10 VVS-afflicted cases and !0 pain-free controls, matched for age and ethnic/racial background, were recruited. Over two separate visits, the participants underwent block-randomized, intra-dermal capsaicin vs. placebo injections to the right forearm and left foot on visit #1 and to the left forearm and right foot on visit #2. Responses were recorded for pain via Visual Analogue Thermometer (VAT), punctate allodynia, dynamic allodynia, regional laser doppler blood flow, regional skin temperature, blood pressure, and pulse.
Results: VAT scores, punctate allodynia, dynamic allodynia, significantly differed between VVS-afflicted cases and pain-free controls. In VVS afflicted cases, intra-dermal capsaicin to the foot did not show greater allodynia compared to the forearm.
Conclusion: Such alterations in capsaicin-induced allodynia may reflect changes in the central pain processing in VVS.

AN INFORMATION PROCESSING APPROACH TO THE STUDY OF VULVAR VESTIBULITIS SYNDROME

Presenter: Kimberley A Payne BA[1]
Authors: Kimberley A Payne BA[1]; Yitzchak M Binik PhD[1,2], Rhonda Amsel PhD[1], Samir Khalifé MD[3], Alina Kao BA[1]
[1]Department of Psychology, McGill University; [2]Sex and Couple Therapy Service, Department of Psychology, McGill University Health Center (Royal Victoria Hospital); [3]Department of Obstetrics and Gynecology, Faculty of Medicine, McGill University, Montreal Quebec

Aim: The tendency to selectively attend to threatening stimuli (hypervigilance) has been identified as a possible mechanism for altered pain perception. Although this has not been investigated in women suffering from dyspareunia, both clinical and empirical data support the role of hypervigilance in other chronic pain groups where affective distress seems to play an important mediating role. Specifically, anxiety and fear have been identified as possible mediators of hypervigilance to pain-related stimuli. This model seems particularly suitable for the study of pain perception in women suffering from vulvar vestibulitis syndrome (VVS), where anxiety and fear are hypothesized to play a central role. The present study represents the first empirical investigation of hypervigilance for pain stimuli in women suffering from VVS as compared with normal controls.
Methods: Seventeen women with VVS and an equal number of age- and education-matched control participants completed a semi-structured interview, a modified Stroop task, a free recall task, a series of self-report measures, and a gynecological examination. State and trait anxiety, fear of pain, and anxiety sensitivity were also assessed.
Results: Women with VVS displayed greater Stroop interference to pain-related stimuli and reported more hypervigilance to pain as compared with controls. State and trait anxiety as well as measures of pain fearfulness mediated this effect.
Conclusions: Evidence was found indicating that women with VVS possess anxiety and fear-mediated hypervigilance for pain stimuli. Implications for sexual functioning will be discussed.

PREDICTORS OF OUTCOME FOR COGNITIVE-BEHAVIORAL THERAPY, BIOFEEDBACK, AND VESTIBULECTOMY IN THE TREATMENT OF VULVAR VESTIBULITIS

Presenter: Sophie Bergeron PhD[1]
Authors: Sophie Bergeron PhD[1], Yitzchak M Binik PhD[2], Samir Khalifé MD[3], Kelly Pagidas MD[4], Howard I Glazer PhD[5], Mélanie Jodoin PhD (candidate)[6]
[1]Department of Sexology, Université du Québec à Montréal, Montréal, Québec; [2]Departments of Psychology, McGill University and McGill University Health Centre; [3]Department of Obstetrics and Gynecology, McGill University and McGill University Health Centre; [4]Department of Obstetrics and Gynecology, Browne University, Providence, Rhode Island; [5]Department of Psychiatry, Cornell University Medical Center, New York, New York USA; [6]Department of Psychology, Université du Québec à Montréal, Montréal, Québec

Aim: The present study examined predictors of outcome in long-term treatment follow-up of women with vulvar vestibulitis.
Methods: Seventy-eight participants were randomly assigned to one of three treatments: group cognitive-behavioral therapy (GCBT), surface electromyographic biofeedback, and vestibulectomy. They were assessed at

pretreatment, posttreatment, 6-month and 2.5-year follow-up. Measures included gynecological examinations, structured interviews and standard questionnaires pertaining to pain and sexual function. Correlation and regression analyses were conducted in order to identify potential pretreatment predictors of pain outcomes 1) for treatments taken together, and 2) for each treatment condition.

Results: For participants taken together as a whole, higher pretreatment pain intensity and lower confidence in treatment predicted higher pain intensity at 2.5-year follow-up. For cognitive-behavioral therapy, higher pretreatment pain intensity predicted higher pain intensity at 2.5-year follow-up. For biofeedback, higher pretreatment pain intensity and lower confidence in treatment predicted higher pain intensity at 2.5-year follow-up. For vestibulectomy, more liberal sexual attitudes predicted lower pain intensity at 2.5-year follow-up.

Conclusion: Pretreatment pain and confidence in treatment appear to be key factors in predicting successful pain outcomes of behavioral treatments for vulvar vestibulitis, whereas liberal sexual attitudes are the sole predictor of the success of vestibulectomy.

12:45 PM – LUNCHEON SPEAKERS

A NOVEL APPROACH TO MANAGING PAIN

Chair: Joel Katz
York University, Department of Psychology and School of Kinesiology and Health Science, Toronto General Hospital and Mount Sinai Hospital, Department of Anesthesia and Pain Management and University of Toronto, Toronto, Ontario
Speakers TBA

2:15 PM – SESSION 119

TRANSITION OF ACUTE PAIN TO CHRONIC PAIN

Chair: Joel Katz
York University, Department of Psychology and School of Kinesiology and Health Science, Toronto General Hospital and Mount Sinai Hospital, Department of Anesthesia and Pain Management and University of Toronto, Toronto, Ontario
Speakers: Terence Coderre PhD, Gordon Asmundson PhD, Robert Dworkin PhD

Educational Objectives of the Session:
Delegates will learn:

1. About the basic science mechanisms underlying the transition of acute pain to chronic pain.
2. The biomedical and psychosocial factors that predict the transition of acute pain to chronic pain.
3. The various models that have been proposed to explain how pain becomes chronic.
4. Strategies both pharmacological and psycho-social that may be effective in preventing the transition to chronicity.

Summary of Session:
We know that all chronic pains began as acute pains and yet only some people will go on to develop long term pain. We know very little about the factors that determine who will develop chronic pain after an injury, illness, accident, or surgery. What are the predictors of chronic pain? Is it something about the nature of the pain, the person in pain, or the social environment that determines who will continue to experience pain in the long term? This symposium will bring together experts in the basic and clinical sciences to present and discuss recent animal and human data pertaining to the transition of acute, time-limited pain to chronic, pathological pain.

BASIC SCIENCE MECHANISMS UNDERLYING TRANSITION

Terence J Coderre PhD
Departments of Anesthesia, Neurology & Neurosurgery, and Psychology, McGill University and McGill University Health Centre Research Institute, Montreal, Quebec

Learning Objectives:
a. Participants will be able to identify the critical underlying phenomena that contribute to the transition from acute to chronic pain states.

Pain normally serves a protective function that involves nociceptive reflexes and acute persistent pain and hyperalgesia. Acute persistent pain is mediated by various phenomena, including wind-up, neurogenic inflammation, release of chemical mediators, and the phosphorylation and translocation of receptors and ion channels, which leads to the sensitization of nociceptors and dorsal horn neurons. Chronic pathological pain is mediated by a variety of phenomena that differ depending on the type of injury that initiates it. Nerve injury leads to the development of ectopic activity in neuromas or dorsal root ganglia, denervation hypersensitivity, loss of inhibition and abnormal sympathetic function. These changes depend on gene modifications with a build-up of sodium channels and adrenergic receptors at the injury site, and changes in growth factors that trigger neuronal sprouting, receptor translocation, and phenotype switches. Excessive activation of somatosensory neurons produces excitotoxicity associated with glutamate release and glial activation leading to liberation of cytokines and nitric oxide, causing reduced sensitivity to analgesics and loss of normal inhibitory processes. Pain processing can be viewed as involving three stages including: activation (reflexes and wind-up), augmentation (acute peripheral and central sensitization), and alteration (gene modifications, altered connectivity, excitotoxicity), with the latter stage playing a critical role in the transition of pain from an acute to a chronic state.

TRANSITION OF ACUTE TO CHRONIC PAIN: THE ROLE OF PSYCHOSOCIAL FACTORS

Gordon JG Asmundson PhD
University of Regina, Faculty of Kinesiology and Health Studies, Regina, Saskatchewan

Learning Objectives:
a. Participants will be able to better understand, identify, and assess psychosocial factors that have theoretical and empirically supported association with transition from acute to chronic pain.

Numerous factors, ranging from pain intensity to psychopathology, have been implicated as important in the transition from acute to chronic pain and, thereafter, in maintaining pain and pain behaviours. Recent biopsychosocial models, including the increasingly popular fear-avoidance models, suggest (a) that there are intra-personal vulnerability factors that predispose one to develop chronic pain, and (b) that an understanding of these factors, combined with practical methods for their identification, may facilitate efforts for effective early intervention. The purpose of this presentation is threefold. First, an overview of factors implicated in the transition from acute to chronic pain and their positioning and relevance in the context of our revised fear-avoidance model will be provided. Second, empirical evidence, including data that we are presently collecting in patients presenting with acute musculoskeletal injury as well as that from recent investigations from other laboratories, will be summarized and critiqued. Finally, future directions for empirical investigation and practical suggestions for assessment will be offered.

A VULNERABILITY-DIATHESIS-STRESS MODEL OF CHRONIC PAIN AND ITS PREVENTION

Robert H Dworkin PhD
Departments of Anesthesiology and Neurology, University of Rochester School of Medicine and Dentistry

Learning Objectives:
a. Participants will be able to describe a vulnerability-diathesis-stress model of chronic pain and discuss its application in research on the development and prevention of postherpetic neuralgia and chronic pain following breast cancer surgery.

The goals of research on chronic pain are to understand its pathogenesis, improve its treatment, and prevent its development. To achieve these goals, prospective studies of the development and maintenance of chronic pain are needed. Although there is widespread agreement that chronic pain develops from and is maintained by a combination of neurobiological, psychological, and social factors, few comprehensive models have been proposed that present specific testable predictions about how these factors interact. A vulnerability-diathesis-stress model of the pathogenesis of chronic pain is described that is based on diathesis-stress models of psychopathology and on the results of recent research on risk factors for the development of chronic pain. [1]This model can serve as a basis for designing, analyzing, and interpreting studies of the interaction among biological, psychological, and social risk factors in the development of chronic pain. The results of prospective studies of the development of postherpetic neuralgia (PHN) following acute herpes zoster and chronic pain following breast cancer surgery provide initial support for the vulnerabilty-diathesis-stress model and for ongoing research on the prevention of PHN.

[1]Dworkin RH, Banks SM. A vulnerability-diathesis-stress model of chronic pain: herpes zoster and the development of postherpetic neuralgia. In RJ Gatchel, DC Turk (eds.), Psychosocial factors in pain: critical perspectives. New York: Guilford Press, 1999:247-269.

2:15 PM – SESSION 120

THE PATIENT PAIN MANIFESTO: A NOVEL APPROACH TO CHANGING PAIN ASSESSMENT AND MANAGEMENT OF HOSPITALIZED PATIENTS

Chair and Speaker: Celeste Johnston RN DEd
McGill Univrsity, School of Nursing, Montreal, Quebec
Speakers: Jennifer Cogan MD MSc, Manon Choiniere RN PhD, Ana Velly PhD DDS

CAN PAIN ASSESSMENT AND MANAGEMENT BEHAVIOURS OF HOSPITAL STAFF BE CHANGED?

Celeste Johnston RN DEd CPS President
McGill Univrsity, School of Nursing, Montreal, Quebec

HOW BAD IS PAIN IN HOSPITALIZED PATIENTS IN CANADA?

Jennifer Cogan MD MSc
McGill University and Royal Victoria Hospital, Montreal; Quebec Royal Victoria Hospital, Montreal, Quebec

SELECTING THE BEST DESIGN AND MEASURES OF INTERVENTIONS FOR HOSPITAL STAFF

Manon Choiniere PhD
Institut de cardiologie de Montreal, Centre de Recherche, Montreal, Quebec

IS THE PATIENT MANIFESTO EFFECTIVE IN DECREASING PATIENT PAIN LEVELS THROUGH CHANGES IN HOSPITAL STAFF BEHAVIOUR?

Ana Velly PhD DDS
Sir Mortimer B Davis-Jewish General Hospital, Centre for Epidemiology and Community Studies and McGill University, Montreal, Quebec

WHERE DO WE GO FROM HERE?

Celeste Johnston RN DEd CPS President
McGill Univrsity, School of Nursing, Montreal, Quebec

2:15 PM – SESSION 121

COPING WITH ACUTE AND CHRONIC PAIN USING MINDFULNESS-BASED STRESS REDUCTION (MBSR)

Chair and Speaker: Susan Abbey MD FRCPC
Program in Medical Psychiatry, University Health Network, Department of Psychiatry, University of Toronto, Toronto, Ontario
Speaker: Sarah Greenwood RN

Overall Aim: To inform pain clinicians about the potential value of mindfulness-based stress reduction in pain management.

Learning Objectives:

a. Understand the structure and process of MBSR programs.

b. Be familiar with the scientific evidence supporting the use of MBSR in pain patients.

c. Know indications and contra- indications for MBSR.

d. Appreciate what they should look for in evaluating programs and program leaders to refer patients to.

Mindfulness-Based Stress Reduction (MBSR) is a group program receiving increasing attention. It is designed to help individuals cope more effectively with life challenges. This manualized program consists of 9 - 10 group sessions during which participants learn a variety of mindfulness meditation based self-regulation techniques and cognitive therapy principles as well as psychoeducation on symptom management. MBSR is a recognized and effective treatment for a wide variety of physical and emotional disorders. MBSR helps people learn how to deal with stress, distress, pain and illness and to feel more confident in their ability to manage their symptoms. Participation in the program decreases mood disturbances and functional disability in patients with major medical illnesses. It originated at the University of Massachusetts in 1978 and is now widely accessible across the United States and is beginning to gain momentum in Canada. It appears to reduce health care costs in small studies through decreasing both ambulatory and hospital costs. Health Canada has described it as an “exemplary” program for fostering self-care.

This workshop will provide participants with an overview of the scientific literature related to MBSR with a particular focus on its use in pain patients, provide a brief experience of a mindfulness meditation and describe instructor qualifications and how the program is delivered in order to give clinicians greater comfort in making appropriate referrals to MBSR programs. Audience participation will be encouraged.

AN OVERVIEW OF MBSR & ITS ROLE IN ENHANCING COPING WITH PAIN

Susan Abbey MD FRCPC
Program in Medical Psychiatry, University Health Network, Department of Psychiatry, University of Toronto, Toronto, Ontario

Mindfulness will be defined and mindfulness meditation will be compared with concentrative meditative forms such as TM and Benson’s Relaxation Response. The conceptual background of MBSR will be described with particular attention to the way in which pain is understood and worked with in MBSR. The Literature evaluating its use in patients with chronic pain will be briefly and critically reviewed. Recent data from our own program showing robust and clinically significant pre-post treatment improvements on reliable and valid psychometric instruments will be presented to illustrate the value of MBSR for pain patients in decreasing physical and emotional distress, improving hath-related quality of life, and increasing a sense of general well-being, optimism, and control.

MINDFULNESS: A BRIEF EXPERIENCE

Sarah Greenwood RN
Program in Medical Psychiatry, University Health Network, Toronto, Ontario

Participants will be led through a 10-minute mindfulness exercise used in the first session of MBSR training programs and will have an opportunity

to discuss what the experience was like for them. Common MBSR participant responses to the exercise will be described.

HOW DO I ASSESS MBSR PROGRAMS PRIOR TO REFERRING PATIENTS?

Susan Abbey MD FRCPC
Program in Medical Psychiatry, University Health Network, Department of Psychiatry, University of Toronto, Toronto, Ontario

MBSR leader qualifications will be described. The structure and process of MBSR programs will be reviewed. Indications and contraindications for referral to MBSR programs will be summarized.

2:15 PM – SESSION 122

MEDICO-LEGAL AND POLICY ASPECTS OF OCCUPATIONAL PAIN DISABILITY

Chair and Speaker: Izabela Schultz PhD ABPP ABVE
Associate Professor, Department of Educational and Counselling Psychology, and Special Education, University of British Columbia, Vancouver, British Columbia
Speakers: Harold Merskey DM FRCP(C), Ken Craig PhD

Learning Objectives:
a. Participants will be able to critically review the key medico-legal issues and controversies related to occupational pain disability from a current research evidence perspective.
b. Participants will also be able to discuss implications of this research for (2a) workers' compensation policy and (2b) medico-legal clinical practice including evaluation and rehabilitation of non-specific chronic pain.

The presentation has four educational objectives: (1) enhanced understanding of the complexities of medico-legal issues involved in clinical assessment and management of occupational pain, (2) enhanced understanding and knowledge of the medico-legal and policy implications of current empirical models predictive of occupational pain disability, (3) improved ability to understand clinical issues related to detection of malingering and deception in pain assessments using recent research evidence and (4) critical analysis of factors influencing measures of pain in the medico-legal context and enhancement of clinical practice in the evaluation and rehabilitation of headache, neck and back pain.

Three Canadian research initiatives employing a biopsychosocial approach to pain will be presented. These recent studies focus on prediction of pain disability, detection of deception, and medico-legal factors important to the measurement of pain. Critical analyses and a discussion of the implications of these studies will follow.

MULTIVARIATE MODELLING OF OCCUPATIONAL PAIN DISABILITY: WORKERS' COMPENSATION POLICY IMPLICATIONS

Izabela Schultz PhD ABPP ABVE
University of British Columbia, Vancouver, British Columbia

This presentation will focus on three objectives: (1) discussion of adjudicative, evidentiary, causality and disability claim-related and rehabilitation aspects of workers' compensation policy as related to occupational pain; (2) presentation of findings from a recently completed study on multivariate, multi-method prediction of occupational low back disability, and discussion of empirically-derived models of occupational disability for different disability outcomes; (3) review of implications of this study for workers' compensation policy and practice.

The study, which constitutes the focus of the presentation, demonstrated that occupational back pain disability could be predicted from early markers arising from a biopsychosocial model of pain, with up to 80% accuracy. The integrated model of disability covers a wide spectrum of variables including perception of vitality, health change, feeling that job is threatened due to injury, expectations of recovery, guarding behaviour, perception of severity of disability, time to complete walk and right leg typical sciatica. Predictive modelling using work status, duration and costs of disability as disability consistently underscores the significance of cognitions, particularly expectations of recovery, which are accompanied by disability behaviours. Consequently, individual probability indices of return to work can be derived from empirical data. The role of expectations of recovery, beliefs and perceptions involved in return to work prediction will be highlighted, with implications for early intervention, policy and practice with injured workers. Since cognitions are amenable to change, a cognitive behavioural model with an adaptation- rather than pathology-focused approach is favoured for intervention with workers at high risk for disability.

FACTORS INFLUENCING SUBJECTIVE AND OBJECTIVE MEASURES OF PAIN

Harold Merskey DM FRCP(C)
Professor Emeritus, Psychiatry, University of Western Ontario, London, Ontario

Headache, neck pain and low back ache are put in question when there is a potential for compensation. The majority of individuals who complain of disabling pain (in our society) are credible, if not highly credible. Whether or not there are physical signs or imaging to support them, their complaints are ordinarily consistent (for those who know how to take a proper history), caused by proportionate psychological illness, accompanied by characteristic tenderness, easily recognizable by the objective examiner (not working against the patient), influenced by typical contributory factors such as age, previous injury, nature of collisions or accident, justified by well established pathological knowledge in animals and humans, and shown to be removable under controlled double-blind conditions in a significant proportion of cases. Follow-up study supports the view that patients with chronic whiplash pain are not biased in the direction of personality disorder at the beginning but become depressed subsequent to the persistence of pain. There is similar evidence for chronic low back pain.

The attitudes which lead to rejection of the patients who have pain and claim compensation is accompanied by a tendency to minimize pain in other circumstances, presumably at least for the sake of consistency.

Programs for treatment and rehabilitation need to take an unsparing look at false claims from professionals even more than at false claims from patients.

VOLUNTARY MISREPRESENTATION OF PAIN: LAB, PRACTICE, AND POLICY

Ken Craig PhD
Professor, Psychology Department, University of British Columbia, Vancouver, British Columbia

Skepticism concerning complaints of pain is commonplace and thus credibility judgements become an inevitable feature of social interactions. A range of public policy issues deserve to be addressed, including; inadequate support for the knowledge base needed to understand the contentious issues involved, the dominance of biomedical models of pain in decisions about patient credibility, the adversarial nature of the legal system, the contrasting roles of practitioners doing evaluations and serving as patient advocates, and inadequate provision of treatment and support for people with chronic pain. Estimates of pain dissimulation in the interests of personal gain vary substantially. We have examined the proposition that patients can successfully deceive others with patients voluntarily endeavouring to dupe judges concerning clinical pain. Findings derived from fine-grain behavioural coding have indicated faked and suppressed facial displays of pain qualitatively differ from spontaneous expressions. Nevertheless, systematic study of observer's judgements indicates they usually are fooled, although differentiable information is present. Corrective feedback only modestly improves deception detection rates. Do these and other analogue studies of deception contribute to the needs of health care practitioners challenged to identify misrepresentation? There appears to be a slow accumulation of information and validated strategies capable of improving judgements required of health care practitioners, but clinical

judgement, with the usual sources of bias, still represents the usual basis. As well, issues external to referral questions and patient need often impinge upon clinical assessments. There remains ample room for further research to inform public policy.

4:15 PM – SESSION 123

UNDERGRADUATE PAIN EDUCATION FOR HEALTH PROFESSIONALS: AN INTERFACULTY MODEL

Chair: Judy Watt-Watson RN PhD
University of Toronto, Faculty of Nursing and Centre for the Study of Pain, Toronto, Ontario
Speakers: Judi Hunter BScPT MSc PhD, Peter Pennefather PhD, Lalitha Raman-Wilms BSc Phm PharmD FCSHP, Leila Lax BA BScAAM Med PhD
University of Toronto Centre for Study of Pain, Toronto, Ontario

Learning Objectives:
a. Discuss the major components in the development, implementation, and evaluation of an integrated undergraduate pain curriculum, including the web-based IT research project.

The continuing gap between research evidence and pain management practices may be related to the minimal pain content in many university professional programs. The University of Toronto Centre for the Study of Pain (UTCSP) recognizes in its structure and mandate this problem and that pain management crosses all health disciplines. An interdisciplinary committee was therefore established to identify pain education requirements of health professional faculties in order to develop an interdisciplinary program. This session will address the seminal development, implementation, and evaluation of a 20-hour undergraduate pain curriculum in an integrated model for 540 students from the Faculties/Departments of Dentistry, Medicine, Nursing, Physical Therapy, Pharmacy and Occupational Therapy. A subset of students participated in a collaborative on-line research project to discuss a clinical case that unfolded over the course of the week. All students received manuals containing readings and additional resources. Facilitators (n=63) representing all the disciplines involved were given a manual and orientation session to standardize the small interdisciplinary group sessions. Patient cases were carefully scripted to be used for Standardized Patients both in groups (n=23) and on-line videos. Evaluation methods and results will be shared and the ongoing development of the model for 2003.

4:15 PM – SESSION 124

PAIN AND THE SEROTONERGIC SYSTEM

Chair and Speaker: Howard Smith MD
Albany Medical College, Albany, New York, USA
Speakers: Anthony Dickenson PhD, Gary McCleane MD

Educational Objectives of this session:

1. Participants will be able to identify and be familiar with the serotonin, its metabolism, and an overview of its distribution in the nervous system.
2. Participants will become familiar with and be able to discuss the role of serotonin in analgesia.
3. Participants will be able to identify and assess the effects of 5-hydroxytryptamine (5-HT)$_3$ receptor antagonists on pain perception.
4. Participants will become familiar with and be able to discuss the clinical significance of 5-hydroxytryptamine (5-HT)$_3$ receptor antagonists on the modulation of pain.

Summary of Session:
Pain from peripheral nerve injury, characterized by ongoing pain, hyperalgesia and allodynia arise from peripheral and central processes. There is clear evidence from both preclinical and clinical studies that both peripheral and central hyperexcitability play important roles in determine the level of pain perceived. Rightly, much emphasis has been put on spinal cord mechanisms in central excitability but it is now becoming clear that this can be regulated by decending pathways from the brain. Increases in pain sensitivity that follow injury can be regulated by superficially located projection neurons of the dorsal horn of the spinal cord that express the NK1 receptor. Following selective ablation of these neurons we have identified changed in receptive field size, mechanical and thermal coding and central sensitization of deeper lying dorsal horn neurons in the rate, important for both pain sensations and reflexes. These changes could be reproduced by pharmacological block of decending serotonergic facilitatory pathways mediated by excitatory 5HT$_3$ receptors using the antagonists ondansetron. 5HT$_3$ receptors therefore play a pronociceptive role in the spinal cord supported by previous evidence in studies of inflammation. The animal evidence suggesting an antinociceptive effect of the 5HT$_3$ receptor antagonists seems to be confirmed in the human model.

OVERVIEW OF THE SEROTONERGIC SYSTEM

Howard Smith MD
Albany Medical College, Albany, New York, USA

Pain modulation comprises a complex array of various systems which may impact on nociceptive signals with potential resultant amplification or dampening or pain perception. The serotonergic system plays a crucial role in contributing to pain modulation in various pain states. Pain modulation pathways and the serotonergic system including 5-HT, 5-HIAA, 5-HT Transporter, and the various 5-HT receptor subtypes will be introduced as well as the potential role of serotonergic mechanisms in nociception.

BASIC SCIENCE CONSIDERATIONS OF DESCENDING SEROTONERGIC FACILATORY PATHWAYS AND ANALGESIA

Anthony Dickenson PhD
University College, London, England, United Kingdom

Pain from peripheral nerve injury, characterized by ongoing pain, hyperalgesia and allodynia arise from peripheral and central processes. There is clear evidence from both preclinical and clinical studies that both peripheral and central hyperexcitability play important roles in determine the level of pain perceived. Rightly, much emphasis has been put on spinal cord mechanisms in central excitability but it is now becoming clear that this can be regulated by decending pathways from the brain. Increases in pain sensitivity that follow injury can be regulated by superficially located projection neurons of the dorsal horn of the spinal cord that express the NK1 receptor. Following selective ablation of these neurons we have identified changed in receptive field size, mechanical and thermal coding and central sensitization of deeper lying dorsal horn neurons in the rat, important for both pain sensations and reflexes. These changes could be reproduced by pharmacological block of decending serotonergic facilitatory pathways mediated by excitatory 5HT$_3$ receptors using the antagonists ondansetron (Zofran™). 5HT$_3$ receptors therefore play a pronociceptive role in the spinal cord supported by previous evidence in studies of inflammation. Further we have demonstrated that in animals models of neruopathic pain there are enhanced decending facilitatory controls of mechanical responses of spinal neurones, mediated through the activation of spinal 5HT$_3$ receptors. These excitatory influences are likely to contribute to the development and maintenance of central sensitization in the spinal cord, and furthermore, to the behavioral manifestation of tactile allodynia.

DO $5HT_3$ RECEPTOR ANTAGONISTS HAVE AN ANALGESIC EFFECT IN HUMAN PAIN?

Gary McCleane MD
Rampark Pain Centre, Lurgan, North Ireland, UK

Learning Objectives:
a. To assist participants to understand the function of $5HT_3$ on nociceptive transmission and how antagonists of this receptor may have an analgesic effect in human pain.

There are many descending pathways from the brain to the spinal cord that modulate pain messages. In particular, there is a powerful $5HT_3$ receptor mediated facilitatory drive and consequently neuronal responses to noxious stimuli can be selectively inhibited by $5HT_3$ antagonists.

Currently there are a number of selective $5HT_3$ receptor antagonists available for clinical use. These possess product licenses as anti emetics and specifically for post operative nausea and vomiting and chemotherapy induced emesis. A number of these have been studied in a variety of human pain conditions. It has been shown that tropisetron can relieve the pain associated with fibromyalgia (although there is a bell shaped dose response curve with its use), ondansetron can relieve neuropathic pain and alosetron has recently been released for the management of irritable bowel syndrome. The most common side effects associated with their use are constipation and headache. If the findings of the animal experiments have human applicability and the small number of human studies are an accurately reflect the effect of the $5HT_3$ antagonists then they may represent a further option for human pain management.

4:15 PM – SESSION 125

MAKING STRIDES IN PAIN MANAGEMENT: CHALLENGES AND OPPORTUNITIES FOR ADVANCED PRACTICE NURSES IN INTERDISCIPLINARY CARE

Chair: Jennifer Stinson RN MScN CPNP
Chronic Pain Management Program, The Hospital for Sick Children, Toronto, Ontario
Speakers: Mona Sawhney RN MN ACNP[1], Shirley Musclow RN MN ACNP[2], Lori Palozzi RN MScN ACNP[3]
[1]Acute Pain Service, University Health Network, Toronto General Hospital, Toronto, Ontario; [2]Acute Pain Service, The Scarborough Hospital, Scarborough, Ontario; [3]Pain and Sedation Service, The Hospital for Sick Children, Toronto, Ontario

Learning Objectives:
a. Participants will be able to define the scope of practice and emerging roles of advanced practice nurses (APN) in interdisciplinary pain management programs in Canada.
b. Participants will be able to identify the challenges and opportunities with development and implementation of APN roles in interdisciplinary pain management in adult and pediatric settings.
c. Participants will be able to identify implications for future research on evaluation of APN roles and their impact on patient outcomes in interdisciplinary pain management.

PERSPECTIVES FROM AN ADVANCE PRACTICE NURSE IN A TERITARY ACADEMIC HEALTH SCIENCE CENTRE

Mona Sawhney RN MN ACNP
Acute Pain Service, University Health Network, Toronto, Ontario

Advanced practice nursing (APN) roles in acute pain management improve patient and organizational outcomes. APN role enactment differs depending on the type of institution and constitution of the Acute Pain Service (APS). How the APN role is supported and marketed can affect its successful implementation. The APS at the Toronto General Hospital is composed of an interdisciplinary team that includes anesthesia and nursing. This presentation will highlight the functions of an APS in a large tertiary academic health science center and how the APN role fits within this team. The clinical, educational, research and administrative functions of this APN role will also be addressed. The ways in which the APN and APS positively influence pain management and patient outcomes will be discussed as well as challenges in role implementation.

PERSPECTIVES FROM AN ADVANCE PRACTICE NURSE IN A COMMUNITY-BASED HOSPITAL PAIN SERVICE

Shirley Musclow RN MN ACNP
Acute Pain Service, The Scarborough Hospital, Scarborough, Ontario

This presentation will focus on how an advanced practice nurse provided leadership in the development of an APS in a community-based hospital. The challenges and benefits of developing medical directives, marketing the APS and nursing role as well as identifying the importance of internal and external support systems will be highlighted. Participants will be encouraged to discuss their own practice settings and current initiatives in the development and implementation of APN roles in acute pain management in community settings.

PERSPECTIVES FROM A PEDIATRIC PAIN ADVANCED PRACTICE NURSE

Lori Palozzi RN MScN ACNP
Pain and Sedation Service, The Hospital for Sick Children, Toronto, Ontario

The role of the APN on the pain service in a pediatric health science center was developed in 1994. This presentation will highlight role inception and development, reporting structure, scope of practice and challenges of role implementation. Working within a program management structure, the role was developed to promote optimal post-operative pain management of children followed by the APS. Within a short period of time, the scope of this role broadened to include acute procedural pain. Graduate preparation and supplementary courses from a Nurse Anaesthesia program in Buffalo was necessary to develop the skills required to provide services to children receiving sedation and satellite anesthesia in collaboration with the anaesthesiologist. The role was expanded further with the inception of the chronic pain program, where the APN has a leadership role in the care of children with a variety of chronic pain conditions. Successes and challenges to the implementation of these three unique roles will be discussed.

4:15 PM – SESSION 126

MULTIDISCIPLINARY TREATMENT OF WORKPLACE-RELATED CHRONIC PAIN DISORDERS: LESSONS, CHALLENGES AND NEW DIRECTIONS

Chair: David Etlin MD FRCPC
University Health Network, Toronto Western Hospital, Pain Management Program and Rehabilitation Solutions' Functional Restoration Program
Speakers: Douglas Saunders PhD C Psych, University Health Network, Toronto Western Hospital, Rehabilitation Solutions; UofT Public Health Sciences; Erika Runions MA, University Health Network, Toronto Western Hospital, Rehabilitation Solutions; Iona MacRitchie BSc OT(c), University Health Network-Toronto Western Hospital, Rehabilitation Solutions' Functional Restoration Program

Learning Objectives:
a. Participants will obtain knowledge of the key elements of a comprehensive multidisciplinary intervention for the assessment and treatment of Chronic Pain and apply them to a working model of this intervention.

b. Participants will be able to new clinical procedures towards evidence-based treatment outcomes.
c. Participants will be able to apply clinical experiences and program evaluation outcomes to the development of new individualized interventions.

Overall Aim and Workshop Content
Chronic pain disorder is a multidimensional condition in which the psychological, social, and functional elements often outweigh the purely biological. When it is workplace-related, it is often further complicated by issues such as income loss, compensation dependence, impaired work-role and worker-employer conflict. Recent reviews of treatment studies conclude that multidisciplinary treatment emphasizing functional restoration is more effective than single discipline interventions; although evidence for improved 'vocational outcomes' has been minimal.
In this workshop, we review the evidence and report on the past four years of experience at The Toronto Western Hospital-Functional Restoration Program (TWH-FRP) in providing multidisciplinary assessment and treatment to a sample of approximately 800 injured workers from across Ontario. We report on recent treatment advances and resulting outcomes from the TWH-FRP. The findings we report on indicate that to achieve vocationally-relevant outcomes requires addressing factors associated with progression to chronic pain disability such as pain severity, perceived disability, depression and fear of re-injury as well as more timely focus on functional restoration and occupational re-integration.

COMPREHENSIVE MULTIDISCIPLINARY INTERVENTION FOR WORK-RELATED CHRONIC PAIN DISORDERS

Douglas Saunders PhD C Psych
University Health Network-Toronto Western Hospital - Rehabilitation Solutions; University of Toronto Public Health Sciences, Toronto, Ontario

Within the past decade, the scientific literature has provided support for the effectiveness of multidisciplinary pain management treatment relative to single discipline interventions in the treatment of chronic pain disorder. Systematic reviews of more recent treatment studies have concluded that only intensive, multidisciplinary rehabilitation emphasizing functional restoration appears capable of reducing pain and improving functional status. However, these reviews have noted a lack of similar evidence for vocational outcomes. The evidence indicates that necessary components of such a program include cognitive-behavioural pain management training with emphasis on functional restoration. For those with work-related chronic pain a key element is also re-integration into vocationally relevant outcomes. The TWH-FRP is a hospital outpatient-based program that offers a working model of this approach.

MULTIDISCIPLINARY TREATMENT OUTCOMES OF WORKER WITH CHRONIC PAIN DISORDERS

Erika Runions MA
University Health Network- Toronto Western Hospital - Rehabilitation Solutions, Toronto, Ontario

Systematic reviews of treatment studies have concluded that only intensive, multidisciplinary rehabilitation emphasizing functional restoration appears capable of reducing pain and improving functional status. However, these reviews have also noted a lack of similar evidence for such treatments in regards to vocational outcomes. We report on the vocational outcomes from TWH multidisciplinary Functional Restoration program as well as changes in functional and emotional status following participation in the program. The results indicate that in a sample of N=638 follow-up cases of treatment completers, representing 4 years of consecutive admissions to the standard 6-week program, 48% report participation in vocationally-relevant outcomes three to four months after discharge, compared to only 6% prior to the program. The results provide evidence for the vocationally relevant effectiveness of intensive, multidisciplinary rehabilitation that emphasizes functional restoration. The results also show, however, that a large percentage of clients have difficulty applying their pain management training to vocationally relevant activities. In an effort to address this issue, the program team has recently developed an integrated functional activities model to enhance function and work re-integration by addressing pain-related fear of activity as opposed to focusing on traditional exercise and activity prescription.

INTERDISCIPLINARY TREATMENT ADVANCES FOR WORKERS WITH CHRONIC PAIN DISORDER

Iona MacRitchie, BSc OT(c)
University Health Network-Toronto Western Hospital - Rehabilitation Solutions' Functional Restoration Program, Toronto, Ontario

The TWH-FRP, a multidisciplinary chronic pain treatment program, has initiated a number of treatment advances designed to improve the translation of functional, psychological and social improvements into occupationally relevant outcomes. Specific occupational issues related to objective and perceived characteristics of work demands and social interactions at work can act as barriers to recovery and are best addressed at the workplace. We have encouraged earlier referral and intervention for high-risk workers in an attempt to prevent the transition from acute to chronic pain. Among a sample of N= 60 treatment completers of the customized program, 72% have had vocationally relevant outcomes, i.e. 53% have increased hours and/or duties, 14% were assisted in stabilizing their workplace situation and 5% attended Labour Market Retraining programs following discharge. The results provide evidence for the vocationally relevant effectiveness of intensive, interdisciplinary rehabilitation that emphasizes functional restoration and occupational re-integration.

POSTERS PRESENTED ON FRIDAY MAY 23, 2003
P-1 – P-60 INCLUSIVE

P-1
SPONTANEOUS NOCICEPTIVE BEHAVIOURS INDUCED BY INTRATHECAL (RS)-DHPG ARE DOSE-DEPENDENTLY ATTENUATED BY PD 98059 A MAP-K KINASE INHIBITOR

SS Ambrosini[3] BSc, TJ Coderre[1,2,3] PhD
Departments of Anesthesia[1], Neurology & Neurosurgery[2], and Psychology[3], McGill University, Montreal, Quebec

Previous work in our laboratory has demonstrated the occurrence of spontaneous nociceptive behaviors (SNBs) upon intrathecal (i.t.) administration of DHPG, a selective agonist for group 1 metabotropic glutamate receptors (mGluRs). Increases in extracellular regulated kinase (ERK) signaling have been reported after i.t. (RS)-DHPG administration, suggesting group 1 mGluR activation stimulates the downstream second messenger ERK. Additionally, nociceptive behaviours and ERK activation in the second phase of the formalin test are both decreased by PD 98059, an inhibitor of mitogen-activated protein kinase kinase (MAP-K kinase or MEK) which phosphorylates ERK/MAP-K. The aim of this study is to investigate the effect of MEK inhibition, using PD 98059, on DHPG-induced SNBs. Briefly, male Long-Evans rats were given i.t. pretreatment of PD 98059 (25nmol, 5nmol) or vehicle, 20 minutes prior to i.t. DHPG (40nmol). The SNBs scored included tail elevation, hind paw elevation, and tail licking. SNBs were measured for a duration of 30 minutes, with subsequent testing of noxious mechanical and thermal thresholds using plantar test latencies and von Frey thresholds. PD 98059 (25nmol, 5nmol) dose-dependently decreased the incidence of DHPG-induced SNBs, and reduced both mechanical and thermal hypersensitivity in DHPG-treated rats.

P-2
GENDER DIFFERENCES IN PAIN MODELLING

Melanie A Badali MA, Michael D Davis BA, Kenneth D Craig PhD
Department of Psychology, University of British Columbia, 2136 West Mall, Vancouver, British Columbia, Phone: 604.822.5280; E-mail: badali@interchange.ubc.ca

AIMS: To explore whether males and females are socialized to communicate pain differently through an examination of gender differences in reported pain models.

METHODS: The Family Health Questionnaire (Koutantji et al., 1998) and the Bem Sex-Role Inventory (Bem, 1974) were administered to 40 healthy university students (20 male, 20 female), who subsequently underwent a hand-immersion cold pressor task. Self-report, observational and psychophysiological measures of pain were obtained.

RESULTS: An independent-samples t-test indicated that females reported significantly more pain models (M = 3.80, SD = 2.44) than males (M = 2.40, SD = 1.76), p = .04. A comparison of the relative number of male and female pain models reported by participants indicated that female participants identified more female pain models (M = 1.7, SD = 1.13) than male pain models (M = 1.0, SD = 1.12), (t(19) = 2.41, p = .03) but no significant difference was found for male participants. These findings will be discussed in the general context of the literature on gender differences in pain and specifically related to measures of pain experience in the present experiment.

CONCLUSIONS: Female participants reported a higher number of pain models and, among these, identified more female than male pain models. Males did not report more pain models of one sex relative to the other. The present results are consistent with previous findings (e.g., Koutantji et al., 1998) and suggest that pain socialization factors may differ among the sexes.

P-3
MULTIPLE FACTORS CONTRIBUTE TO THE PERCEIVED RELIEF INDUCED BY PLACEBO TENS

Julie Charron MPs[1], Pierre Rainville PhD[1], Serge Marchand PhD[2]
[1]Université de Montréal, [2]Université de Sherbrooke

AIM: Identify factors that contribute to placebo analgesia responses.

METHODS: Twenty healthy subjects (10 women) received heat stimuli on both arms in a four-block design. Blocks 1 and 4 were control conditions. During the second block, placebo TENS electrodes (without electric current) were applied on one arm and the stimuli on this arm were decreased by 2°C (conditioning condition). During the third block, placebo TENS was applied with the usual stimuli (placebo condition). Subjects rated (1) the intensity and (2) the unpleasantness of the pain, (3) their expected change of pain after the treatment, and (4) their perceived post-treatment change.

RESULTS: The placebo effect (repeated-measure ANOVA, p<.001) is significant mainly on the perceived relief measure. However, the perceived change in block 3 is significantly correlated with both pain measures, with expectations and with perceived change during the conditioning condition. ANCOVA suggests that expectations mediate the placebo-perceived change. Perceived relief in the conditioning condition as well as expected change of pain and pain unpleasantness in the placebo condition predict the perceived relief in response to placebo TENS (multiple linear regression models, R2= .34 to .36, p's<.01).

CONCLUSIONS: This prediction model of placebo underlines the importance of both past experience with a treatment, expectations of relief and unpleasantness perception. However, the non-significant effect of treatment on pain ratings suggests differences between the immediate ratings and the retrospective measures of change. The latter may reflect global evaluative processes more sensitive to contextual factors involved in placebo.

Acknowledgments: Supported by FRSQ/FCAR and CFI.

P-4
THE MMPI-2 'NEUROTIC TRIAD': DOES IT PROVIDE USEFUL INFORMATION IN CHRONIC PAIN PATIENTS?

Megan A Davidson BA, Paul R Davidson PhD, Dean A Tripp PhD, Yurii D Borshch MD
Queen's University, Kingston Ontario

AIM: In chronic pain patients, a frequently occurring MMPI-2 profile is the 'neurotic triad' - an elevation of the Hypochondrias (Hs), Depression (D) and Hysteria (Hy) scales (e.g. Riley & Robinson, 1998). This study examines the validity of the interpretation of this profile in pain patients.

METHOD: We examined the relationship of the triad to the Multiphasic Pain Inventory (MPI), the McGill Pain Questionnaire (MPQ), and other scales measuring anxiety, depression, catastrophizing, coping, stages of change, and disability in 25 patients chronic pain patients.

RESULTS: Preliminary analyses of the data suggest that the presence or absence of the profile is predictive of no other scores except the MPQ Affective scale. Magnitude of elevation on the combination of scales of the profile is no more predictive of any other measure than are the individual Hs, D and Hy scales.

CONCLUSIONS: Studies to replicate the present finding in a larger sample are planned. Nevertheless, while small sample size is a limitation, the present study suggests that the neurotic triad and the construct that it measures may have only limited clinical value in the assessment and treatment of chronic pain.

REFERENCE: Riley, J. & Robinson, M. (1998). Validity of MMPI-2 profiles in chronic back pain patients: Differences in path models of coping and somatization. Clinical Journal of Pain, 14, 324-335.

P-5

RELATING FAMILY HISTORY OF PAIN TO INDICES OF DAILY AND ACUTE PAIN

Michael D Davis BA, Melanie A Badali MA, Kenneth D Craig PhD
Department of Psychology, University of British Columbia, 2136 West Mall, Vancouver, British Columbia, V6T 1Z4; Phone: 604.822.5280; E-mail: mdavis4583@aol.com

AIMS: Familial factors could account for variability in young adults' pain experience and expression. Specifically, significant others' displays of pain may affect everyday pain status as well as the expression of acute pain. The present study examined the relationship between number of reported pain models and indices of daily pains and acute, laboratory-induced pain.

METHODS: The Family Health Questionnaire (Koutantji et al., 1998) was administered to 40 healthy university students (20 male, 20 female), who subsequently underwent a hand-immersion cold pressor task. Participants rated their pain on a 100 mm Visual Analogue Scale and Verbal Rating Scales.

RESULTS: The number of self-identified pain models was significantly positively correlated with the amount of retrospectively reported personal pain sites and pain episodes over the last month. No significant relationships between number of pain models and retrospective reports of everyday pain intensity or self-reports of pain intensity or unpleasantness during the cold pressor task were observed.

CONCLUSIONS: A high number of reported pain models was associated with young adults' increased pain symptomology on the dimensions of number of pain sites and episodes, but not retrospective or current self-reports of pain intensity. While the study used a correlational design and causal inferences are not warranted, these findings suggest that family factors play a role in individual pain experience, and may be more related to the frequency and location of pain than the reported quality of the experience.

P-6

OPIOID USE FOR CHRONIC PAIN IN PREGNANCY: A RETROSPECTIVE REVIEW OF NEONATAL EFFECTS

Ibrahim Hadi MD, Orlando Dasilva MD FRCPC,
Renato Natale MD FRCSC, David Boyd MD FRCPC,
Patricia K Morley-Forster MD FRCPC
St. Joseph's Health Care, London, Ontario and University of Western Ontario, Interdisciplinary Pain Program

INTRODUCTION: Most of the literature on maternal and neonatal effects of opioids has dealt with an addicted population. [i]This introduces other risk factors which may account for the higher incidence of intrauterine growth retardation. [ii]The purpose of this retrospective study was to review neonatal outcomes of women who had been taking medically prescribed opioids throughout their pregnancy.

METHODS: The Neonatal Intensive Care Unit (NICU) database was searched from January 1, 1999 to September 30, 2002 at this tertiary obstetric unit in southwestern Ontario. All mothers who had a chronic pain diagnosis for which they were taking prescription opioids were identified. Those with a documented co-addiction disorder were excluded.

The following maternal data was collected: age, height, weight, parity, obstetric and medical antenatal risk factors, smoking / alcohol history, pain syndrome diagnosis, all medication doses, co-morbid medical problems, method of labour analgesia and mode of delivery.

Neonatal variables collected were gestational age, birth weight, length, head circumference, Apgar scores at 1 and 5 minutes, umbilical venous/arterial gases, neonatal abstinence score, urine/meconium drug screen, administration of naloxone, need for mechanical ventilation, duration of ventilatory support, days in NICU.

RESULTS AND CONCLUSIONS: Thirteen cases were analyzed. Opioids prescribed included oxycodone,codeine, meperidine, fentanyl, dilaudid, morphine, and methadone.

Neonatal Data (n=13)
( ) = range

Mean G. Age (Days)	Mean Wt. (gm)	Mean HeadCirc (cm)	Mean Length (cm)	No. with 1min Apgar< 6	No. with 5 min Apgar< 6	Abstinence Score>8 Day 1
260 (197-289)	2,788 (920-3965)	32.8 (26-35.5)	46 (31-55)	4	2	5*

(*2 intubated -unable to score)

Maternal Data (n=13)

Mean Age (yrs)	Mean BMI Index	NO. PRIMIPAROUS	C/S	SMOKERS
33.5	25.9	0	4	5

CONCLUSION: Neonatal growth markers in this population were within normal limits. 38.5% of neonates were diagnosed to have opioid abstinence syndrome.

[i]*Sinha C et al. Int J Gyn Ob 2001;74:241-246*
[ii]*Naeye RLet al. J Pediatr 1973;83:1055-1061*

P-7

PATIENT SATISFACTION WITH PAIN MANAGEMENT, POST RHEUMATOLOGIST VISIT

Colby Hansen M2, Lisa Durian N4, Paul Peloso MD
University of Iowa Health Care, Iowa City, Iowa, USA

INTRODUCTION: Physician's consistently under-estimate pain severity in acute settings. Pain assessment and management in outpatient rheumatology has not been systematically studied.

METHODS: All patients over 18 attending rheumatology outpatient clinics from June 24 to August 9, 2002, were invited. Telephone follow up was at 1 week & 1 month. Rheumatologists were blinded to study hypotheses. We measured demographics (age, gender, diagnosis, comorbid illnesses), Pain measures (inflammatory or not, location, duration, McGill SF, vonKorff Chronic Pain Grade, therapies recommended), Mood disorders (Hospital Anxiety Depression scale). Outcomes were: Current Pain, Pain Relief, Patients perception of rheumatologists' interest in pain, Satisfaction with visit.

RESULTS: 646 patients attended clinic, 310 were approached, 257 consented, 191 completed 1 week interview, 119 completed 1 month interview. At 1 week there were 144 females, 47 males. 146 patients had mixed pain types. Mean pain rating was 3.2/10, with 10 = severe pain. 32% had high disability on the vonKorff index. Opioids, prednisone and DMARDs were described as most effective, compared to acetaminophen & NSAIDs. 93% agreed or strongly agreed that rheumatologists were interested in their pain and intent on relieving it.

CONCLUSIONS: Our 1 week results suggest a majority had mixed pain types, suggesting several pain strategies are appropriate for optimal care. A significant proportion had high pain disability. Overall patients were satisfied with their rheumatologists' pain care.

P-8

PREDICTING PAIN AND FUNCTION IN ACUTE AND CHRONIC PAIN: CONTRIBUTION OF EMOTIONAL COMPETENCY AND COPING STRATEGIES

Derek Julian BSc
Department of Psychology, Trent University, Peterborough, Ontario

AIM OF INVESTIGATION: Emotions and coping strategies are considered essential components of the biopsychosocial model and the extremely complicated challenge of assessing and treating pain. Debate continues around the causal link between psychological distress, pain and function in the pain population. The present study investigated the relationship between emotional competency, coping strategies, pain and function in acute and chronic nonmalignant pain patients.

METHOD: Participants were 215 nonmalignant pain patients (98 acute and 117 chronic).

Structural Equation Modeling was utilized to determine an a priori hypothesized 4-factor model. The latent variables were emotional compe-

tency, measured through alexithymia (TAS-20) and emotional intelligence (EQ-i:Short); coping, measured with the Coping with Health Injuries and Problems (CHIP); pain, measured through multidimensional approach (VAS, McGill Pain Questionnaire and Modified Somatic Preoccupation Questionnaire) and function, measured through the 4 factors of the Dallas Pain Questionnaire.

RESULTS: The hypothesized 4-factor model yielded excellent fit to the observed data. The results indicate that emotional competency is a strong predictor of pain and function. Emotional preoccupation coping was a significant mediating variable between emotional competency and dependent variables pain and function.

CONCLUSION: Clinicians treating and assessing pain are encouraged to consider the importance of a new construct, emotional competency, and the mediating role of emotional coping styles in the prediction of pain and function. Future directions are discussed.

P-9

MANAGEMENT OF CHRONIC NON-CANCER PAIN (CNCP): ASSESSING THE NEEDS OF HEALTH CARE PROVIDERS

Eva Kogan BSc(Hon), Wasser Pain Management Center, Mount Sinai Hospital, University of Toronto; University of Western Ontario, Medicine, class of 2004
Manijeh Panahian-Jand MD, Wasser Pain Management Center, Mount Sinai Hospital, University of Toronto
Allan S Gordon MD, FRCP(C); Neurologist and Director, Wasser Pain Management Centre, Mount Sinai Hospital, University of Toronto; Associate Professor, University of Toronto

BACKGROUND: The Wasser Pain Management Center is a quaternary Care center that specializes in new and innovative methods to treat chronic non-cancer pain (CNCP). The center treats over 5000 current patients and has a referral base of approximately 2450 medical and dental practitioners. In order to ameliorate patient care, we hope to better understand the needs of health care providers.

METHODS: We devised an anonymous questionnaire that was mailed to our entire referral base. Survey questions related to demographics, practice style, and current CNCP management issues. Five hundred surveys were returned to us by mail.

RESULTS: In terms of demographics, most respondents were primary care providers: 52% were family physicians, and 21% were general dentists. Almost half (49%) of those surveyed had been in practice for over 20 years, and 61% claimed their access to pain management services was somewhat inadequate or worse. The most common analgesics used to treat CNCP were NSAIDS, acetaminophen, and combination opiate products. Over 30% of respondents felt either hesitant or uncomfortable prescribing opiates for CNCP. Furthermore, a majority (57%) felt concern that professional bodies did not support opiate use for this indication. The most common adjunctive modalities used for CNCP treatment were rehabilitation, psychology, and alternative medicine.

CONCLUSIONS: We explored the management of CNCP in a referral base comprised largely of primary care providers. Management styles were quite varied but correlated weakly or not at all with the demographics of this population. Education and access to services were two identified needs of this group.

P-10

DIFFERENTIAL NEUROTROPHIC REQUIREMENTS FOR THE DEVELOPMENT AND MAINTENANCE OF SYMPATHO-SENSORY SPROUTING IN ADULT MICE FOLLOWING SCIATIC NERVE INJURY

KM Krol MSc, NK Dhanoa BScH, MD Kawaja PhD
Department of Anatomy & Cell Biology, Queen's University, Kingston, Ontario

Peripheral nerve injury can result in the invasion of sympathetic axons throughout sensory ganglia and the formation of sympathetic plexuses around sensory perikarya, termed sympatho-sensory sprouting. This anatomical coupling has been proposed as a substrate for some neuropathic pain states. Neuronal expression of the nerve growth factor (NGF) receptors trkA and p75NTR, as well as brain-derived neurotrophic factor (BDNF), have all been shown to regulate and differentially influence sympathetic axon growth *in vitro* and *in vivo*. Likewise, other factors such as leukemia inhibitory factor (LIF), derived from non-neuronal cells have potent effects on sympathetic axons. Thus we have examined the role that each plays during sympathetic sprouting into sensory ganglia of mice with sciatic nerve injury. In this investigation, we have used adult mice carrying one mutated allele for trkA, p75NTR, BDNF, or LIF; as well as adult mice having two mutated alleles for p75NTR, or LIF to assess the extent to which each of these elements contribute to this aberrant growth. We report that $trkA^{+/-}$ mice displayed a reduced capacity for injury-induced sympatho-sensory sprouting, while depleting sympathetic p75NTR expression coincided with a considerably augmented sympatho-sensory sprouting response. $BDNF^{+/-}$ mice exhibited a modestly better faculty for injury-induced sympathetic sprouting compared controls, while preliminary results suggest that LIF is required for the generation of injury-induced sympatho-sensory sprouting. These data provide new insight into the cellular mechanisms that contribute to sympatho-sensory sprouting in adult mammals, revealing that trkA, p75NTR, BDNF, and LIF play significant roles in defining growth responses by sympathetic axons.

Supported by CIHR: grant to MDK, Doctoral Research Award to KMK.

P-11

DEVELOPMENT AND EVALUATION OF A "DEVELOPMENTAL LIFE-CONTEXT MODEL" OF AGE-RELATED CHANGES IN COPING WITH PAIN

Diane L LaChapelle MA[1,2], Thomas Hadjistavropoulos PhD[1]
[1]University of Regina, [2]University of New Brunswick - Fredericton

INTRODUCTION/PURPOSE: According to stress and coping models of pain, variability in adjustment to pain is largely dependant upon the individual's evaluation of the pain and the coping strategies he or she employs (Haythornthwaite et al., 1998). Developmental issues have not been emphasized in empirical investigations of coping with pain, although there are theoretical grounds for anticipating changes in coping across the lifespan (e.g., Losoya et al., 1998, McCrae, 1982). The overall goal of this research was to develop and evaluate a conceptually derived model of age-related changes in coping with pain. Integrating aspects of developmental and contextual models of coping (e.g., Brandstädter, 1989; Folkman & Lazarus, 1980), a "Developmental Life-Context Model" was developed and tested. In essence, this model proposes that, compared to younger individuals, older individuals use more intrapersonal emotion-focused strategies and less interpersonal problem-focused strategies to cope with pain.

METHOD: Self-reported questionnaire data related to the pain experience, adjustment to pain, and coping strategy use were collected from 280 persons with pain (age range: 18-89).

RESULTS: Analysis of participants' responses provided support for the assumptions underlying the proposed model. Also, as hypothesized, older adults used less interpersonal problem-focused strategies when coping with pain. Contrary to expectations, however, older adults also used less intrapersonal emotion-focused strategies.

CONCLUSIONS: Mixed support for the Developmental Life-Context Model was obtained. Implications of the results for the proposed model and recommendations for further refinement of the model are discussed.

P-12
THE SAFETY OF MORPHINE IN PRETERM AND TERM NEONATES UNDERGOING PERCUTANEOUS VENOUS CATHETER PLACEMENT

Charlene Lee BScPhm[1-4], Anna Taddio BScPhm MSc PhD[1], Vibhuti Shah MD[3], Boriana Parvez MD[2], Omar Parvez[2], Lisa O'Brien BSc[2], Gideon Koren MD[2]
Departments of Pharmacy[1] and Paediatrics[2], The Hospital for Sick Children; Departments of Paediatrics[3] and Pharmacy[4], Mount Sinai Hospital, Toronto, Ontario

AIM OF THE STUDY: Percutaneous venous catheter (PCVC) placement is a painful procedure performed in neonates requiring long-term venous access. Although analgesics are occasionally used to manage pain, there is a lack of published safety and effectiveness data. The objective of this interim analysis was to determine the safety of morphine for PCVC placement.

STUDY DESIGN AND METHODS: Double-blind, randomized, controlled trial in preterm and full-term infants on assisted ventilation or continuous positive airway pressure (CPAP). Infants received either: 1) amethocaine (1g for 40 minutes) and placebo morphine (dextrose); 2) morphine (0.1mg/kg intravenously) and placebo amethocaine; or 3) amethocaine and morphine, prior to PCVC placement. Respiratory and cardiovascular parameters were monitored for 24 hours.

RESULTS: An interim analysis of 59 participants demonstrated no differences among groups in demographic characteristics (ANOVA; $p>0.05$). Repeated measures ANOVA revealed no differences among groups in rate of ventilation ($p=0.67$), FiO_2 ($p=0.56$), oxygen saturation ($p=0.93$), and mean arterial pressure ($p=0.72$). Heart rate was higher in the amethocaine group ($p=0.003$). 38% of amethocaine-treated infants, 24% of the morphine-treated infants and 41% of the combination-treated infants, had increased FiO2 requirements ($p=0.9$). Of note, 29%, 24% and 29%, respectively, were already receiving morphine infusions as part of their clinical care. Concurrent morphine administration was not associated with deleterious effects on respiratory parameters ($p>0.05$).

CONCLUSIONS: Pre-treatment of PCVC placement pain with morphine does not appear to be associated with short-term adverse cardiovascular and respiratory effects in preterm and full-term infants on assisted ventilation or CPAP.

P-13
PROFESSIONALS' AND STUDENTS' OPINIONS OF PAIN IN CHILDREN WITH COGNITIVE IMPAIRMENT

Jill MacLaren BS
West Virginia University, Morgantown, West Virginia, USA
Lynn Breau PhD[1,2], Carol Camfield MD[3,4], Patrick McGrath PhD OC[1,2,4,5], G Allen Finley MD[1,2,5,6]
[1]Pediatric Pain Research Lab, [2]Pediatric Pain Management Service and [3]Division of Child Neurology; IWK Health Centre, Halifax, Nova Scotia; Departments of [4]Pediatrics, [5]Psychology, and [6]Anesthesia, Dalhousie University, Halifax, Nova Scotia

AIM: Pain in children with cognitive impairment (CI) is difficult to detect and attitudes may compound this difficulty. The current study explored factors associated with attitudes toward pain in children with CI held by health care professionals (physicians and nurses) and students (medical and nursing).

METHOD: 134 Participants completed the Mental Retardation Attitude Inventory-Revised (MRAI-R; Antonak & Harth, 1994) and Pain Opinion Questionnaire (POQ) eliciting beliefs toward 5 pain facets (sensitivity, frequency, emotional reaction, behavioral reaction, communication) in children with CI.

RESULTS: Factors found to affect opinions regarding pain in children with CI were: age of respondent, level of impairment of the child, pain facet under consideration, as well as specific attitudes regarding the segregation of individuals with mental challenges. Factors not found to have an effect on opinions regarding pain were: knowledge of the life circumstances of people with CI, frequency and intensity of contact with people with CI, and amount of personal and professional contact with people with CI. There was also no effect of education status (professional vs. student), or profession (medicine vs. nursing).

CONCLUSIONS: Results of this study indicate attitudes toward pain in children with CI do exist and are affected by several factors. The failure to find effects of education status and knowledge and experience variables is interesting as it differs from previous findings examining these variables. Implications of these findings are discussed.

P-14
A SYSTEMATIC REVIEW OF PSYCHOEDUCATIONAL INTERVENTIONS FOR CHRONIC STABLE ANGINA MANAGEMENT

Michael McGillion RN PhD(student)[1], Julie Kim, RN MN ACNP[2], Judy Watt-Watson RN PhD[1], Anthony Graham MD FRCPC[2]
[1]University of Toronto, Faculty of Nursing, [2]St. Michael's Hospital, Cardiology Division

Chronic stable angina (CSA) is a cardinal symptom of coronary artery disease (CAD). This common clinical problem has a major impact on CSA patients' health-related quality of life (HRQOL) including general health status, disability and self-care. Current Ontario guidelines for CAD rehabilitation and prevention provide detailed information on the benefits of risk factor modification post cardiac event/revascularization. However, there are few data on the effectiveness of psychoeducation interventions that target HRQOL, a known key predictor of disability and health service utilization. A systematic review of randomized controlled trials testing the effects of psychoeducation on HRQOL, angina symptoms and related outcomes was conducted. Following a comprehensive literature review, six primary studies (1994-2002) were included that had (1) specified treatment and control conditions, (2) participants with anigna class I-III (Canadian Cardiovascular Society) and (3) treatment interventions that employed cognitive and behavioural CSA management strategies. These studies were reviewed for methodological rigor. Effect sizes were determined and the statistical heterogeneity of the data were evaluated via chi square distribution analysis. While positive effects were reported on angina symptoms, psychological stress and physical activity, numerous methodological problems with respect to sampling, randomization, controls, measures, and data analyses precluded generalization. A pooled common effect could not be determined due to heterogeneity of outcomes, measures, and analyses. The effectiveness of psychoeducation interventions for improving HRQOL and related outcomes for CSA patients is inconclusive. Future RCTs of CSA psychoeducation programs require methodologically robust methods to reduce biases and random error, and to enhance the generalizability of findings.

P-15
TREATMENT OF CHRONIC PAIN WITH BOTULINUM TOXIN TYPE-A: THE EARLY WASSER PAIN MANAGEMENT CENTRE EXPERIENCE

A Moncarz DDS dip anaes[1], P Haddad DDS[2], MB Goldberg MSc DDS dip perio[3], A Gordon MD FRCP(C)[4], D Mock DDS PhD FRCD(C)[5]
[1]MSc candidate, Faculty of Dentistry, University of Toronto; [2]Dental resident, Toronto General Hospital; [3]Department of Dentistry, Wasser Pain Management Centre, Mount Sinai Hospital; [4]Neurologist and Director, Wasser Pain Management Centre, Mount Sinai Hospital; [5]Associate Director, Wasser Pain Management Centre, Mount Sinai Hospital, Professor and Dean, Faculty of Dentistry, University of Toronto

AIM: The aim of this retrospective case-series analysis was to evaluate the effectiveness of Botulinum Toxin Type-A injection therapy in treating chronic pain in various sites in the body.

METHODS: Patient charts were reviewed for all patients injected with Botulinum Toxin Type-A at the Wasser Pain Management Centre, Mount Sinai Hospital, Toronto, Canada between October 2000 and August 2001. Information was collected and analyzed with regards to patient demographics, site(s) of injection, follow-up period, patient-reported improve-

ment following injection(s), and adverse outcomes. These cases represent the initial application of this form of therapy at the Wasser.
RESULTS: 35 patients were treated during the 10-month period. 85.7% of the patients were female. The patients ranged in age from 19 to 61 years with a mean age of 43 years. The follow-up period ranged from 7 to 180 days with a mean follow-up period of 48 days. 34% of the patients were injected multiple times. There were a total of 79 sites of injection in the 35 patients through the time period investigated. 62% of all injections were in the head and neck. Regarding pain status, in 68.6% of cases "some improvement" or "some improvement with eventual return to baseline" was noted. There was a trend towards injections in upper body leading to improvement more often than injections in lower body (p=0.19). There were two reported adverse outcomes (2.5% incidence); additionally there were two reports of muscle weakness after injection.
CONCLUSIONS: Preliminary findings indicate that Botulinum Toxin Type-A may be an effective addition to the armamentarium for the management of chronic pain. Specific treatment protocols were subsequently developed and are currently being evaluated.

P-16
VALIDATION OF THE EXPERIENCE OF REHABILITATION QUESTIONNAIRE

Tula Paul BA
University of Alberta

AIMS: Knish and Calder (1999) created The Experience of Rehabilitation Questionnaire and, through concept mapping, clustered the experience of men with lower back pain into seven groups. Three of the clusters are identified in the current chronic pain belief literature: catastrophizing/depression, medication use and coping. Four of the clusters are not addressed in current literature: accepting limitations, denial/regret, cautious realism, and responsibility for rehabilitation. This proposal has intuitive and clinical appeal, but, as with any new approach, there exists a need to validate the instrument prior to implementation.
METHODS: The Experience of Rehabilitation Questionnaire, along with The Coping Strategies Questionnaire, The Beck Depression Inventory-II, The Pain Disability Index, and the Pain Stages of Change Questionnaire were administered upon intake and discharge from a rehabilitation program at a WCB Rehabilitation Centre.
RESULTS: Using the Pearson product moment coefficient a correlation analyses will determine convergent and divergent validity between the measures administered, for both intake and discharge, and reliability determined with the Cronbach alpha.
CONCLUSIONS: This research adds to our understanding of chronic pain through the validation of a new clinical tool to help identify the needs and state of the client more effectively. It promises to aid in the development and evaluation of programs to overcome barriers to return to employment, through improving both the practitioner and client's view of their internal process and progression of chronic pain.

P-17
VULVALGESIOMETER: A NEW INSTRUMENT FOR GENITAL PAIN ASSESSMENT

Caroline F Pukall BA PhD Candidate[1], Yitzchak M Binik PhD[1,2], Samir Khalifé MD[3]
[1]Department of Psychology, McGill University, Montreal, Quebec; [2]Sex and Couple Therapy Service, Department of Psychology, McGill University Health Center (Royal Victoria Hospital), Montreal, Quebec; [3]Departments of Obstetrics and Gynecology, McGill University and Jewish General Hospital, Montreal, Quebec

AIM: Vulvar vestibulitis syndrome (VVS) is a common form of painful intercourse in pre-menopausal women, affecting 12% in the general population. Women with VVS experience a severe, cutting/burning pain at the vaginal entrance during penetration. The diagnosis is based on the cotton-swab test, during which a gynecologist palpates different vestibular areas. Although this test appears to be simple to perform, there are many variations of it in terms of locations tested, force used, and palpation order. These variations lead to problems when conducting research, since the cotton-swab test is not performed in a consistent manner across studies.
METHODS: A vulvalgesiometer, a simple mechanical device that exerts calibrated force levels from 3g to 1kg, was developed and used to measure pain thresholds in 14 women with VVS and 14 age-matched control women. Pain threshold testing started with the lowest force application at the 6 o'clock location of the vestibule, and consecutively higher forces were applied until pain was reported. Pain intensity and unpleasantness ratings from 0 to 10, and adjectives from the McGill Pain Questionnaire were recorded.
RESULTS: Women with VVS have significantly lower pain thresholds, and higher pain intensity and unpleasantness ratings than non-affected women. In addition, pain adjectives chosen by women with VVS were very similar to those used to describe their pain during intercourse.
CONCLUSIONS: The vulvalgesiometer is a promising instrument for pain measurement in the genital region of women with VVS, and may be useful for pain assessment in other genital pain problems (e.g., vulvodynia).

P-18
EFFECTS OF EMOTION INDUCED BY MUSIC ON EXPERIMENTAL PAIN

Mathieu Roy[1], Isabelle Peretz[1], Pierre Rainville[2]
[1]Département de psychologie, [2]Department de stomatologie, Université de Montréal, Montreal, Quebec

AIM: The influence of emotions on pain perception has been examined in few studies (Keefe, 2001) suggesting that negative emotions or moods can increase pain, while positive moods can decrease it. Music has been shown to evoke emotional states reliably (e.g. Khrumansl, 1997). We tested the effects of emotion induced by music on pain.
METHODS: Three experimental sessions were conducted in eight trained musicians (5 males, 3 females) to assess pain perception during the presentation of musical excerpts selected individually to produce sad and happy moods, and compared to a silent control (order counterbalanced). Subjects rated pain intensity and unpleasantness produced by 4-sec contact-heat stimulation at 40°C, 45°C, 47°C or 49°C, in each condition.
RESULTS: Pain ratings were analysed for trials where participants reported feeling the target emotion. Subjects felt more pain during sad than happy music ($p<0.05$). However only unpleasantness, but not intensity, ratings differed significantly from the silent control ($p<0.05$). This modulating effect of happy and sad music was greater for the temperatures that were consistently rated as painful (47°C, 49°C) ($p<0.05$).
CONCLUSIONS: The contrasting effect of sad and happy music, and the larger effect observed on unpleasantness ratings suggest an involvement of emotional rather than attentional mechanisms. These results suggest that emotions or moods induced by music can modulate the experience of pain.
Acknowledgements: funded by NSERC and FRSQ

P-19
SYSTEMATIC REVIEW OF THE ROLE OF THE N-METHYL D-ASPARTATE (NMDA) ANTAGONISTS IN PREVENTIVE ANALGESIA

Colin JL McCartney FRCA, Avinash Sinha FRCA, Joel Katz PhD
Department of Anesthesia and Pain Management, University Health Network and Department of Anesthesia, University of Toronto, Toronto, Ontario

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P-20
PERSISTENT BACK PAIN, OCCIPITOPOSTERIOR POSITION AND MATERNAL HANDS AND KNEES POSITIONING DURING LABOUR

Robyn Stremler RN MSc(A), Ellen Hodnett RN PhD, Patricia Petryshen RN PhD, Bonnie Stevens RN PhD, Andrew Willan PhD
University of Toronto, Toronto, Ontario, Canada

PROBLEM: During labor, persistent back pain (PBP) is thought to be associated with occipitoposterior (OP) fetal head position. PBP may suggest to the clinician that the fetus is OP, but there is little research evidence using reliable, valid methods of determination of fetal head position to support this assumption. Maternal adoption of hands and knees positioning may promote fetal head rotation via gravity and buoyancy, thereby reducing PBP.

RESEARCH QUESTIONS:

1) What percentage of women suspected of labouring with a fetus in OP position experience PBP?

2) What percentage of women experiencing PBP are confirmed by ultrasound to have a fetus in OP position?

3) For women laboring with a fetus in OP position, what is the effect of maternal hands and knees positioning on PBP?

DESIGN: A randomized, controlled trial design, with prognostic stratification for parity and anesthesia use.

SAMPLE PROCEDURES: Consent was sought from women presenting with clinical symptoms indicative of an OP fetus (e.g. persistent back pain, slow progress). Following confirmation of OP by ultrasound, 146 women were randomly assigned to the intervention group (at least 30 minutes of hands and knees positioning, over a 60 minute study period) or the control group (60 minutes of usual care positioning).

OUTCOME MEASURES: Fetal head position was determined by ultrasound. Pain was measured pre- and post-intervention by the Short Form-McGill Pain Questionnaire.

ANALYSIS: Data will be analyzed according to intention to treat principles.

RESULTS: Recruitment is complete. Analysis and interpretation will be complete by Spring 2003.

P-21
WHAT HURTS AND WHAT HELPS DURING DENTAL HYGIENE TREATMENT?

M Rubenstein BA[1], DA Tripp PhD[1], N Neish MSc[2], J Jacobson PhD[1], MJL Sullivan PhD[3]
[1]Queen's University, Kingston, Ontario; [2]School of Dental Hygiene, Dalhousie University, Halifax, Nova Scotia; [3]Universite De Montreal, Montreal, Quebec

AIM: Given the lack of research quantifying pain during various dental hygiene procedures, pain and pain coping attempts were explored in 48 patients (27 male, 21 female) undergoing routine dental hygiene treatment. Dental anxiety and self-efficacy of pain coping attempts were also explored in relation to pain.

METHOD: Patients were drawn using a convenience sample of consecutive referrals to the Dalhousie University Dental Hygiene clinic. After consent, patients underwent procedures and completed measures of dental hugiene practices, pain, and responded to a qualitative pain coping inquiry.

RESULTS: The majority of patients (79%) report none or very little pain during clinical procedures. In direct contrast, 21% of sample reported pain scores that were extreme in comparison to the majority. Empathic discussions with the hygienist, self-distraction from the pain, and information seeking from the hygienist, were the most often employed pain coping strategies. In dividing the sample by pain reports (i.e., low and high pain), no group differences in regards to dental anxiety, age, education, brushing habits, or the degree of treatment difficulty were found. However, the low pain group flossed more ($t=3.01$, $p<.005$) and had greater levels of self-efficacy for pain coping attempts ($t=2.28$, $p<.027$) than did the high pain group. There were no differences in how many pain coping strategies were reported between low and high pain groups as well as low and high self-efficacy for pain coping.

CONCLUSIONS: Results suggest that feelings of personal control during dental hygiene treatment may be a factor in successful pain management. Future research is discussed in terms of other cognitive factors (e.g., catastrophizing).

P-22
PREOPERATIVE CATASTROPHIZING, PAIN EXPECTANCIES AND POSTOPERATIVE PAIN FOLLOWING KNEE (ACL) SURGERY

DA Tripp PhD[1], J Jacobson PhD[1], A Ott BA[1], WD Stanish MD[2], MA Rubenstein BA[1]
[1]Queen's University, Kingston, Ontario
[2]Queen Elizabeth II Health Sciences Center, Halifax, Nova Scotia

AIM: Experimental research found that pain expectancies mediate the relationships between depressive symptoms, catastrophizing, and pain, and that catastrophizing is associated with pain underestimation (Sullivan, Rogers, & Kirsch, 2001).

METHODS: The current study re-examined these models in a population of recreational athletes (N=54) undergoing reconstructive surgery of the anterior cruciate ligament. Psychosocial predictors were measured 24-hours preoperatively and pain was measured 48-hours postoperatively.

RESULTS: Current findings do not support previous pain expectancy mediation models. Instead preoperative catastrophizing mediated the relationship between preoperative depression and postoperative pain. Similar to (Sullivan et al., 2001), however, catastrophizing was significantly associated with pain underestimation.

CONCLUSIONS: Findings are discussed in terms of the pain appraisal process and directions for further research.

P-23
COGNITIVE AND BEHAVIOURAL FACTORS IN FIBROMYALGIA

Janice J Montbriand BA, Dennis P Alfano PhD
Department of Psychology, University of Regina

AIM: Fibromyalgia (FM) is a multisystem rheumatic disorder that afflicts a significant proportion of the population. The aim of the study was to examine cognitive and behavioural functioning in FM.

METHODS: Twenty-one female participants were administered the following measures: Integrated Visual and Auditory Performance Test (IVA); Everyday Memory Questionnaire; Attention Deficit Hyperactivity Disorder (ADHD) Checklist; Impact of Event Scale; Fibromyalgia Impact Questionnaire.

RESULTS: The mean age of this sample was 51 years, mean level of education was 13 years, and length of time since diagnosis of FM was 7.5 years. Nine of the 21 participants (43%) demonstrated significant problems with attention on the IVA. Using DSM-IV symptom criteria, little evidence was found for ADHD in this sample. Six of the 21 participants (29%) endorsed symptoms consistent with those of Post-Traumatic Stress Disorder. Performance on the IVA was significantly and negatively correlated with endorsement of everyday memory dysfunction, level of fatigue, and depression. The direction of these correlations suggested that as fatigue and depression increased, attentional ability declined. Interestingly, performance on the IVA was not significantly correlated with pain severity.

CONCLUSIONS: The principal results of this study show that a large percentage of individuals with FM demonstrate objective deficits in attention that is significantly correlated with fatigue and depression, but not necessarily pain. These findings therefore underscore the need for further studies on cognitive and behavioural factors in FM.

P-24
MODULATION OF EXPERIMENTAL PAIN BY EMOTION INDUCED USING HYPNOSIS

Huynh Bao, Quoc Viet, Rainville Pierre PhD
Département de stomatologie, Faculté de médecine dentaire, Université de Montréal

AIM: The relations between pain and emotion is generally accepted but not well understood and few experimental studies have examined directly how different emotional states influence pain.

METHODS: We induced emotional states relevant to pain using hypnotic suggestions in 20 normal subjects during tonic heat pain tests (1-min. immersion of the hand in 45-47.5°C water). Subjects rated pain intensity and unpleasantness, desire to avoid pain, expectation of relief, emotional valence, and arousal in 4 conditions: a pre-hypnotic baseline and hypnotically induced relaxation, sadness, and anger. ECG activity was measured continuously.

RESULTS: Sadness and anger produced increases in pain (larger for unpleasantness), negative valence, arousal, desire to avoid pain, and decreases in expectation of relief (all p's < 0.05). Changes in pain unpleasantness induced by emotions were best predicted by changes in desire (R^2=0.69, p<.001) and expectation (R^2=0.42, p<.001) and these effects remained significant after removing intensity-related variance (partial correlation, p's<.001). Both negative emotions increased the stimulus-evoked cardiac responses (larger decreases in RR intervals; p<0.05) and these changes were most strongly correlated with increases in unpleasantness and arousal. All effects were stronger in more hypnotizable subjects.

CONCLUSIONS: This study confirms that negative emotions relevant to pain increase pain, and particularly pain unpleasantness. Results further suggest that the desire to avoid pain and the expectation of relief may mediate the effect of emotions on pain and they emphasize the functional relation between stimulus-evoked autonomic responses and pain affect.

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P-25
THE IMMEDIATE IMPACT OF PAIN ON THE DAILY FUNCTIONING OF CHILDREN WITH SEVERE COGNITIVE IMPAIRMENTS

LM Breau PhD[1,2], Carol Camfield MD[3,4,5], Patrick J McGrath PhD[1,2,4,5], G Allen Finley MD[1,5,6]
[1]Pediatric Pain Research Lab, Pediatric Pain Management Service and [3]Division of Child Neurology; IWK Health Centre, Halifax, Nova Scotia; Departments of [4]Pediatrics, [5]Psychology and [6]Anesthesia, Dalhousie University, Halifax, Nova Scotia

AIM: To document the impact of pain on the daily functioning of children with severe cognitive impairments

METHODS: Caregivers of 71 children, aged 3 to 18 years (32 girls), participated. Children functioned at levels expected at 8 to 14 months age (Vineland Adaptive Behavior Scales; VABS), and had diagnoses of moderate to profound mental retardation, cerebral palsy (51%), seizure disorders (36%) and visual impairments (47%). Caregivers completed the VABS at entry. From this, personalized Pain Diaries were constructed for each child that included a sample of that child's repertoire of abilities in the areas of communication, daily living skills, socialization and motor skills. Pain characteristics were also recorded. The proportion of skills displayed was compared for days with and without pain.

RESULTS: Children displayed a significant reduction in skills on days with pain across all areas of functioning (F(1,60) = 12.2, p = .001). MANOVA's indicated pain reduced functioning in communication (8-14%), daily living skills (9-15%), socialization (11-12%) and motor skills (8-12%). Functioning was not affected by medical stability, pain type (injury, illness, chronic condition, medical procedure) or pain duration. However, more intense pain lead to greater reduction in functioning F(12, 145.8) = 2.3, p = .01) and pain had a greater effect for children with more severe cognitive impairments (F(8,98) = 2.5, p = .02).

CONCLUSIONS: Pain reduces the ability of children with severe cognitive impairments to perform skills they have previously displayed. This effect is greater with more intense pain and for children with more severe cognitive impairments.

P-26
RISK FACTORS FOR PAIN IN CHILDREN WITH SEVERE COGNITIVE IMPAIRMENTS

LM Breau PhD[1,2], Carol Camfield MD[3,4,5], Patrick J McGrath PhD[1,2,4,5], G Allen Finley MD[1,5,6]
[1]Pediatric Pain Research Lab, Pediatric Pain Management Service and [3]Division of Child Neurology; IWK Health Centre, Halifax, Nova Scotia; Departments of [4]Pediatrics, [5]Psychology and [6]Anesthesia, Dalhousie University, Halifax, Nova Scotia

AIM: To determine factors that increase risk for specific types of pain in children with severe cognitive impairments.

METHODS: Caregivers of 94 children, aged 3 to 18 years, participated. Children had moderate to profound mental retardation, cerebral palsy (47%), seizure disorders (63%), visual impairments (45%) and were tube fed (27%). Over one year, caregivers completed four semi-structured Pain Surveys by telephone, reporting the cause of pain episodes over the previous week. Backward logistic regression analyses, on specific pain types, generated odds ratios (OR's) and c statistics indicated the percentage of pairs of children (one with pain, one without), in which the child with pain was correctly identified.

RESULTS: All final models were significant Accidental pain was predicted by lack of visual (OR = 5.8, CI 1.8-18.9) and leg impairment (OR = 4.2, CI = 1.4-14.0), with 82% correctly classified. Non-accidental pain was predicted by presence of generalized (OR = 4.1, CI = 1.2-14.0) or focal seizures (OR = 3.8, CI = 1.1-13.3), leg impairment (OR = 4.4, CI = 1.3-15.7) and higher medication use (OR = 5.4, CI = 1.6-18.3), with 78% correctly classified. The remaining models included 1 to 5 significant predictors and correctly identified the child with pain for musculoskeletal (74%), infection (89%), gastrointestinal (75%), recurrent (85%) and common childhood pain (77%).

CONCLUSIONS: Unique combinations of child factors increase risk for pain due to specific causes in this group of children. These factors should be considered when determination of the source of pain is difficult.

P-27
THE INCIDENCE OF PAIN IN CHILDREN WITH SEVERE COGNITIVE IMPAIRMENTS

LM Breau PhD[1,2], Carol Camfield MD[3,4,5], Patrick J McGrath PhD[1,2,4,5], G Allen Finley MD[1,5,6]
[1]Pediatric Pain Research Lab, Pediatric Pain Management Service and [3]Division of Child Neurology; IWK Health Centre, Halifax, Nova Scotia; Departments of [4]Pediatrics, [5]Psychology and [6]Anesthesia, Dalhousie University, Halifax, Nova Scotia

AIM: To document the frequency, duration and intensity of pain experienced by children with severe cognitive impairments.

METHODS: Caregivers of 94 children, aged 3 to 18.7 years (M = 10.1, SD = 4.3), participated. Children functioned at levels expected at 8 to 14 months age (Vineland Adaptive Behavior Scales) and had diagnoses of moderate (10%), severe (65%) or profound mental retardation (17%), cerebral palsy (47%), seizure disorders (63%) and visual impairments (45%). Caregivers completed measures of children's adaptive abilities and provided demographic information. Medical information was obtained from children's medical records. Over one year, caregivers completed four semi-structured Pain Surveys by telephone, reporting the cause, duration and intensity of pain their child experienced over the previous week.

RESULTS: 406 episodes of pain occurred. Over the four weeks: 78% of children experienced pain at least once, 62% of children had pain not due to accidents or medical procedures. Accidental pain was most frequent (30% children), followed by gastrointestinal (22%), infection (20%) and musculoskeletal (19%). Each week, 35% to 52% of children had pain. The average duration of pain was 9 hours and pain due to infection lasted longest. Pain of unknown origin was most intense. There was little variation in pain due to age or gender, but children who had fewest abilities

experienced more pain and children with greater motor abilities experienced the most accidental pain.
CONCLUSIONS: Children with cognitive impairments experience pain frequently and most is not due to accidental injury. Children with fewest abilities experience the most pain.

P-28
SELF-REPORT MEASURES FOR PEDIATRIC PAIN ASSESSMENT: IMPACT OF SCALE FORMAT ON NURSES' RATINGS OF CLINICALLY SIGNIFICANT PAIN

Christine T Chambers PhD, Carl L von Baeyer PhD, Carolyne Montgomery MD FRCPC, Colleen Court RN BSN, Janine Hardial BSc
University of British Columbia, BC Research Institute for Children's and Women's Health, and University of Saskatchewan

Self-report measures are commonly used to assess children's pain. The purpose of this study was to examine the impact of self-report scale format on nurses' ratings of clinically significant pain. Participants were 237 pediatric nurses who responded to a survey regarding pain in children. The survey consisted of three hypothetical vignettes about a child experiencing post-operative pain, injury pain, or headache. Nurses rated the level of pain at which each child would require either comfort or analgesic intervention (i.e., clinically significant pain) using either a 0 to 10 Numeric Rating Scale (NRS), the Faces Pain Scale - Revised (FPS-R), or the Wong-Baker FACES scale (FACES). ANOVAs with post-hoc testing revealed that nurses rated significantly higher treatment thresholds for both comfort and pharmacological intervention when using the FACES scale for each of the vignettes, with the exception of the pharmacological intervention for postoperative pain, where there no were no differences among scales. For the injury vignette, ratings provided for pharmacological intervention with the FPS-R were higher than those provided with the NRS. The reverse was true for comfort intervention for the headache vignette. These results indicate that differences in self-report scale format affect the intensity of pain that nurses rate as clinically significant.

P-29
RECEPTOR ACTIVATION IS NOT THE MAIN RESCUE MECHANISM OF MORPHINE IN PEROXYNITRITE-INDUCED DEATH OF HUMAN NEUROBLASTOMA SH-SY5Y CELLS

Young-Pyo Cheong MD, Yong Son MD
Department of Anesthesiology, Wonkwang University School of Medicine, Iksan City, South Korea 570-711

AIM: We examined the effect of morphine on NO- and peroxynitrite-induced cell death using human neuroblastoma SH-SY5Y cells.
METHODS: The cultured cells were pretreated with morphine(100 μM) and exposed to 3-morpholinosydnonimine(SIN-1, 1mM). Agarose gel electrophoresis of DNA was done with the extracts from SH-SY5Y cells. The cells were treated with selective ligands for opioid receptor subtypes and with PI3-kinase inhibitors. Cellular damages were assessed by using an MTT assay. Spectrophotometric absorption spectra were measured from the mixture of morphine(100 μM) plus peroxynitrite(1 μM) at room temperature.
RESULTS: SIN-1 treated cells showed the chromosomal DNA fragmentation. Pretreatment with morphine before SIN-1 inhibited the fragmentation. [D-Ala^2, N-Me-Phe^4, Gly-ol^5]enkephalin (DAMGO), [D-Pen^{2,5}]enkephalin (DPDPE) and U-69593 at the concentration of 10 μM did not prevent the cell death induced by SIN-1. Naloxone (20 μM) hardly antagonized the effect of morphine in SIN-1-induced cell death. PI3-kinase inhibitors, Wortmannin and LY294002, did not inhibit the action of morphine on apoptotic cell death. In the measurements of spectrophotometric absorption spectra, the peak of the absorbance of the mixture of morphine plus peroxynitrite at 295-300 nm was disappeared three minutes after mixing.
CONCLUSIONS: The present study showed that morphine protected the human neuroblastoma cell line, SH-SY5Y, from peroxynitrite-induced apoptotic cell death. However, it is suggested that the protective action of morphine is not via the activation of opioid receptors and/or PI3-kinase pathway but possibly via other unknown mechanism.

P-30
INTRATHECAL ANTI-NGF NORMALIZES OPIOID EFFECTIVENESS IN AN ANIMAL MODEL OF CENTRAL INFLAMMATION

Dimitris Xanthos BSc[3], Terence J Coderre PhD[1,2,3]
[1]Departments of Anesthesia, [2]Neurology & Neurosurgery, and [3]Psychology, McGill University, Montreal, Quebec

Inflammation of peripheral tissues produces thermal hyperalgesia and a paradoxical increase in opioid efficacy. We have recently shown that central inflammation induced by intrathecal administration of lipopolysaccharide (LPS) produces a similar increase in opioid efficacy. We have also shown that an opposing decrease in opioid efficacy observed in neuropathic animals is alleviated by chronic intrathecal administration of nerve growth factor (NGF). In this study, we assessed the effect of anti-NGF in reducing the increased opioid sensitivity of LPS-treated rats. LPS was administered intrathecally at a low "priming" dose on day 1, followed by a high "challenge" dose 24 hours later. On day 2, anti-NGF was administered by lumbar puncture between L4 and L5 vertebrae prior to intrathecal morphine administration and latencies to exhibit nociceptive responses were measured on a 51°C hot-plate at 30 minute post-morphine. LPS produced an increase in morphine analgesia that was reversed with anti-NGF administration. We hypothesize that this effect may be due to the action of anti-NGF influencing the spinal levels of cholecystokinin (CCK).

P-31
COST-EFFECTIVENESS OF THE CHRONIC PAIN SELF-MANAGEMENT PROGRAM

Denise Guerriere RN PhD[1], Sandra LeFort MN PhD[2], Judy H Watt-Watson RN PhD[3], Bo Yon Linda Choi MSc[1], Ruth Croxford MSc[4], Peter C Coyte PhD[1]
[1]Department of Health Policy, Management and Evaluation, University of Toronto, Toronto, Ontario; [2]Faculty of Nursing, Memorial University of Newfoundland, St. John's, Newfoundland; [3]Faculty of Nursing, University of Toronto, Toronto, Ontario; [4]Clinical Epidemiology Unit, Sunnybrook and Women's College Health Sciences Centre, Toronto, Ontario

AIMS: The Chronic Pain Self-Management Program (CPSMP, LeFort 1998), developed for group presentation in community settings, emphasizes problem solving, mutual support, and individual experimentation with cognitive and behavioral self-management techniques. Pain reduction and improved quality of life have been reported by CPSMP participants.
The primary aim of this study was to examine the effectiveness of CPSMP in reducing health care utilization (physician visits, home care) and out-of-pocket expenses. A secondary aim was to confirm its usefulness in improving pain outcomes over the long term, in diverse settings.
METHODS: Two hundred individuals in urban and rural communities in three provinces (Newfoundland, Ontario, Saskatchewan), suffering from chronic muscular?skeletal pain were enrolled in this randomized, controlled study. Subjects randomized to the treatment group were invited to participate in the CPSMP program. The Ambulatory and Home Care Record (©Coyte and Guerriere) was used to assess health care utilization, out?of?pocket expenses (medication, supplies), and time lost from work and leisure for a one-year period. Pain and quality of life measures were also obtained.
RESULTS: Analysis showed significant reduction in pain and improved quality of life in the treatment group compared to controls. Although health care utilization decreased over the one-year period in the intervention group, high variability in use resulted in no significant difference between the two groups.

CONCLUSION: A low-cost intervention suitable for delivery in varied urban and rural communities is effective and has the potential of providing cost-savings to both the health care system and the individual, and a decrease in time lost.

P-32
PAIN BEFORE AND AFTER INFRAINGUINAL BYPASS SURGERY

Susan DeVries RN MSc[1], Judy Watt-Watson RN PhD[2], Judy Costello RN MScN CCN(c)[1], Jane Graydon RN PhD[2]
[1]University Health Network, Toronto, Ontario; [2]University of Toronto, Faculty of Nursing, Toronto, Ontario

AIM: No literature was found that described pain in the immediate post-operative period for patients following infrainguinal bypass surgery. This descriptive study examined pain management and related concerns for patients undergoing infrainguinal bypass surgery.

METHOD: Data were collected from a convenience sample of 26 patients before and on the 3rd and 6th day after infrainguinal bypass surgery. Outcomes included pain intensity (McGill Pain Questionnaire [MPQ-SF], concerns about medications (Barriers Questionnaire-Short Form [BQ-SF], and analgesia from their chart. Patients were also asked for suggestions to improve pain management.

RESULTS: The majority of patients received inadequate analgesia despite reporting moderate to severe pain before and after surgery. On day 3, 53% received ≤ 40mg morphine equivalents despite considerable pain. Using ANOVA-RM, patients' pain intensity improved significantly from preoperatively to the 6th day after surgery, however, clinically the improvement was to only the moderate range (≥ 4) for 50% patients. At both post-surgery interviews, 25-33% patients described their pain as horrible or excruciating and women reported significantly higher pain scores than did men. Patients expressed concerns, particularly about constipation and addiction, that may have interfered with their reporting pain and taking analgesia. Patients were able to identify ways to improve their pain management, including more adequate analgesic use and related technology and help with positioning.

CONCLUSIONS: More adequate analgesic management was needed for these patients. Patients also needed education about addiction and ways to manage side effects. These data give direction for more effective pain management strategies for these patients.

P-33
PAIN MANAGEMENT FOR ACUTE CARE PSYCHIATRIC PATIENTS: A CHALLENGE FOR INNOVATIVE CARE

Anne Dewar RN PhD, Margaret Osborne RN PhD, Joan Bottorff RN PhD
School of Nursing University of British Columbia

Providing pain relief to patients who are experiencing acute mental illness presents a series of unique challenges that require innovative solutions. Assessing pain in psychiatric patients is multifaceted for several reasons. Nurses often find working with these patients frustrating particularly when a biological basis for their symptoms cannot be determined. Fear of exacerbating substance abuse adds to the complexity of assessment and treatment and in some age groups and in some cultures, it is more acceptable to express psychological distress as physical symptoms. Health professionals often lack current knowledge about pain management and this impacts on their clinical decision-making. A review of the literature indicates that there is a critical need for research as clinical discussions suggest that pain management for these patients is a major nursing challenge. The aim of this poster is to report upon the findings of a pilot study that assessed study protocols and approaches to examining pain management decisions amongst nurses in acute psychiatric settings. Data collection consisted of in-depth semi-structured interviews and a think-aloud technique. Using this technique nurses tape recorded their experiences of managing patient's pain. The primary advantage of the think-aloud technique is that it reveals the nurse's everyday world in a current and reflective manner. The appropriateness of these two data collection methods was assessed to refine study protocols for future projects.

P-34
SHORT-TERM MEMORY OF EXPERIMENTAL PAIN: DELAYED DISCRIMINATION

Jean-Charles Doucet, Pierre Rainville PhD
Faculté de médecine dentaire et Centre de recherche en science neurologiques, Université de Montréal

AIM: Characterize the short-term memory of pain produced by phasic noxious thermal stimulation applied to the skin.

METHOD: Two experiments were performed in eight and ten normal subjects, respectively. Subjects discriminated the intensity of pairs of 6-sec stimuli applied on the forearm using a 1x1cm contact thermode. In experiment 1, we examined the effect of the difference in temperature between the two stimuli (S1=47.5°C; S2=47.5-49.0°C). In experiment 2, we further examined the effect of the duration of the delay between S1 and S2 (6-14 sec.). At the end of Exp. 2, subjects rated pain intensity (0-100 VAS) for the different stimuli used.

RESULTS: In both experiments, higher S2 were associated with improvements in correct response rate, subjective levels of certainty, and speed of response (p's<0.05). The correct response rate and ratings of certainty gradually decreased with longer delays (Exp. 2; all p's < .05). However, there was a ceiling effect in the correct response rate for the larger S2 used (1.5°C; interaction Delay X delta-T°; $p<0.05$). Mean ratings for 47.5, 48.0, 48.5, and 49.0°C were 20, 34, 53 and 70, respectively.

CONCLUSION: These results suggest a fast and important time-dependent degradation of the memory trace of pain sensory information in short-term memory. The important decline in performance observed from 6 to 14 seconds for stimuli that differed by more than 30 points on the VAS scale may have important implications for the validity of retrospective ratings.

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P-35
DO NIDCAP BEHAVIORS MEASURE PRETERM INFANT RESPONSE TO ACUTE PAIN?

Liisa Holsti[1], Ruth Eckstein Grunau[1,2], Tim F Oberlander[1,2], Michael F Whitfield[2]
[1]Centre for Community Child Health Research, BC Research Institute for Childrens and Womens Health, Vancouver, British Columbia; [2]Department of Pediatrics, University of British Columbia, Vancouver, British Columbia

BACKGROUND: Behaviors of the NIDCAP may be developmentally appropriate for assessing acute pain response in preterm infants, however this requires validation.

OBJECTIVE: To examine concurrent validity of the NIDCAP with known behavioral and physiologic pain measures.

DESIGN/METHODS: N=44 infants (mean gestational age [GA] at birth 29.6 weeks, sd 2.0; mean birth weight 1289g, sd 388) were assessed at 32 weeks GA during routine blood collection (Baseline 6 min, Lance/squeeze 6 min and Recovery 6 min) in the NICU. The NIDCAP and Neonatal Facial Coding System (NFCS) were coded from 1-hour video. Heart rate (HR) was recorded with custom physiological processing software.

RESULTS: NFCS ($p<0.0001$) and HR ($p<0.001$) increased from Baseline to Lance/squeeze. Of the 49 NIDCAP movements 23 occurred in less than 25% of the infants and were dropped from further analysis. Flex arms ($p<0.01$), flex legs ($p<0.0001$)), extend arms ($p<0.02$), extend legs ($p<0.01$), finger splay ($p<0.048$), fisting ($p<0.004$), hand on face ($p<0.001$), and frown ($p<0.0001$) increased to Lance/squeeze. Twitch body ($p<0.001$), face ($p<0.0001$) and extremities ($p<0.0001$); mouthing ($p<0.02$)and foot clasping ($p<0.01$), decreased to Lance/squeeze. Diffuse squirms dropped during Recovery ($p<0.008$). Infants with lower GA at birth showed higher finger splays ($p<0.009$), fisting ($p<0.004$) and mouthing ($p<0.03$).

CONCLUSIONS: A subset of 8 NIDCAP movements are associated with acute pain in preterm infants, and can complement facial and physiologic measures. In particular, finger splay and fisting appear to be cues in infants born at lower GA (< 30 weeks). The study confirms previous findings that twitches are not stress cues.

P-36
CR OXYCODONE PROVIDES CLINICALLY SIGNIFICANT RELIEF OF NEUROPATHIC PAIN

CPN Watson MD, R Portenoy MD, J Eisenhoffer MD, AC Darke, PhD, P Richards MD, PhD, K Yang, PharmD
Department of Medicine, University of Toronto, Toronto, Ontario; Department of Pain Medicine and Palliative Care, Beth Israel Medical Center, New York, New York, USA; Scientific Affairs, Purdue Pharma, Pickering, Ontario; Medical Research, Purdue Pharma LP, Stamford, CT, USA

Efficacy and safety results from 2 studies of CR oxycodone (OxyContinÒ) in patients with at least moderate painful diabetic neuropathy (DN) and 1 study in patients with at least moderate post-herpetic neuralgia (PHN) demonstrated significantly improved pain control, and improved quality of life, compared with placebo. Using an 8 week double-blind, crossover design, patients with DN pain were randomized to CR oxycodone 10mg or active placebo (benztropine 0.25mg) q12h (Study 1) and patients with PHN pain were randomized to CR oxycodone 10mg or placebo q12h (Study 2) and titrated to a maximum of 40mg q12h. In Study 3, patients with DN pain were randomized to CR oxycodone 10mg or placebo q12h and titrated to a maximum of 60mg q12h for 6 weeks in a parallel group design. The number of patients evaluated for efficacy in studies 1, 2, and 3 were 36, 38, and 81/76 (CR oxycodone/placebo), respectively. Mean daily pain scores (0-100mm VAS; 0-10 scale) were lower for CR oxycodone than placebo in all three studies ($p \leq 0.002$): (21.8±20.7 mm vs 48.5±26.5mm;), (34.6±24.6 mm vs 53.9±24.9mm), and (4.2±2.3 vs 5.4± 2.2). Standardized Mental and Physical Components of SF-36 were significantly better for CR oxycodone in Study 1 ($p<0.001$, $p=0.034$). Disability was improved on CR oxycodone in study 2 ($p=0.041$), and in Study 3, Brief Pain Inventory scores (items: interference, relations, sleep, life enjoyment) were better on CR oxycodone ($p<0.001$ to 0.023). Using different placebo-controlled study designs, CR oxycodone was demonstrated to be effective in painful neuropathy.

P-37
EVALUATION OF THE PAIN RESOURCE NURSE ROLE IN PEDIATRIC CARE

Jacqueline A Ellis RN PhD[1], Lynn McCleary RN PhD[2], Betty Rowly RN BScN[3]
[1]School of Nursing, University of Ottawa, Ottawa, Ontario; [2]Baycrest Center for Geriatric Care, Toronto, Ontario, [3]Children's Hospital of Eastern Ontario (CHEO), Ottawa, Ontario

AIM: Pain resource nurses (PRNs), who act as pain management mentors can contribute to effective pain management. The objective of this study was to examine the PRN role in a pediatric setting. More specifically, to describe the role with respect to what activities PRNs engage in, the challenges they face, and the supports that help them to achieve the role.

METHODS: Focus group methodology was selected as the most appropriate way to learn about the nurses' experiences in the PRN role. Eighteen PRN's participated in one of three focus groups, six months after program implementation. The focus groups were audio taped and the tapes were transcribed verbatim. The transcripts were then analyzed using content analysis.

RESULTS: The PRN's described the essence of the role as providing support for best-practice pain management to their nurse-colleagues and to the multi-disciplinary team. They identified eight components of their role which included: 1) facilitate communication about pain; 2) act as a coach and mentor; 3) trouble-shoot problems that impact on pain management; 4) act as a champion or advocate; 5) monitor and evaluate pain practices; 6) educate the multidisciplinary team about pain issues; 7) engage the multidisciplinary team in pain-related activities, and; 8) individualize the hospital-wide pain management program to fit their unit. Specific strategies to operationalize these eight components were identified. In addition, the challenges faced by the PRN's in implementing the role and the supports they valued in the process were also identified.

CONCLUSION: Pediatric nursing staff can effectively carry out the role of the PRN. The role is multifaceted and maintaining the role requires commitment and enthusiasm on the part of the nurses and commitment and support from management. The PRN's have a powerful part to play in keeping best practice pain management on the agenda within their own patient-care unit and hospital-wide.

P-38
THE OTTAWA MODEL OF RESEARCH USE GUIDES THE IMPLEMENTATION OF BEST-PRACTICE PAIN MANAGEMENT AT A PEDIATRIC HOSPITAL

Jacqueline Ellis RN PhD[1], Lynn McCleary RN PhD[2], Renee Blouin RN Bsc N[3], Karen Dube RN-EC Med[3], Betty Rowley RN BscN3, Sally Tierny Bpharm[3], Carol Cook RN[3], Marion Rattray RN[3]
[1]School of Nursing, University of Ottawa, Ottawa, Ontario; [2]Baycrest Geriatric Center, Toronto, Ontario; [3]Children's Hospital of Eastern Ontario (CHEO), Ottawa, Ontario

AIM: The Nursing Pain Management Committee was established to develop strategies to improve nurses' pain assessment and management in all patient care areas at this pediatric hospital. A multifaceted, evidence-based program was designed and implemented over a period of 8 months. The purpose of this study was to evaluate the components of the program to gauge the impact on patient comfort and on nursing practice.

METHODS: The Ottawa Model of Research Use (OMRU) was selected as a framework to guide the implementation of the pain management program because it has proven relevance in a nursing context, incorporates elements of the diffusion of innovations literature, and it addresses both process and outcome.

RESULTS: Data collection is in progress and preliminary results indicate that some aspects of the program were more successful than others at changing practice. Pre and post measures, barriers and supports described in the focus groups and chart audit results will be discussed as to how they helped us to understand the impact of this program on patient comfort and practice.

CONCLUSION: The OMRU proved to be a useful framework to guide us through the process of implementing this hospital-wide program. One of the most important aspects of the program was the "local champions", nurses that were unit-based and helped to keep pain issues on the agenda. The problematic aspects of the program included the pain documentation record and a pain history record.

P-39
A PROSPECTIVE STUDY OF THE EFFICACY OF THE SPINAL CORD STIMULATOR FOR MANAGEMENT OF CHRONIC PAIN

IC Fedoroff PhD1, R Shick MD FRCP (C)1, W McDonald MD FRCPC1,2, M Ong MD FRPC (C)3
[1]Department of Psychiatry, [2]Department of Anesthesiology, [3]Department of Medicine, St. Paul's Hospital, Vancouver, British Columbia

There are patients for whom conventional methods of treatment for chronic pain (e.g., medications, physiotherapy) have not been successful. Spinal cord stimulation (SCS) is becoming a more accepted method of treating intractable pain conditions such as neuropathic pain, and complex regional pain syndrome. The purpose of this prospective study is to assess pain levels, quality of life, psychological state and physical function (including return to work) for patients who met medical and psychological criteria for a spinal cord stimulator. Thirty-four patients received a trial of the SCS of which 26 trials were successful. Twenty-two patients consented to participate in the 3, 6,12, 18 & 24 month follow-up study. Average pain

levels over time have decreased but levels of worst pain remain unchanged. Fifty percent of patients are experiencing 50% or greater pain relief. Ratings of satisfaction with pain relief are moderate. Fifty five percent of patients rate their ability to perform physical activities to have improved by 50% or better. Currently, 9/21 (43%) of patients has resumed either part-time or full-time work (of these patients, 2 never left work). Use of the healthcare system has decreased. Levels of depression and feelings of life control remain unchanged. While these early results look promising, it will be important to evaluate longer-term maintenance of function and quality of life.

P-40
RECRUITMENT OF CHILDREN'S HOSPITAL'S NURSES FOR RESEARCH ON IMPROVING PAIN PRACTICES

Francoise Filion MScN[1] , Celeste C Johnston DEd[1], Christina Rosmus MScN[2], Janet Rennick PhD[3], Micheline Hotte MScN[4], Hélène Patenaude PhD[5], Jackie Ellis PhD[6], Carla Shapiro MScN[7]
[1]McGill University; [2,3]Isaak Walton Killam Hospital, [3]Montreal Children's Hospital, [4]Hôpital Ste Justine, [5]Laval University, [6]University of Ottawa, [7]University of Manitoba

AIM: The goal is to examine the recruitment dropout rates of nurses working in six University's affiliate hospitals from December 2000 to November 2001 during the recruitment phase of the research project called "Coaching One to One for Pain Practices of Paediatric Nurses".

METHODS: Six University's affiliate hospitals were chosen to be part of the research project. Recruitment lasted 11 months and was done in a similar fashion in the different hospitals. The co-investigator of the project and a research assistant presented the project to the eligible nurses. An envelope with the consent and some questionnaires to fill was given to them. The researcher invited the nurses to bring back the envelope filled or not as soon as possible.

RESULTS: Participation rate amongst nurses varied between 17% and 68%. The dropout rate amongst study nurses varied between 18% and 53%. Reasons for refusal included no interest in research, lack of time, extra burden to a difficult situation. Reasons for transfer included moving, promotion, leaves (maternity, educational)). Three hospitals were randomized as experimental sites and the remaining three were control sites. The dropout rate of study nurses was similar in the experimental and control sites.

CONCLUSIONS: The low participation rate and the high abandon rate will be discussed taking into account the long project study time (24 months).

P-41
PROFILE OF RHEUMATIC DISEASE PATIENTS REFERRED TO A MULTIDISCIPLINARY PAIN CENTRE

A Almahrezi MBChB[2], M Ware MB BS[2], M-A Fitzcharles MBChB[1,2]
[1]Division of Rheumatology, McGill University, Montreal, Quebec
[2]McGill Pain Centre, McGill University, Montreal, Quebec

PURPOSE: Rheumatic diseases account for a large proportion of patients with pain. The number of rheumatology patients presenting challenges in terms of pain management and requiring referral to specialised pain centres is unknown. We have examined the numbers, characteristics and outcome of patients with rheumatic diseases referred to a tertiary care pain centre.

METHODS: All patients referred to the McGill University Pain Centre over a nine year period with a primary rheumatological diagnosis were studied. Demographic, clinical and pain characteristics, management and final outcome were assessed.

RESULTS: Of 1120 new patients, sixty (5%) had a rheumatologic diagnosis to account for pain and referral. The rheumatic disease diagnoses were as follows: fibromyalgia in 26 (43%), inflammatory arthritis in 17 (28%), degenerative arthritis in 9 (15%) and soft tissue rheumatism in 8 (13%). Assessment by a psychologist or physiotherapist/occupational therapist was done in 72% and 52% respectively. New pharmacologic treatments were prescribed for 47 (78%) patients: 47% opioids, 37% antidepressants, 12% NSAIDs, 8% tranquillisers and 18% other medications. Follow up was for a mean duration of 10.6 ±15 months. The final outcome was as follows: improved in 55 %, no change in 43% and worsened in 1.8%.

CONCLUSION: Although rheumatology patients accounted for a small proportion of patients evaluated, improvement was obtained in over half. Further study should identify patients most likely to benefit from referral to multidisciplinary pain centres, as well as the long term outcome of such interventions.

P-42
PAIN EXPERIENCE OF PATIENTS WITH RHEUMATOID ARTHRITIS

M-A Fitzcharles MB ChB[1,2], A Almahrezi MBChB[2], B Rowat BSc[1], M Ware MB BS[2]
[1]Division of Rheumatology, McGill University, Montreal, Quebec;
[2]McGill Pain Centre, McGill University, Montreal, Quebec

PURPOSE: Pain is a prominent symptom in rheumatic diseases. We examined current pain status, satisfaction with pain control and factors affecting optimal management in patients with rheumatoid arthritis(RA).

METHODS: Consecutively attending RA patients answered an interviewer administered questionnaire regarding disease characteristics, pain status, and barriers to pain control.

RESULTS: Sixty RA patients were interviewed. Pain was reported as absent - mild in 28 (47%) Group1, and moderate - severe in 32 (53%), Group 2. Significant differences between groups are shown as follows:

Significant variables associated with pain severity in RA

Variable	Group 1	Group 2
Age (yrs)	53	60
Health Assessment Questionnaire (HAQ)	.83	1.42
McGill pain questionnaire (MPQ)	14	20
Patient global-disease (VAS)	2.2	5.3
MD global-disease (VAS)	2.0	4.2
Patient pain (VAS)	2.8	5.8
MD pain (VAS)	2.3	5.0

Pain control was satisfactory for 65%, but even so 47% wished for additional pain relief. Barriers to pain management were reported by 95% and included: side effect of drugs 80%, dislike for "too many pills" 63%, drug interactions 57%, fear of addiction 35%, and masking disease 27%. Other than the use of NSAID's in 2/3 and acetaminophen in 1/3, analgesics or modalities to reduce pain were seldom used.

CONCLUSION: Important pain was present in over half of RA patients. More pain was associated with older age and poorer functional status. Barriers to pain control were common and may contribute to poor pain management. RA patients use limited mechanisms to deal with the symptom of pain.

P-43
SHORT-TERM MEMORY OF EXPERIMENTAL PAIN: RETROSPECTIVE RATINGS

Marie-Chantale Fortin BSc, Jean-Charles Doucet, Pierre Rainville PhD
Université de Montréal, Montreal, Quebec

AIM: Characterizing the short-term memory of pain sensation produced by phasic noxious thermal stimulation applied to the skin.

METHODS: Ten normal subjects received series of 6s painful thermal stimulations (47.5, 48.0, 48.5, 49.0°C) applied on the volar surface of their forearms with a 3x3cm contact thermode (MEDOC). Subjects rated the temporal progression of pain intensity on a visual analog scale concurrently with the stimulation or after a delay of 6, 10 or 14s. The effects of temperature and delay were evaluated on intensity (maximum and integral) and temporal (time-to-peak and total duration) measures obtained

from the continuous ratings.
RESULTS: A main effect of the temperature on the maximum and integral of the pain ratings confirmed that the subject were able to discriminate the different temperature (ANOVA; $p<0.001$). The delay caused a significant decrease in the integral of the continuous pain evaluation ($p<0.001$). In contrast, a decrease in maximum pain was observed only with the lower temperature while the higher temperature showed an increase in maximum pain (Temperature X Delay, $p<0.01$). The time-to-peak and overall duration decreased significantly and comparably with all delays ($p's<0.02$).
CONCLUSION: These results suggest a notable alteration of sensory information characterizing pain in short-term memory. In retrospective evaluations, the overall intensity (integral) and duration of pain were consistently underestimated but the maximum pain increased for more painful experiences. This may reflect the opposing effects of time-related degradation and salience-mediated amplification (contrast) of sensory information in memory.
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P-44
A SYSTEMATIC REVIEW OF THE USE OF METHADONE FOR THE TREATMENT OF CHRONIC NON-MALIGNANT PAIN

Elham Hamdan MB BCh[1], Andrea D Furlan PMD[1,2,3], Juan A Sandoval MD[1], Angela Mailis-Gagnon MD MSc FRCPC[1,2]
[1]Comprehensive Pain Program, Toronto Western Hospital, University Health Network; [2]University of Toronto Centre for Study of Pain; [3]Institute for Work & Health, Toronto, Ontario

BACKGROUND: Methadone is a synthetic opioid that has been used for the treatment of withdrawal symptoms in narcotic addiction. It was also shown to possess analgesic properties in both animal and human studies. In humans, several studies have been published looking at the analgesic properties of methadone in the treatment of pain.
OBJECTIVES: To assess the efficacy and effectiveness of methadone in chronic non-malignant pain and its adverse effects
SEARCH STRATEGY: We have searched Medline and Embase up to August 2002 and this search yielded 573 titles and abstracts.
SELECTION CRITERIA AND METHODS: We will select all controlled and uncontrolled study designs that used Methadone for chronic non-malignant pain management. We will use Jadad's scale to assess the methodological quality of these studies. Depending on the number, quality and homogeneity of the studies included, we will perform a meta-analysis. The results will be presented at the Canadian Pain Society Conference.

P-45
WHAT IS THE OPTIMAL EVIDENCE-BASED MANAGEMENT OF CHRONIC NON-SPECIFIC LOW-BACK PAIN?

Andrea D Furlan MD[1,2,3], Victoria Pennick RN BScN MHSc[3], Maurits van Tulder PhDy[3,4], Chantelle Garritty BSc[3], Claire Bombardier MD FRCPC[3,5,6,7]
[1]Comprehensive Pain Program, Toronto Western Hospital, University Health Network; [2]University of Toronto Centre for Study of Pain; [3]Institute for Work & Health, Toronto, Ontario; [4]EMGO Institute, The Netherlands; [5]University of Toronto, Ontario; [6]Toronto General Hospital, University Health Network, Ontario; [7]Mount Sinai Hospital, Toronto, Ontario

BACKGROUND: Low-back pain (LBP) is a major health problem in modern society with a major socio-economic impact. In Canada, 2% of the work force is disabled because of low-back pain, at a rate of 20 days absence per patient per year. Many therapies are commonly used in the management of LBP. At present, there are guidelines on the management of acute LBP (up to 3 months duration). There seems to be less consensus regarding the optimal management of chronic LBP (3 or more months duration), and to date, national guidelines for chronic LBP have not been published.
OBJECTIVES: To systematically assemble and analyze the scientific evidence on the effectiveness of commonly used conservative treatments for chronic non-specific LBP.
METHODS: Two reports were recently conducted and are summarized: The "Updated Critical Literature Review on the Treatment of Chronic LBP" from the Institute for Work & Health (April 2002) and "Low-back pain and Sciatica", Clinical Evidence 2001 (van Tulder and Koes). In these two reports, the following electronic databases were searched up to January 2002: MEDLINE, EMBASE, PsycINFO, CINAHL, HealthStar, Pain Relief and the Cochrane Controlled Trials Register. The following inclusion criteria were used in both reports: systematic reviews, RCTs or CCTs studying the effects of conservative non-surgical treatments on subjects with chronic non-specific LBP of at least 3 months duration. The quality of the systematic reviews was assessed using the Oxman and Guyatt criteria. The quality of the clinical trials was assessed using the Cochrane Back Review Group's recommended criteria. Only high quality systematic reviews (scores of at least 4/7) and clinical trials (scores of at least 6/11) were included.
RESULTS: A total of 34 systematic reviews and 32 additional trials (in total more than 300 trials) were identified and summarized.
RECOMMENDATIONS: Exercise therapy, behavioural therapy and multidisciplinary treatment programs are the most effective treatment options for chronic non-specific LBP. Biofeedback, facet joint injections and traction are unlikely to be beneficial for chronic non-specific LBP. Efficacy of other interventions is conflicting or still unknown.

P-46
A SYSTEMATIC REVIEW OF RANDOMIZED CONTROLLED TRIALS OF SPINAL CORD STIMULATORS FOR CHRONIC PAIN

Andrea D Furlan MD[1,2,3], Juan A Sandoval MD[1], Rod Taylor MSc PhD[4], Angela Mailis-Gagnon MD MSc FRCPC[1,2]
[1]Comprehensive Pain Program, Toronto Western Hospital, University Health Network; [2]University of Toronto Centre for Study of Pain, [3]Institute for Work & Health, Toronto, Ontario; [4]Department of Public Health & Epidemiology, University of Birmingham, United Kingdom

BACKGROUND: Spinal cord stimulation (SCS) involves an electrical generator that delivers pulses to a targeted spinal cord area. The leads can be implanted by laminectomy or percutaneously and the source of power is supplied by an implanted battery or an external radio-frequency transmitter. The exact mechanism of pain relief remains poorly understood.
OBJECTIVES: To assess the efficacy of spinal cord stimulation in relieving chronic pain.
SEARCH STRATEGY: We searched Medline, Embase and the Cochrane Controlled Trials Register up to February 2002, as well as textbooks and reference lists in the retrieved articles. We also contacted experts in the field of pain and the main manufacturer of the stimulators.
SELECTION CRITERIA AND METHODS: We included only randomized controlled trials (RCTs) in humans that assessed SCSs for chronic pain. Two independent reviewers selected the studies, assessed the quality (using Jadad criteria) and extracted the data. One of the assessors of methodological quality was blinded to authors, dates and journals. The data was analysed using best evidence synthesis due to paucity of studies and heterogeneity of the population.
MAIN RESULTS: We found only two RCTs including 81 patients in total. One was judged as being of high quality and the other of low quality. One trial included patients with complex regional pain syndrome type I (CRPS I or reflex sympathetic dystrophy) and the other was done for failed back surgery syndrome (FBSS). The follow up period varied from 6 to 12 months. We conclude that there is limited evidence in favor of SCS for FBSS and moderate evidence in favor of SCS for CRPS I.

P-47
TRAINING-RELATED CHANGES IN WARM AND HEAT PAIN DISCRIMINATION

A Gallez[1], M-C Albanese MSc[2], P Rainville PhD[1], GH Duncan DDS PhD[1]
[1]Université de Montréal, [2]McGill University

AIM: To examine training-related improvements in sensory discrimination of cutaneous thermal stimulation in normal humans.

METHODS: Eleven subjects participated in 5 training sessions, conducted on separate days, in which both noxious and innocuous thermal stimuli were applied to the forearm. In each trial, the temperature increased to a 4-second plateau (T1=38.5 or 47.5°C), from which the comparison temperature was presented (T2= 38.5-41.7°C or 47.5-48.7°C). Subjects were required to detect temperature changes. Performance was examined using non-parametric indices derived from the Signal Detection Theory (discriminability and criteria), and response speed.

RESULTS: Discriminability and response speed were monotonically related to the magnitude of temperature difference in both conditions (p's<0.001), confirming the dependence of performance on stimulus intensity ($\Delta T=T2-T1$). The group demonstrated training-related improvements in discriminability, criteria (more stringent) and response speed in the pain condition (ANOVA, $p<0.007$). In the innocuous condition however, only response speed improved significantly over the 5 days ($p<0.005$). Within both conditions, improvement at lower ΔTs generally predicted improvement at higher ΔTs ($p<0.05$), confirming the internal consistency of training effects. Significant correlations in learning patterns were detected between the innocuous and noxious conditions with speed ($p<0.02$) but not discriminability or criteria.

CONCLUSIONS: These data suggest training-related improvements in sensory discrimination of cutaneous thermal stimulation, especially in the noxious range. Partial correlations in training-related improvement between conditions suggest a joint involvement of specific sensory (warm vs. heat pain) and non-specific (e.g. motor) mechanisms in thermal sensory-discriminative learning.

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P-48
FEASIBILITY & CLINICAL UTILITY OF THE PREMATURE INFANT PAIN PROFILE

Sharyn Gibbins RN PhD[1], Marion Deland RN[1], Janet Yamada RN MSc[2], Bonnie Stevens RN, PhD[2]
[1]Sunnybrook & Women's College Health Sciences Centre, Toronto, Ontario; [2]Hospital for Sick Children, Toronto, Ontario

OBJECTIVE: While the Premature Infant Pain Profile (PIPP; Stevens et al., 1996) has good reliability and validity, further work on establishing the feasibility and clinical utility is required. The aim of the study is to determine the feasibility and clinical utility of the PIPP.

DESIGN/METHODS: A two-phase study involving 2 validated questionnaires was administered to 100 NICU professionals. The main outcome in Phase 1 was health care professionals' opinions of the PIPP's feasibility (format, training/instruction, time and scoring). In Phase 2, health care professionals' opinions of the measure's clinical utility and acceptability were evaluated. Chart reviews of (a) the frequency of PIPP scores documented during the first week of life and (b) the frequency of pharmacological/non pharmacological interventions used on the basis of PIPP scores were collected.

RESULTS: To date, 60 questionnaires from Phase 1 have been received. Forty staff members (67%) received formal training and four professionals (9%) received no training for the use of the PIPP. The mean duration of the formal training sessions was 19.24 (SD,12.14) minutes and PIPP scores were completed within a mean of 4.71 (SD,3.5) minutes. Clarification following the training sessions was required for 49% of the staff. Health care professionals described some (33%) or significant difficulty (28%) in calculating PIPP scores. The format of the PIPP was described as "very clear" (23%) "clear" (18%) and "not clear without clarification" (40%).

CONCLUSIONS: The PIPP shows initial feasibility. Although the format of the PIPP appears to be clear, further instructions and clarifications for the use of the PIPP is required.

P-49
THE PREMATURE INFANT PAIN PROFILE: A WEB-BASED LEARNING MODULE

Sharyn Gibbins RN PhD[1], Janet Yamada RN MSc[2], Bonnie Stevens RN PhD[2]
[1]Sunnybrook & Women's College Health Sciences Centre, Toronto, Ontario; [2]Hospital for Sick Children, Toronto, Ontario

AIM: The Premature Infant Pain Profile (PIPP) is a valid and reliable neonatal pain measure that is currently used for research and clinical practice. Preliminary analyses of the feasibility of this measure suggest that further clarification (instructions, scoring) of the PIPP is required before it can be easily incorporated into daily clinical practice. The aim of this study is to evaluate the comprehensiveness, ease of use and clarity of a web-based/interactive learning module for implementing the PIPP into clinical practice.

METHODS: A web-based/interactive learning module has been developed to assist researchers and clinicians in utilizing the PIPP for neonatal pain assessment and in scoring and interpretation. Ethical approval from the participating hospital will be obtained and pilot data will be used to evaluate the learning module. The final version of the web-based teaching package will be made available in a CD format. Following consent, delegates from the ISPP will be invited to participate in pilot testing of the web-based learning module. A self-administered questionnaire will be used to evaluate the comprehensiveness, ease of use and clarity of the PIPP.

RESULTS: Descriptive statistics will be used to examine the web-based/interactive learning module. Duration of training time, clarification of instructions and scoring will be examined.

CONCLUSIONS: Many health care professionals have become adept with web-based/interactive learning that can be accessed in a variety of settings. It is believed that the interactive learning module will improve the utilization of the PIPP in clinical settings and ultimately improve pain assessment and management for infants.

P-50
TESTING AN INTERDISCIPLINARY PAIN SERVICE IN THE NEONATAL INTENSIVE CARE UNIT (NICU)

Sharyn Gibbins RN PhD, Patricia Maddalena RN MHSc, Susan Vogel PharmD, Elizabeth Asztalos MD MSc, Marion Deland RN, Marilyn Hyndman RRCP, Maureen Luther PT MSc, Dorothy Dougherty RN
Sunnybrook & Women's College Health Sciences Centre, Toronto, Ontario

BACKGROUND: Few pain services for neonates exist, and fewer have been systematically examined. An interdisciplinary neonatal pain service has been established to ensure safe and appropriate comfort measures for neonates requiring intensive care.

OBJECTIVES: To determine (a) the safety and effectiveness of the Interdisciplinary Pain Service in 3 areas: [(i) assessment and documentation, (ii) reduction in painful procedures and (iii) administration of sucrose], and (b) parent and staff satisfaction.

DESIGN/METHODS: After the establishment of a pain service, data were prospectively collected on Effectiveness; as measured by (a) the number of documented pain scores and interventions based on scores, (b) total number of painful procedures performed within the first hour of life compared to retrospective data and (c) frequency of prescribing and administering non-pharmacological interventions. Safety was measured by the incidence of adverse events associated with the pain service recommendations. Satisfaction was measured by open-ended questionnaires distributed to parents and the interdisciplinary team.

RESULTS: Over a 6-month period, there was a 50% increase in the number of documented pain scores. No change in pain management practice on the basis of pain scores occurred. There was 60% reduction in the number of procedures in the first hour of life. Sucrose was ordered for 80% of infants and administered 40% of the time. No adverse events occurred. Data collection for satisfaction will be completed in March 2003.

CONCLUSIONS: The Interdisciplinary Pain Service has shown initial safety, effectiveness and satisfaction. Further development of the model, to include research, education and quality assurance is required.

P-51
PAIN IN INSTITUTIONALIZED OLDER ADULTS: A FOCUS ON CO-MORBIDITY

Maggie Gibson PhD[1], M Gail Woodbury PhD[1], Leah Clyburn MA[2], Julia Geiger BA[2], Michael Stones PhD[2]
[1]St Joseph's Health Care London & University of Western Ontario, London, Ontario; [2]Lakehead University, Thunder Bay, Ontario

AIM: Co-morbidity is a hallmark of geriatric medicine. Effective health care requires a holistic approach that is responsive to overlap among symptoms associated with different conditions and among interventions that target different symptoms. This report documents co-morbidity among chronic pain and common biopsychosocial conditions that are prevalent in older adults in residential care settings (cognitive impairment, depression and apathy).

METHODS: Nurses completed standardized measures to assess 161 institutionalized older adults. Scales including the Minimum Data Set subscales for pain (Fries et al., 2001), depression (Burrows et al., 2000) and cognitive impairment (Morris et al., 1994), and the Apathy Evaluation Scale (Marin et al., 1991).

RESULTS: Average scores were in the normal range for depression and in the clinically significant range for apathy and cognitive impairment. Two-thirds of residents had pain (50% less than daily, 50% daily). For those with daily pain, co-morbidities with clinically significant levels of other conditions were 40% for cognitive impairment, 41% for depression, and 58% for apathy. Co-morbidity rates for daily pain plus one, two, or three other conditions were 70%, 47%, and 21%, respectively.

CONCLUSIONS: Research on co-morbidity among pain and other common biopsychosocial conditions is needed to guide health care providers, particularly in a health care climate with increasing expectations for evidence-based treatment and outcome management. This need may be most significant in the long term and chronic care sectors, where co-morbidity is pervasive.

P-52
RANDOMIZED CONTROLLED TRIAL OF A MORPHINE-GABAPENTIN COMBINATION IN NEUROPATHIC PAIN

Ian Gilron MD MSc FRCPC[1], Joan Bailey RN MEd[1], Dongsheng Tu PhD[2], Pennie Babcock BPharm[3]
[1]Department of Anesthesiology; [2]Department of Mathematics & Statistics, Queen's University; [3]Investigational Pharmacy, Kingston General Hospital, E-mail: gilroni@post.queensu.ca

AIM: Chronic administration of the anticonvulsant, gabapentin, and of opioids such as morphine, have been shown to reduce neuropathic pain, likely by different mechanisms. The purpose of this clinical trial is to compare the safety and analgesic efficacy of a morphine-gabapentin combination with that of either drug alone in neuropathic pain.

METHODS: In this randomized, double-blind, double-dummy, active placebo-controlled, crossover trial, patients receive chronic oral administration of: 1) the active placebo, lorazepam [P], 2) sustained-release morphine [M], 3) gabapentin [G], and 4) a morphine-gabapentin combination [C] in random order using a balanced Latin square design. Treatment conditions were identical in all four periods and consisted of a 3 week titration to maximal tolerated dose (MTD), 1 week maintenance treatment at MTD and a 1 week washout. Primary outcomes were daily pain intensity on the fourth week of treatment and treatment-emergent symptoms and secondary outcomes include the SF-MPQ, POMS, SF-36 and BPI. A linear mixed model with sequence and treatment as fixed effects and patient and period as random effects was used in the statistical analysis.

RESULTS: At the time of writing, data are available from 25 patients: 23 completed the entire study and 2 withdrew after completing 2 of 4 treatment periods. Median daily MTDs (mg) for each treatment were: P (lorazepam)-1.6, M-45, G-2400, C-morphine 30 / gabapentin 1500. Analysis of pain intensity data demonstrated no significant effect of sequence ($p>0.05$) but a significant effect of treatment ($p<0.01$). Mean pain intensities (0-10) during maintenance treatment at MTD were: P-4.6, M-3.5 ($p<0.01$, *cf* P), G-3.9 ($p=.08$ *cf* P; $p<0.05$, *cf* C), C-3.1 ($p<0.01$, *cf* P). Patients experiencing moderate to severe adverse effects during treatment at MTD included for sedation: P-5/23, M-5/25, G 5/25, C-5/23; for constipation: P-2/23, M-11/25, G-1/25, C-9/23; and for any symptom: P-9/23, M-18/25, G-10/25, C-17/23.

CONCLUSIONS: These preliminary data suggest that a morphine-gabapentin combination may be more efficacious than single agent therapy in neuropathic pain with a comparable side effect profile. Additional study completers, secondary outcomes and detailed statistical analyses will be provided upon presentation of these data.

P-53
DEVELOPING A PRECEPTORSHIP PROGRAM IN CHRONIC NON CANCER PAIN

Allan Gordon MD, Douglas Gourlay MD, Philip Peng MD, Enza Barbati, Lesley Gordon BA, Marilyn Galonski RN
Wasser Pain Management Centre, Mount Sinai Hospital, Toronto, Ontario

The Wasser Pain Management Centre has pain education as one of its missions. The Centre was approached by Janssen Ortho Inc. to develop a preceptorship program in chronic pain management aimed at family physicians. The preceptorship was to focus on pharmacologic especially opioid therapy as an integral part of a multidisciplinary approach.

METHODS: A needs assessment was developed and sent the referring base of physicians and dentists (see Kogan et al this meeting). Janssen Ortho Inc provided the names of physicians who had indicated a desire to attend the preceptorship. A letter of invitation was sent together with another needs assessment to those physicians. An agenda for a 6 hour visit was set up together with learning objectives. The preceptorship was held late in August 2002 and an evaluation was carried out.

RESULTS: Some 7 practitioners experienced the preceptorship which include formal talks on
chronic pain, pharmacotherapy, and pain and dependency as well as informal interactions with Wasser staff around cases. Particularly popular was integration with the entire Wasser team at regular noon-time Wasser rounds. Formal evaluation suggested that the participants' objectives were met as were the expectations of Wasser staff and JOI. There was a desire for more discussion.

CONCLUSIONS: Based upon this a formal program of pain preceptorship at the Wasser was set up with the next session, to be 1.5 days, booked for February 2003. This will be reported upon in May 2003.

P-54
BOTULINUM TOXIN TYPE A FOR THE TREATMENT OF CHRONIC PELVIC REGIONAL PAIN

AA Gilani MD, M Galonski RN, AS Gordon MD FRCPC
Wasser Pain Management Centre, Mount Sinai Hospital, Toronto, Ontario

Chronic Pelvic Regional Pain (CPRP) is a common problem, which manifests as a true visceral and/or somatic pain. Botulinum Toxin Type A (BTX-A) blocks release of acetylcholine at neuromuscular junction, and also has proposed role in pain control through interference with the afferent pain pathways. We studied the effectiveness of BTX-A in the treatment of CPRP.

METHODS: Records of patients who received BTX-A for CPRP at our centre were reviewed retrospectively.
All patients had extensive work up (US and/or, Laparoscopy, CT, MRI and blood tests and vaginal swab cultures) for etiology of CPRP, minimum 6 months duration of pain and failure of treatment (medical+/-surgical).
Patients were divided into responders and non-responders, depending upon the subjective feelings of improvement, physical activity, sexual functions and use of medication.

RESULTS: Using follow the pain protocol, 22 patients received 100-300 units per treatment of BTX-A. Eight received one and fourteen received 2-4 treatments. There were five non-responders (received one treatment) and 17 responders. Moderate subjective improvement with increased physical activity was seen in 8 patients. 9 responders had good response, where

one could discontinue and three significantly decrease their daily medications use. Five reported significant improvement in daily activities, sexual functions or both and some decrease in use of medications. 13/14 patients who received 2-4 treatments showed similar or better response to the subsequent treatment.

CONCLUSIONS: BTX-A is an effective treatment option for CPRP, especially in the patients with failure of medical and surgical treatments. The effectiveness could be secondary to a sensory mode of actions of BTX-A. There is a need for a large, placebo controlled, prospective study to investigate the effectiveness of BTX-A in the treatment of CPRP.

P-55
FUNCTIONAL CHARACTERIZATION OF THE RAT SNSR

Eric Grazzini PhD[1], Marie-Odile Roy PhD[1], Ralf Schmidt PhD[2], Jean Labrecque PhD[3], Rosemarie Panetta PhD[1], Francoise Mennicken PhD[1], Paola MC Lembo PhD[1], Sultan Ahmad PhD[1]

We have previously described the cloning and characterization of a novel family of receptors uniquely localised in small sensory neurons and named this family, the sensory neuron specific G-protein coupled receptors, SNSR.

AIM OF INVESTIGATION: To find highly specific ligands for rat SNSR and use these neuropeptides as tools for in vivo studies.

METHODS AND RESULTS: Neuropeptides derived from the POMC and proenkephalin A precursors (BAM8-22) and peptides containing a RF-amide motif (AR-M103203) dose-dependently mediated the release of intracellular calcium in cells expressing the rat SNSR. Amongst all ligands tested, γ2-MSH, was the most potent at activating the rat SNSR (EC_{50}=71 ± 16 nM). Structure-activity relationship studies revealed that the active moiety was restricted to the C-terminal part of γ2-MSH (CT-γ2-MSH named AR-M104691) and selectivity studies performed on >30 GPCRs and channels, demonstrated the specific interaction of CT-γ2-MSH with rat SNSR. Using ^{125}I-CT-γ2-MSH, a saturation binding isotherm was performed on HEK293s cells stably expressing rat SNSR and the following values were obtained: K_d 2.7 ± 0.4 nM with a Bmax value of 350 ± 100 fmol/mg protein.

To determine the physiological role of rat SNSR, peptides derived from RF-amide, POMC and Proenkephalin A genes were evaluated in the rat flexor-reflex and tail-immersion pain models. All ligands tested produced similar and consistent results of inducing excitability of the spinal nociceptive neurons and pro-hyperalgesic effects when injected intrathecally (see Yu, X.H. *et al.*,).

CONCLUSIONS: γ2-MSH activates rat SNSR and the active moiety resides within the C-terminal region of this neuropeptide. *In vivo* studies utilizing CT-γ2-MSH, BAM8-22 and AR-M103203 produced pro-nociceptive effects, suggesting that the rat SNSR may play a significant role in regulation of nociception.

Note: P-55 Functional Characterization of the rat SNSR and P-56 Spinal pronociceptive actions of Sensory Neuron-Specific Receptor (SNSR) agonists in rats both contain complementary data.

P-56
SPINAL PRONOCICEPTIVE ACTIONS OF SENSORY NEURON-SPECIFIC RECEPTOR (SNSR) AGONISTS IN RATS

XH Yu, CQ Cao*, JMA Laird, MN Perkins
Bioscience Department, AstraZeneca R&D Montréal, St-Laurent, Quebec

AIM OF INVESTIGATION: Behavioral and electrophysiological experiments were performed to explore the functions of BAM8-22, AR-M 103203 and AR-M 104691, selective agonists at the novel sensory neuron-specific receptors (SNSRs). (The in vitro profile of these SNSR ligands is described in a separate poster, Grazzini et al).

METHODS: The experiments were performed on male rats (200-320g). Thermal withdrawal latency was measured in a tail-immersion test (49°C water) in awake animals. In the electrophysiological study, extracellular recordings of flexor a-motoneuron activity were made from the nerve to the semitendinosus muscles in decerebrate-spinal rats. Flexor reflex excitability was determined by recording efferent activity evoked by touch, pinch and heat (52°C water) stimuli.

RESULTS: Intrathecal (i.t.) administration of BAM8-22 (1, 5 and 10nmol/20µl) or AR-M 104691 (1, 5 and 10nmol/20µl) dose-dependently decreased the tail withdrawal latency. At the highest dose, BAM8-22 decreased the thermal withdrawal latency from 5.7 ± 0.4s to 3.7 ± 0.3s ($p<0.001$, n=9), 10 to 20 min after drug administration. Similarly, 10 nmoles of AR-M 104691 decreased the withdrawal latency from 5.6 ± 0.2s to 4.6 ± 0.4s ($p<0.01$, n=9) 10min following i.t. injection. BAM8-22 dose-dependently (0.1, 0.5, 1 and 5nmol/10µl, i.t.) increased reflex excitability. The responses to light touch, noxious pinch and heat stimuli were increased by 719 ± 125 %, 225 ± 62 % and 743 ± 200 % ($p<0.005$, n=16) respectively at 5 nmoles. The enhancement started 5-10 min after i.t. administration and lasted around 40 min. AR-M 103203 produced similar, but less pronounced effects. The responses evoked by touch, pinch and heat stimuli increased by 200 ± 22%, 134 ± 22% and 196 ± 40% ($p<0.05$, n=5) respectively.

CONCLUSIONS: These peptidergic agonists of SNSR (BAM 8-22, AR-M103203 and AR-M104691) produce pro-nociceptive effects after spinal administration in both electrophysiological and behavioral measures of nociception in the rat.

Note: P-55 Functional Characterization of the rat SNSR and P-56 Spinal pronociceptive actions of Sensory Neuron-Specific Receptor (SNSR) agonists in rats both contain complementary data.

P-57
OBSERVER RATINGS OF PAIN IN CHILDREN WITH CEREBRAL PALSY

Kellie L Hadden PhD[1], Jan Haave BSW[1], Sandra LeFort PhD RN[2], Michelle O'Brien BScPT[3], Cheryl Faseruk BScPT[3], Amy King[1], Melanie Noel[1], Alexa Martin-Storey[1]
[1]Memorial University of Newfoundland, Department of Psychology; [2]Memorial University of Newfoundland, Faculty of Nursing; [3]Janeway Children's Health and Rehabilitation Centre

INTRODUCTION: Children with significant neurological impairment (SNI)(e.g., cerebral palsy) often have difficulty verbally communicating their pain experience due to severe cognitive and language impairments. As a result, observer ratings become the primary source of information for identifying pain in these children. The objective of the study was to examine multidimensional pain assessment in children with cerebral palsy (CP).

METHOD: Participants were 51 children (2 to 9 years of age) diagnosed with CP. Caregivers, a research assistant, and the child's physiotherapist independently rated pain before, during, and following a ROM manipulation using the Children's Hospital of Eastern Ontario Pain Scale (CHEOPS), the Non-Communicating Children's Pain Checklist (NCCPC), and the Numerical Rating Scale (NRS; 0-5). Videotape recordings of the three time segments were coded using the Child Facial Coding System (CFCS).

RESULTS: Correlations (intraclass correlation coefficients) indicated a significant agreement between the research assistant's, caregivers, and physiotherapists ratings for the NCCPC (.86) and NRS (.78). The agreement between raters for the CHEOPS was poor (.20) and was not included in the analyses. Results indicated that NCCPC and NRS pain scores were significantly higher during the stretch segment than the baseline and recovery segments ($P < .001$). CFCS scores will be included in future analyses.

DISCUSSION: Children with CP display discernable pain responses. The NCCPC and NRS are reliable and valid measures of pain in children with CP and should be used in clinical practice.

P-58
COMPARING TWO OBSERVATIONAL SYSTEMS IN THE ASSESSMENT OF KNEE PAIN

S Fuchs-Lacelle MA, T Hadjistavropoulos PhD, D Sharpe PhD, J Williams BA, R Martin PhD, D LaChapelle MA
Department of Psychology, University of Regina

AIM: Research has demonstrated the utility of Pain Behavior Measurement (PBM; Keefe & Block, 1982) as a pain index. PBM involves the recording of sighing, rubbing, grimacing, guarding and bracing. Keefe and Block (1987) proposed a modification of this system (focusing on the occurrence of joint flexing, rubbing, unloading the joint, guarding and rigidity) specifically for patients with knee pain. Our aim was to compare the original PBM to the modified version in a sample of knee replacement patients, in order to assess the utility of the more specialized approach. We expected that the more discomforting physiotherapy activities (knee bending and quadriceps exercises) would result in more pain behaviours than intermediate activities (walking and standing) which, in turn, would result in more pain behaviours than reclining. We examined the extent to which each system reflected this expected pattern.

METHODS: Ninety-nine seniors were observed while completing a series of structured post-knee surgery physiotherapy activities (knee bends, standing, walking, reclining and a quadriceps exercise).

RESULTS: Analyses of self-reported levels of pain were consistent with the expected pattern of pain levels in relation to physiotherapy activities. Specific pain behaviours within each system (e.g., grimacing, rigidity) occurred in a manner consistent with the expected, pattern while other behaviours (e.g., rubbing the affected area) did not.

CONCLUSIONS: Although there was no clear advantage for the modified system over the PBM, an optimal approach might involve combining specific behaviours from each system.

P-59
A NOVEL PHYSICIAN CLINICAL TRAINING PROGRAM FOR TREATING CHRONIC NONCANCER PAIN

Helen Hays MD[1], Brian Knight MD[2], Ian Forster MD[3]
[1]Associate Clinical Professor, University of Alberta, Edmonton, Alberta; [2]Clinical Associate Professor, Department of Anaesthesiology and Pain Medicine, University of Alberta, Edmonton, Alberta; [3]Medical Director & Consultant in Addiction Medicine, LifeMark Health Institute, Edmonton, Alberta

AIM: To institute a new clinical training program for selected community-based primary care physicians in Alberta to meet the needs of the high volume of patients with chronic noncancer pain. A new Proposed Alternate Payment Plan (APP), an initiative of Alberta Health and Wellness and the Alberta Medical Association, will provide the opportunity to improve and streamline the effectiveness in delivering care to this complex group of people.

METHODS: Ten interested physicians from the community will be offered extra training in three established Edmonton chronic pain management practices. Learning objectives have been established. Pre-work reading assignment and pre/post examination will be required. Participants will attend a weekend workshop session, which will offer further didactic and case-based pain management education. These specially trained physicians, Regional Pain Interest Physicians (RPIP), will form a new referral tier between primary care physicians and pain specialists, and will devote a set amount of time to accept referrals from family physicians in their community. It is hoped that a local interdisciplinary team can be set-up. The core preceptor group in Edmonton will be available for consultation.

RESULTS: Patients will be seen on a timely basis and have improved quality of care. Physicians will feel supported and more satisfied with the proper management of pain. The program will be cost-effective for the health care system.

CONCLUSIONS: This proposed plan for early 2003 will be a welcome change for both patients with chronic pain and treating practitioners, so that both realize satisfaction with the care and effectiveness within the health system.

P-60
ORAL PCA - IT CAN BE DONE!

Patti Kastanias RN BSc (Hons) MSc(A) Acute Care Nurse Practitioner, Acute Pain Service
Toronto Western Hospital, University Health Network

Intravenous Patent Controlled Analgesia (IV PCA) is now standard practice for postoperative analgesia for patients who have had relatively large or complex surgeries. However, as soon as these same patients are able to tolerate oral analgesics, we routinely switch them to nurse administered analgesia - whether it is around-the-clock, prn or a combination thereof. Why?

At the Toronto Western Hospital, we have developed, piloted, implemented and are now in the process of expanding an Oral Patient Controlled Analgesic (Oral PCA) program. Our Oral PCA program itself will be described as well as barriers and facilitators to its development and implementation.

POSTERS PRESENTED ON SATURDAY MAY 24, 2003 P-61 – P-120 INCLUSIVE

P-61
DETECTING DECEPTION IN FACIAL EXPRESSIONS OF PAIN: ACCURACY AND TRAINING

Marilyn L Hill PhD[1,2,3], Kenneth D Craig PhD[4]
[1]Arthritis Institute, St. Joseph's Health Care, London, Ontario; [2]Department of Psychology, University of Western Ontario, London, Ontario; [3]Rehabilitation & Geriatric Care Program, Lawson Health Research Institute, London, Ontario; [4]Department of Psychology, University of British Columbia, Vancouver, British Columbia

AIM: Clinicians assign greater weight to nonverbal expression than to patient self-report when judging pain severity. However, patients can successfully dissimulate facial expressions of pain. This study examined individual differences in the ability to discriminate genuine and deceptive pain expressions and whether different models of training in cues to deception would improve detection skills.

METHODS: Judges (N = 120) were randomly assigned to experimental groups: 1) control, 2) corrective feedback, 3) deception training, and 4) deception training plus feedback. Judges were shown four videotaped facial expressions for each chronic pain patient: neutral expressions, genuine pain instigated by physiotherapy range of motion assessment, masked pain, and faked pain. For each condition, the judges rated pain intensity and unpleasantness, decided which category the four videoclips represented, and described cues they used to arrive at decisions.

RESULTS: There were significant individual differences in accuracy, with females more accurate than males; accuracy was unrelated to pain experience, empathy, or the number or type of facial cues used. Immediate corrective feedback significantly improved subjects' detection accuracy, while the information-based training program was ineffective.

CONCLUSIONS: The detection skills of naive judges can be improved by increasing their awareness of available facial cues. Interestingly, judges' pain ratings corresponded closely to patients actual experience, while judges' categorization of genuine or deceptive facial displays was poor. There may be a stronger bias against "labelling" a patient's clinical presentation as deceptive, versus describing deceptive behaviour, as the former judgement carries greater responsibility and accountability, and is inherently confrontational.

P-62
AN INVESTIGATION OF THE VALENCE, STRENGTH AND CONTRIBUTING FACTORS OF ATTITUDES AND STEREOTYPES REGARDING CHRONIC PAIN PATIENTS

Marilyn L Hill PhD[1,2,3], Debbie Chiodo MA[1]
[1]Arthritis Institute, St. Joseph's Health Care, London, Ontario; [2]Rehabilitation & Geriatric Care Program, Lawson Health Research Institute; [3]Department of Psychology, University of Western Ontario

AIM: Assessing the validity of a patients' pain complaint is difficult due to the subjectivity of pain, the elusiveness of its cause, and the indirect relationship between pain severity and the extent or severity of damage. As a result, pain assessments necessarily involve subjective judgements, which may be influenced by stereotyping and stigmatization. This study examined the valence, strength & content of attitudes and stereotypes regarding chronic back pain patients, as compared to patients with diabetes or clinical depression.

METHODS: For each patient population, participants (50 undergraduate students) described their attitudes using an attitudes thermometer, and described their stereotypes, emotional responses and symbolic beliefs using open-ended measures. Participants also completed measures of empathy, and illness experience.

RESULTS: Attitudes were significantly more favourable towards diabetes patients than towards patients with chronic back pain or depression, which did not differ. Previous research indicates a more favourable attitude towards individuals with physical disabilities than mental disabilities. Results suggest that chronic pain is perceived more negatively than other physical conditions. Participants provided a mix of positive and negative beliefs, emotional responses and symbolic beliefs regarding patients with chronic back pain. Attitudes towards individuals with chronic back pain were most strongly predicted by symbolic beliefs.

CONCLUSIONS: Results provided information about attitudes and stereotypes regarding chronic pain patients, and will be the basis for future research projects investigating the patient or situational variables that contribute to the stigmatization of chronic pain patients, for example, the decision to refuse appropriate health care or disability benefits.

P-63
PAIN EXPERIENCE OF SURGICAL ORTHOPAEDIC PATIENTS POST-DISCHARGE

Marilyn J Hodgins RN PhD[1], Louiselle L Ouellet RN MSN[1], Sandra Pond RN BN2, Shelley Knorr RN BN[2], Geri Geldart RN MHSA[3], Janice Arsenault RN BS[1]
[1]University of New Brunswick, Faculty of Nursing; [2]Dr E Chalmers Hospital, Fredericton, New Brunswick; [3]River Valley Health Authority, Fredericton, New Brunswick

AIM: 1. Describe surgical, orthopaedic patients' pain experience post-hospital discharge. 2. Identify factors increasing patients' risk for significant post-discharge pain.

METHODS: Study population consisted of patients admitted to a regional, referral hospital for either elective or emergency orthopaedic surgery. Selection criteria included: a) English-speaking adults, b) able to communicate by telephone, c) free of mental confusion, and d) discharged to a private residence with telephone access. Eligible patients were recruited during their hospital stay. During the third week post-discharge, a structured telephone interview was completed. Pain severity was measured using 11-point numerical rating scale (NRS - anchors 'no pain' to 'worst pain possible'). Degree of interference rated using five-point Likert scale ('not at all', 'little bit', 'some', 'quite a bit', 'totally').

RESULTS: To date, 321 interviews completed[2]. Typical participant is a middle-aged (Mean 58.6, Range 17 - 86 years), educated (n=203; 64.2% high school diploma or higher) female (n=53.6%; 53.6%) who underwent elective surgery (n=246; 77.6%) involving lower extremity (n=248; 78.2%). Most participants reported good progress since discharge (Mean 8.09, SD=1.76, 11-point NRS). Although 41.6% (n=132) rated average pain during past week as moderate to severe, only 26.4% (n=84) reported pain interfered with their recovery "some", "quite a bit" or totally".

CONCLUSIONS: Findings could be interpreted as indicating satisfactory post-discharge pain control. However this interpretation may be premature as pain did interfere with the recovery of a significant subgroup. Characteristics of this subgroup plus recommendations for practice and research will be outlined.

[2]Subject recruitment ends November, 2003.

P-64
AMBULATORY REGIONAL ANESTHESIA/ANALGESIA: A QUALITY IMPROVEMENT INTIATIVE

Kim Horrill RN MScN ACNP, NP/CNS Pain Management, St Joseph's Health Care London; Margo Bettger Hahn RN MScN, Clinical Nurse Specialist Ortho/Plastics; Kevin Armstrong MD, FRCP(c), Department of Anesthesiology, The University of Western Ontario, St Joseph's Health Care London

As surgical practice moves toward ambulatory care, the need for new approaches to deliver optimal postoperative pain management has rapidly become the focus for all health care professionals. Orthopedic procedures in particular have been demonstrated to have significant pain associated with them. Some are challenging to manage with oral opioids and NSAIDS and may require admission to hospital for effective pain management. The role of regional anesthesia/analgesia in the perioperative management of orthopedic patients continues to evolve. One such development is the use of indwelling peri-peripheral and nerve plexus catheters to provide continuous analgesia and regional anesthesia. Recent research studies support the use of continuous nerve blocks for acute pain management with individuals who have been discharged from hospital. There is however, very little information in the literature that describes the development and implementation of an ambulatory regional anesthesia/analgesia program. Equally sparse in the literature is any measure of patient satisfaction with a regional block for pain management.

The purpose of this poster is to describe the development, implementation, and evaluation of a hospital-to-home based regional anesthesia/analgesia program. This process included assembling key interdisciplinary stakeholders, assessing feasibility, identifying needs of our target population, a review of the literature, and establishing links with community nurses.

We have been successful in implementing an ambulatory regional anesthesia/analgesia program involving an interdisciplinary team that provides optimal pain management from hospital to home. Patient satisfaction data supports the efficacy and safety of this mode of pain management.

P-65
MEASUREMENT OF POSTHEMORRHOIDECTOMY PAIN

Priscilla Hortense, RN, Graduate Student in the Master's Program in Fundamental Nursing at the University of São Paulo at Ribeirão Preto College of Nursing; Luis Vicente Garcia, PhD, Faculty in the Department of Surgery, Orthopedics and Traumatology of the University of São Paulo at Ribeirão Preto Faculty of Medicine; Fátima Ap.Emm Faleiros Sousa, PhD, Associate Professor in the Department of General and Specialized Nursing of the University of São Paulo at Ribeirão Preto College of Nursing

This experimental study aimed at measuring post-operative pain and verifying the stability of the perception of post-operative pain. Post-operative pain was investigated by direct psychophysical methods in subjects submitted to Hemorrhoidectomy under spinal anesthesia. Two methods were utilized: Experiment 1 - serial exploration method and Experiment 2 - magnitude estimation and line length. The Experiment 1 was the task of determining of the pain absolute threshold with the purpose of assign the post-operative pain through determining of the standart stimulus to each subjects. The subjects were previously randomized into three groups: Group C (100 mg intravenous ketoprofen before surgery); Group T (40mg intravenous tenoxicam before surgery) and Group F (0.9% physiological saline intravenous before surgery). In Experiment 2, the measurement of

the post-operative pain was evaluated by magnitude estimation and cross-modality matching with the mode of line lengths. The results were: 1) each individual presented his own time in determining his absolute threshold, that is, pain is a unique and individual experience; 2) The mean time of surgery duration in the three groups was of approximately 48 min. 3) The comparison between the three samples with relation to the responses by line lengths and magnitude estimations showed that the efficiency of preemptive analgesia is greater with the use of Ketoprofen. 4) A variance analysis was applied for individual analgesia time for the three sources of medication. The results showed that the time of the mean analgesia are the same for the three types of medications.

P-66
COMPARISON OF POSTOPERATIVE PAIN ASSESSMENT TOOLS ACROSS THE ADULT LIFE SPAN

Denise H. Hosey, Lucia Gagliese, Joel Katz, Vincent Chan
Kinesiology and Health Science, York University; Acute Pain Research Unit, Department of Anesthesia, University Health Network, Toronto, Ontario

BACKGROUND: Several pain assessment tools have been developed to quantify pain intensity following surgery that allow patients to quickly and easily communicate their pain level. While these scales have been shown to be valid and sensitive tools for use with younger populations, some scales have questionable utility with a geriatric population. The relationship between age and pain assessment tools is examined in this study.

SUBJECTS: 100 general surgery patients. 54 young (19-64, mean = 48 ± 13y), 46 old (65-85, mean = 70 ± 4y).

METHODS: Patients completed the Visual Analogue Scale horizontal (VAS-H), and vertical (VAS-V), Numeric Rating Scale (NRS), Present Pain Index (PPI), and the McGill Pain Questionnaire (MPQ) 24 hours and 48 hours postoperatively. Scale completion order was counterbalanced using a Latin Squares design.

RESULTS: The younger group had higher scores on all scales as compared to the older group, at both 24 hours and 48 hours. At 24 hours the VAS-H, NRS, and PPI, and MPQ were statistically different ($p \leq 0.044 - 0.001$). At 48 hours only the MPQ was statistically significant ($p \leq 0.039$). The error rate was the highest for both age groups when completing the VAS-H and VAS-V at both 24 hours (27% and 21%) and 48 hours (17% and 21%). However the error rate was substantially higher for the older group when completing the VAS-H and VAS-V at 24 hours (34.8% and 32.6%) and at 48 hours (26.1% for both scales). As compared to the younger group who had lower error rates on the VAS-H and VAS-V at 24 hours (20.4% and 11.1%) and at 48 hours (11.3% and 15.1%). The VAS-V at 24 hours reached statistical significance ($p \leq 0.009$), as did the VAS-H at 48 hours ($p \leq 0.05$). Women in the old group were found to be more likely than older men to fail the VAS-V at the 24 hour assessment ($p \leq 0.024$), and the VAS-H at the 48 hour assessment ($p \leq 0.01$). There were no other differences found between the two groups in demographic or clinical variables. The error rate for the remaining scales was less than 10% at both assessment times for the young and old age groups. The older group identified the NRS as the easiest to complete (48.7% and 48.9%), the most accurate measure (51.3 and 60%), and the scale they would most prefer to complete in the future (59% and 57.8%).

CONCLUSIONS: The NRS, PPI, and MPQ appear to be reliable across the adult lifespan over a 48 hour period. The NRS appears to be the preferred method of assessment for older patients. There appears to be limitations for the use of the VAS-H and VAS-V for postoperative patients, particularly for the elderly.

P-67
A PILOT STUDY OF PAIN IN CHILDREN UNDERGOING TREATMENT FOR SCALD BURNS

A Young PhD Clin Psych[1], P Hubley RN MSc ACNP[2], M Hanson MD MEd FRCP(c)[3], HM Clarke MD PhD FRCSC FAAP FACS[2]
[1]Simon Fraser University, British Columbia; [2]The Hospital for Sick Children, Plastic Surgery Program & The University of Toronto; [3]The Hospital for Sick Children, Psychiatry Program & The University of Toronto

STUDY AIM: A scald burn injury is extremely painful in a young child's life. Daily dressing changes to the burned area are repeated painful treatments required to facilitate wound healing. There have been few studies to date about burn pain in relation to child specific characteristics. The overall aim of this study is to better understand the relationship between child temperament, distress and coping in this vulnerable population.

METHOD: To date the study has included 15 children between the ages of one and five years admitted to the burn unit with a scald burn of more than 5% of their body surface area. Each subject had three burn treatment sessions video taped for analysis with the Child-Adult Medical Procedure Interaction Scale-Revised version (CAMPIS-R) (Blount, Stuges & Powers, 1990) and the Observational Scale of Behavioral Distress (OSBD) (Jay & Elliott, 1984).

Additionally, primary caregivers were asked to complete a questionnaire related their child's developing personality characteristics. The scales included the Toddler Temperament Scale (TTS) for children age 1-3 years (Fullard, McDevitt & Carey, 1984) or the Behavioral Style Questionnaire (BSQ) for ages 4-5 years (McDevitt & Carey, 1978).

RESULTS: Data will be reported based on the initial 15 subjects enrolled in the study. The analysis of this initial pilot data will assist us to identify if there are trends related to (a) child temperament among scald injured infants, and (b) the relationships among different child temperament characteristics and coping during painful burn treatments.

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PAIN ASSESSMENT IN THE ELDERLY: A PSYCHOMETRIC EVALUATION OF SELF-REPORT AND BEHAVIORAL METHODS

Sharon Kaasalainen RN PhD, Joan Crook RN PhD
McMaster University

AIM: Limited research has been done that examines appropriate and reliable methods to assess for pain in the elderly population. For the cognitively impaired elderly, pain assessment is further complicated by their limited communication abilities. Reliable and clinically feasible methods are desperately needed to assess pain so that it can be managed appropriately.

PURPOSE: The purpose of this study was to examine the psychometric properties (i.e., test-retest, interrater reliability, criterion concurrent validity) of three verbal pain assessment tools (i.e., Faces scale, numerical rating scale, Present Pain Intensity scale) and a behavioral pain assessment scale within the elderly population. This measurement study used a repeated measures design to examine the reliability and validity of these pain assessment tools across four groups of elderly participants: 1) cognitively intact, 2) mildly cognitively impaired, 3) moderately cognitively impaired, and 4) extremely cognitively impaired, using a non-random stratified sample of 130 elderly residents who live in long term care.

RESULTS: The findings support the test-retest and interrater reliability of the behavioral pain assessment tool across all four groups of the elderly whereas the same measures of reliability for the verbal pain assessment tools decreased with increasing cognitive impairment. However, the majority of elderly with mild to moderate cognitive impairment were able to complete at least one of the verbal pain assessment tools. The

Present Pain Intensity scale had the strongest criterion concurrent validity for the elderly with moderate cognitive impairment (r=0.64, p=0.001). The findings are discussed in relation to their clinical and research implications.

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No submission

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NO EFFECTS OF BENZODIAZEPINES ON DNIC-LIKE MECHANISMS

Kirsten Scholl[2], Ullich Schu MD[2], Stefan Lautenbacher MD PhD[1,2]
[1]University of Bamberg, Germany; [2]University of Marburg, Germany

AIM: GABA as an important inhibitory neurotransmitter is involved in the neurotransmission of the pain system. Benzodiazepines modulate powerfully the GABAergic neurotransmission. The present study aimed at investigating the influence of benzodiazepines on the "diffuse noxious inhibitory controls" (DNIC)-like mechanisms in man.

METHODS: 10 female and 10 male subjects were investigated in a double-blind cross-over placebo-controlled study. Lorazepam was chosen as a potent benzodiazine in a dosage of 0.02 mg/kg. After baseline assessment of electrical detection and pain thresholds, tonic thermal stimuli were applied additionally to the thigh to induce DNIC-like pain inhibition. Tonic thermal stimuli were applied either slightly above (Pain) or below (Heat) pain threshold. Electrical detection and pain thresholds were assessed by applying stimuli to the forearm, using a multiple staircase procedure.

RESULTS: Lorazepam increased significantly the electrical detection thresholds and the heat pain thresholds, with only a trend towards an increase in case of the electrical pain thresholds. There was a significant increase in electrical pain thresholds induced by concurrent tonic thermal stimulation (both in the Heat and in the Pain condition) but not in electrical detection thresholds. Lorazepam did not influence this effect differently from Placebo.

CONCLUSIONS: DNIC-like mechanisms did not appear to be affected by benzodiazepines. This findings suggest no major impact of GABA on this type of pain inhibition.

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POSSIBLE DEFICIENCIES IN DNIC-LIKE MECHANISMS IN CHRONIC TENSION-TYPE HEADACHE

Anke Pielsticker PhD[1,2], Gunther Haag MD PhD[3], Michael Zaudig MD[2], Stefan Lautenbacher PhD[1,4]
[1]University of Bamberg, Germany; [2]Psychosomatic Hospital Windach, Germany; [3]Elztal Hospital, Elzach, Germany; [4]University of Marburg, Germany

AIM: Recent evidence suggests that a dysfunction in "diffuse noxious inhibitory controls" (DNIC)-like mechanisms might be involved in the development of chronic pain. The aim of the present study was to look for such deficiencies in chronic tension-type headache.

METHODS: 29 headache patients and 25 healthy controls participated in the study. After baseline assessment of electrical detection and pain thresholds, tonic thermal stimuli were applied additionally to the thigh to induce DNIC-like pain inhibition. Tonic thermal stimuli were applied either slightly above (Pain) or below (Heat) pain threshold. Electrical detection and pain thresholds were assessed by applying stimuli either to the forearm or the temple, using a multiple staircase procedure.

RESULTS: The increase in electrical pain thresholds induced by concurrent tonic thermal stimulation was significantly higher in the healthy controls than in the headache patients. This effect occurred both under the Pain condition and under the Heat condition at the forearm as well as at the temple. The electrical detection thresholds were not affected by tonic thermal stimulation.

CONCLUSIONS: Patients with chronic tension-type headache appear to suffer from deficient DNIC-like pain inhibitory mechanisms. Thus, headache patients show similar deficiencies in DNIC-like pain inhibitory mechanisms as patients with other chronic pain syndromes such as fibromyalgia.

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EDUCATIONAL OUTCOMES OF THE PAIN WEEK INTERPROFESSIONAL E-LEARNING INITIATIVE

L Lax[1] (Biomedical Communications, Medicine), J Watt-Watson[1] (Nursing), P Pennefather[1] (Pharmacy), JP Hunter[1] (Physical Therapy), M Scardamalia[2]
[1]University of Toronto Centre for the Study of Pain-Interfaculty Education Committee (UTCSP-IFEC); [2]Institute for Knowledge Innovation and Technology, OISE, University of Toronto, Toronto, Ontario, Canada

AIM: This study evaluated undergraduate health sciences students perceptions of E-Learning and effectiveness of interprofessional knowledge building (KB) (Scardamalia,2002) in the context of pain mechanisms, assessment and management issues. The UTCSP-IFEC developed a 20 hour curriculum for 540 students in the Faculties/Departments of Dentistry, Medicine, Nursing, Occupational Therapy, Pharmacy and Physical Therapy (03.18-22.02). The optional E-Learning component provided extended opportunities for cognitive collaboration.

METHODS: A website (http://icaus.med.utoronto.ca/pain/index.htm) centralized information and evidence-based resources. The Phantom Pain case unfolded via text and video vignettes, integrating Standardized Patients with real patient video to enhance vividness. Pedagogic jigsaw, KB pain issues and Ideas at the Centre stimulated collaborative online discourse.

Seventy participants were randomly divided and stratified by discipline into two E-Learning environments, WebCT (n=30) and Web Knowledge Forum (KF) (n=40). A mixed methodology quasi-experimental case design was used (Creswell,1994). Attitudes and opinions were surveyed online. Data was exported to Excel and analyzed in SPSS. WebCT Tracking and KF Analytic Toolkit generated activity statistics. Qualitative analyses of KB principles and pain content (conceptions/misconceptions) were conducted.

RESULTS: Students highly rated their E-Learning experience (87% Ex/VG/G); however ratings across disciplines varied (Medicine highest). 82% (strongly agreed/agreed) supported future integration. 85% perceived outcomes of new knowledge, multi-perspectives (91%) and understanding of roles (92%). Read/write ratios (10:1) were high. Interprofessional knowledge sharing, shallow co-constructive KB, was defined. Identification of student pain conceptions/misconceptions demonstrated novel use of E-Learning for determining outcomes.

CONCLUSIONS: An E-Learning model was developed to support key educational outcomes of interprofessional, evidence-based KB and shared understanding.

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RESULTS OF A RANDOMIZED TRIAL OF THE CHRONIC PAIN SELF-MANAGEMENT PROGRAM (CPSMP) IN THREE CANADIAN PROVINCES

Sandra LeFort PhD[1], Judith Watt-Watson PhD[2], Karen Webber MN[1]
[1]Memorial University of Newfoundland, School of Nursing, St John's, Newfoundland; [2]University of Toronto, Faculty of Nursing, Toronto, Ontario

AIMS: The overall aim was to evaluate the feasibility and effectiveness of the low-cost, community-based CPSMP delivered by trained facilitators in three Canadian provinces on process and outcome variables for those with chronic non-cancer pain. The primary aim was to compare outcomes for individuals who received the psychoeducation intervention with those randomized to a 3-month wait-list control group. The secondary aim was to evaluate whether changes in the treatment group at 3 months were sustained long-term by evaluating outcomes at 6 and 12 months.

METHODS: Individuals in three areas of Newfoundland, in Toronto, and in Regina with chronic pain who met inclusion criteria were randomly allocated to participate in the 6-week CPSMP right away or to wait for three months. Nurse and rehab specialist facilitators were recruited and trained in a 3-day intensive workshop to deliver the CPSMP. Data were collected at baseline, 3, 6 and 12 months for all study participants.
RESULTS: Participants (80% female, mean age 47 yrs) were randomly allocated to either the treatment group (n=102) or to the wait-list control group (n=105). Comparisons between groups at 3 months on measures of self-efficacy, resourcefulness, disability, psychosocial adjustment to illness, life satisfaction, and health-related quality of life including pain will be presented. Data at 6 and 12 months will also be reported.
CONCLUSIONS: Conclusions will be drawn about the feasibility and effectiveness of the CPSMP as an adjunct for the management of chronic non-cancer pain.
Acknowledgements: Supported by a grant from the Canadian Institutes of Health Research (CIHR) and the Medical Research Council of Canada (MRC).

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BEFORE AND AFTER THE CHRONIC PAIN SELF-MANAGEMENT PROGRAM: "WHAT CHRONIC PAIN MEANS TO ME"

Sandra LeFort PhD[1], Karen Webber MN[1], Judith Watt-Watson PhD[2]
[1]Memorial University of Newfoundland, School of Nursing, St John's, Newfoundland; [2]University of Toronto, Faculty of Nursing, Toronto, Ontario

AIM OF INVESTIGATION: To describe participant responses at two points in time, at the beginning and the end of the 6-week community-based psychoeducational Chronic Pain Self-Management Program (CPSMP) using qualitative analysis.
METHODS: At the beginning and the end of a psychoeducational program for those with chronic non-cancer pain, participants in 27 programs from seven sites, three in Newfoundland (St. John's, Gander area and Corner Brook area), three in Ontario (North and central Toronto and Halton region) and one site in Saskatchewan (Regina) were asked to describe "What chronic pain means to me". All program facilitators and participants agreed to have the sessions audio-taped and the sections pertaining to this information were transcribed and formed the basis of the analysis.
RESULTS: The preliminary analysis indicates that participants felt overwhelmed, frustrated, angry, powerless and isolated at the beginning of the 6-week program. At the end of the CPSMP, their responses indicated that while they still had pain, they reported more control over the pain, felt less alone, and took more responsibility for how they lived their lives. There was an overall change in responses to participants feeling they had more control over their pain and their lives. This change reflected the process components (enhancing self-efficacy and resourcefulness) of the CPSMP.
CONCLUSIONS: Short-term qualitative responses indicated that participants benefited from the community-based psychoeducational CPSMP.
Acknowledgements: Supported by a grant from the Canadian Institutes of Health Research (CIHR) and the Medical Research Council of Canada (MRC).

P-75
EFFECTS OF INTRADERMAL INJECTION OF BOTULINUM NEUROTOXIN A ON NEUROGENIC INFLAMMATION

HL Gonzalez MD, JO Dostrovsky PhD, MP Charlton PhD
Department of Physiology, University of Toronto

The peripheral release of neuropeptides is thought to produce neuroinflammation and sensitization of nociceptors. We tested the hypothesis that blockade of exocytosis from the nociceptors will reduce signs of neuroinflammation. We performed in-vivo experiments in rats, and used antidromic stimulation of C fibers to induce peripheral release of neuropeptides and neurogenic inflammation. Forty-eight hours after intradermal injection of BoNT/A or saline in the dorsal part of the hindpaw, the saphenous nerve was exposed and placed on platinum electrodes; in another set of experiments, the skin was pre-treated with the NK1 receptor antagonist CP 99,994. Repetitive stimulation at 4 Hz, for 10 minutes was used to activate C fibers. Evans blue dye (50 mg/kg) was injected through a vein cannula before nerve stimulation began. The change in skin color produced by extravasation of the dye was video-recorded and the average pixel intensity of the treated skin was analysed using the program Image J. Additionally, The concentration of Evans blue in the skin was assessed by spectrophotometry. The stimulus-induced extravasation was significantly suppressed by pretreatment with CP 99,994. Plasma extravasation was also attenuated by locally applied BoNT/ A when compared with the control group (30% reduction in average pixel intensity and 45% reduction in Evans blue concentration). However, this effect was smaller than the inhibition observed after blocking NK1 receptors. These results suggest that application of BoNT/A can decrease neurogenic inflammation, and could represent an alternative treatment in inflammatory and painful conditions in which the neurogenic component plays an important role.

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COMPARING THE EFFECTS OF PAIN COPING INTERVENTIONS ON FUNCTIONING AND QUALITY OF LIFE: A QUASI-EXPERIMENT

Jeff Ennis MD FRCP(C)[1], David Lewis PhD[1,2,3]
[1]Faculty of Health Sciences, McMaster University; [2]Health Studies Program, McMaster University, [3]Father Sean O'Sullivan Research Centre

OBJECTIVE: To determine the extent to which an intervention for recalcitrant chronic pain is affected by insurer involvement.
PARTICIPANTS: Participants have experienced a variety of other treatments without success. Arm I is funded by public insurers; Arm II is not.
METHODOLOGY: Quasi-experimental design, measured at enrolment, discharge, and 6 months post-discharge. Data were compared using Student=s t-test or repeated measures ANOVA.
OUTCOME MEASURES: Changes in health status, in limitations and level of activity, as indicated by the short form of the Medical Outcomes Survey (SF-12). Changes in use of pain relief techniques, as indicated by the Pain Relief Log. Degree of disability, as indicated by the Pain Disability Index. Health services utilization.
RESULTS: N=62; 58% male; mean age 46.1. By follow-up, there was a trend toward decreased use of emergency rooms for pain management (NS) in both arms. PDI declined from 49.7 to 6.2 in Arm I, and from 45.8 to 44.1 in Arm II. PRL declined from 126 to 121 in Arm I, and increased from 123 to 136 in Arm II; similarly, mental component scale scores from the SF-12 improved from 30.1 to 36.4 in Arm I and declined from 38.4 to 33.5 in Arm II. The Sf-12's physical component scale scores improved from 28.5 to 35.0 in Arm I and from 28.5 to 31.4 in Arm II.
CONCLUSION: Although clients' pain levels do not change, their abilities to function improve more substantially in the "experimental" arm.

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TRANSPLANTS OF APA MICROCAPSULIZED BOVINE ADERENAL CHROMAFFIN CELLS REDUCE ALLODYNIA AND HYPERALGESIA IN A RAT MODEL OF NEUROPATHIC PAIN

Xu Longhe MD PhD[1], Xue Yilong PhD[2], Zhang Hong MD PhD[1]
[1]Department of Anesthesiology, PLA General Hospital, Beijing, China,100853; [2]Department of cell, PLA General Hospital, Beijing, China,100853

AIM: Alginate-polylysine-alginate (APA) microcapsule has efficacy of immunoisolation and can protect cells from immune attack. This study was designed to observe the analgesic effect of subarachnoid transplantation of APA microcapsulized bovine chromaffin cells (BCCs) on chronic constriction injury (CCI) rats.
METHODS: ①Tyrosine hydroxylase, Enkaphalin, dopamine-ß-hydroxy-

lase immunohistochemistry and hematoxylin and eosin(HE) staining were done to test the secretion function and morphology of BCCs and APA-BCCs. ②SD rats were randomly divided into four groups ,each has ten. Normal rats were used as control group (group C). Rats that right sciatic nerve was ligated were used as CCI group . Five to six hundred empty APA microcapsules(group APA) or 5×10^6 APA microcapsulized BCCs (group APA-BCCs) were grated into subarachnoid space of CCI rats 7 days post-operation. Nociceptive behavior was tested for 6 weeks posttransplant as measured by paw withdrawals to von Frey filaments, CO_2 laser.

RESULTS: APA microcapsule has no effect on the survival of BCCs in vitro. Immunohistochemistry indicated prolonged transplant survival and production of catecholamines and enkaphalin. Furthermore, in group APA-BCCs , tactile and cold allodynia and tactile and thermal hyperalgesia induced by CCI were significantly reduced during a 1-6-week period, related to the APA microcapsulized BCCs transplants. APA grafts had no effect on the allodynia and hyperalgesia induced by CCI.

CONCLUSION: Subarachnoid transplantation of APA microcapsulized BCCs can alleviate allodynia and heperalgesia in CCI rats. The use of such chromaffin cells offers a novel approach to pain management.

P-78
THE PRESENCE OF ALLODYNIA AND HYPERALGESIA IN DFFERENT CATEGORIES OF NEUROPATHIC PAIN – A DESCRIPTIVE CLINICAL STUDY

ME Lynch MD FRCPC, MJ Sullivan PhD, AJ Clark MD FRCPC
Department of Psychiatry and Anesthesia, Dalhousie University
Department of Psychology, University of Montreal

AIMS: Clinical treatment of pain often involves two diagnoses; an empirical/medically descriptive diagnosis i.e. diabetic neuropathy or cervical sprain, and a diagnosis that considers treatment of underlying mechanisms (eg. neuropathic vs nociceptive) requiring review of descriptors, temporal characteristics and type of evoked pain. Animal models of neuropathic pain and increased knowledge of pathophysiological changes that cause chronic pain have identified the importance of sensory findings such as allodynia and hyperalgesia. The purpose of this investigation was to present descriptive data regarding findings of allodynia and hyperalgesia in patients with neuropathic pain from 4 diagnostic groups.

METHODS: Patients from four diagnostic categories of neuropathic pain underwent detailed sensory testing. Sensory findings corresponding to dermatomal or peripheral nerve distributions were coded as anatomic and those that went beyond these boundaries, including those that crossed the midline, as regional.

RESULTS: 60 patients had body maps with descriptive sensory data. Diagnoses included; neuropathic orofacial pain (NOF; N=10), diabetic neuropathy (DN; N=5), post-herpetic neuralgia (PHN; N=13) and post-surgical/traumatic neuropathic pain (PSTN; N=32). 71.7% exhibited regional and 28.3% anatomic distributions of pain. There was a trend towards more severe allodynia and hyperalgesia in patients with PHN and PSTN, this did not reach statistical significance. A subgroup of 23 patients underwent a double blind placebo controlled trial of intravenous adenosine, severity of pre-treatment allodynia and hyperalgesia did not predict response to treatment.

CONCLUSION: This study demonstrates that within any one diagnostic category of neuropathic pain, regional and anatomic sensory findings may be present. The high prevalence of regional distributions in neuropathic pain conditions challenges once commonly held assumptions about the "hysterical" basis of regional pain. The severity of allodynia and hyperalgesia was similar across diagnostic categories and did not predict which patients would respond to intravenous adenosine.

P-79
PELVIC AND UROGENITAL PAIN SYNDROMES IN A CHRONIC PAIN CLINIC POPULATION

Jackie Tsan[1], Marios Papagapiou MSc[1], Keith Nicholson PhD(Psychol)[1,3], Bob Bharatwal MD1, Tea Cohodarevic MD, FRCPC[1], Angela Mailis-Gagnon MD, MSc, FRCPC[1,2,3]
[1]Comprehensive Pain Program, Toronto Western Hospital, University Health Network; [2]Toronto Western Research Institute and Krembil Neuroscience Centre; [3]University of Toronto Centre for the Study of Pain, Toronto, Ontario

AIM: To examine the medical, demographic, and psychometric profile of patients referred to the Pain Program of the Toronto Western Hospital, Toronto, Canada during a 2 year period with pelvic and/or urogenital pains.

METHODS: A retrospective chart analysis of 51 consecutive patients was conducted. All patients had undergone a thorough physical examination and had completed standardized questionnaires. Those with the most complex presentation were submitted to an inpatient multidisciplinary evaluation, including placebo-controlled infusions of sodium amytal (SA - a medium action barbiturate) in an effort to elucidate underlying pain mechanisms.

RESULTS: The inpatient group had a very high preponderance of women in reproductive years with high level of unemployment, multiple surgeries and substantial use of medications when compared to the outpatient group. SA infusion resulted in significant or complete elimination of the pain in 53% of the inpatients, modest pain reduction in 27% and no response in 20%. Since nociceptive pain is notoriously resistant to SA, the results of the infusion indicated that other than nociceptive factors contributed to pain disability in the inpatient group. Indeed, psychometric (MCMI-III and MMPI-2) profiles were strongly suggestive of the possibility that psychosocial conflicts and/or stress were expressed in somatic symptoms.

CONCLUSIONS: Consistent with current literature evidence, complex pelvic and urogenital pain syndromes are more prevalent in women of reproductive age. Personality and psychosocial factors far outweigh biomedical factors in generating the experience of intractable pain.

P-80
PREDICTORS OF TIME SPENT ON WAITING LISTS AMONG PATIENTS SCHEDULED FOR HIP- OR KNEE-REPLACEMENT SURGERY

Ronald R Martin PhD[1], Heather Hadjistavropoulos PhD[1], Bobbi Lochbaum RN[2]
[1]University of Regina; [2]Regina Health District

AIMS: The incidence of hip- and knee-replacement operations has risen worldwide due to surgical advancements and joint deterioration among growing numbers of older adults. Wait lists are common and lengthy waiting periods have been noted in many parts of the world including Canada (Ramsay & Walker, 1994). The aim of this research was to examine the predictors of the time spent on waiting lists among patients waiting for hip- and knee-replacement surgery. In particular, what role does self-reported pain and disability play in predicting waiting times over and above demographic, condition and system related variables?

METHODS: Self-reported information was collected from patients (N=398) awaiting hip- (n = 181) or knee-replacement surgery (n = 217) regarding their background, health and pain-related disability. Data also was collected regarding the size of the surgeons' caseloads. Multiple regression analyses were conducted to test for significant predictors.

RESULTS: Five predictors were entered into the final regression model. Shorter waiting times were predicted by: 1) increased age, 2) being scheduled for hip replacements (as opposed to knee replacements), 3) higher scores on a pain urgency scale, and 4) surgeons with larger caseloads.

CONCLUSIONS: The length of time spent waiting for joint replacement surgery varies according to many factors specific to the patient and the patient's surgeon; pain urgency is only one factor that comes into play in waiting time The findings may be used to explore the validity of existing algorithms that are used to determine the amount of time spent on waiting lists by patients scheduled for joint-replacement surgery.

P-81
WITHDRAWN

P-82
HEALTHCARE PROFESSIONALS' PERCEPTION OF PAIN EXPERIENCED BY INFANTS AT RISK FOR NEUROLOGICAL IMPAIRMENT

Lynn M Breau PhD[5], Bonnie Stevens RN PhD[1,3], Patrick McGrath OC PhD FRSC[5,7,8], Joseph Beyene PhD[2,4], Carol Camfield MD FRCPC[5,7,9], G Allen Finley MD FRCPC[5,6,8], Linda Franck RN, PhD[10], Sharyn Gibbins RN PhD[2,11], Alexandra Howlett MD FRCPC[7], Patricia McKeever RN PhD[1], Karel O'Brien MB BCh BAO FRCPC[4], Arne Ohlsson MD FRCPC[4]
[1]Faculty of Nursing, [2]Department of Public Health Sciences, University of Toronto; Departments of [3]Nursing, [4]Pediatrics, Mount Sinai Hospital, Toronto; Departments of [5]Psychology, [6]Anesthesiology, [7]Pediatrics, Dalhousie University; [8]Pediatric Pain Service, [9]Division of Neurology, IWK Health Centre, Halifax; [10]Institute of Child Health, London, UK; [11]Sunnybrook and Women's Heath Sciences Centre, Toronto, Ontario

AIM: To determine the effects of healthcare professionals' belief regarding an infant's risk for neurological impairment (NI) on their perception of that infant's pain.

METHODS: 95 healthcare professionals who practice in two neonatal intensive care units (NICU's) provided ratings of pain (0-10, Faces Pain Scale), distress (0-10), effectiveness of cuddling (0-10), time to calm, and degree of risk for NI (0-10) for 9 videoclips of infants receiving painful procedures. A description of each infant depicted him/her as at risk for mild, moderate or severe NI.

RESULTS: Pain ratings did not vary overall with level of risk, but professionals believed infants with moderate risk had significantly more pain than infants with mild risk [$t(94) = 2.1$, $p = .04$], but that infants with high risk had pain that was no different than those with moderate [$t(94) = 1.8$, $p = .07$] or mild risk [$t(94) < 1$, $p = .88$]. Distress ratings did not vary with risk, but participants indicated cuddling would be less with increasing risk [$F(2, 93] = 4.4$, $p = .01$). Responses did not due to experience, study site, gender, or age, but physicians rated all aspects of the infants' experience as reduced, relative to other professionals [$F(1, 93) = 4.3$, $p = .04$].

CONCLUSION: Professionals working in intensive care settings believe the pain experience of infants is related to level of risk for neurological impairment and that cuddling will be less effective as risk increases. Research should examine whether these beliefs impact care.

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HEALTHCARE PROFESSIONALS' BELIEFS REGARDING THE PAIN OF INFANTS AT RISK FOR NEUROLOGICAL IMPAIRMENT: A SURVEY

Lynn M Breau PhD[5], Bonnie Stevens RN PhD[1,3], Patrick McGrath OC, PhD, FRSC[5,7,8], Joseph Beyene PhD[2,4], Carol Camfield MD, FRCPC[5,7,9], G Allen Finley MD FRCPC[5,6,8], Linda Franck RN PhD[10], Sharyn Gibbins RN PhD[2,11], Alexandra Howlett MD FRCPC[7], Patricia McKeever RN PhD[1], Karel O'Brien MB BCh BAO FRCPC[4], Arne Ohlsson MD FRCPC[4]
[1]Faculty of Nursing, [2]Department of Public Health Sciences, University of Toronto; Departments of [3]Nursing, [4]Pediatrics, Mount Sinai Hospital, Toronto; Departments of [5]Psychology, [6]Anesthesiology, [7]Pediatrics, Dalhousie University; [8]Pediatric Pain Service, [9]Division of Neurology, IWK Health Centre, Halifax, Nova Scotia; [10]Institute of Child Health, London, United Kingdom; [11]Sunnybrook and Women's Heath Sciences Centre, Toronto

AIM: To determine whether healthcare professionals believe infants' pain experience differs due to neurological impairment (NI).

METHODS: 99 healthcare professionals practicing in two Neonatal Intensive Care Units (NICU's) completed the Pain Opinion Questionnaire (POQ), regarding the similarity of the pain experience of infants at low, moderate and high risk for NI to that of infants with no risk along 5 pain facets (sensation, frequency, emotional reaction, behavioral reaction, communication).

RESULTS: POQ scores varied due to level of NI (mild, moderate, severe) and pain facet. Respondents believed infants with NI were less likely to experience pain similar tothan infants without NI as level of NI increased [$F(2,97) = 66.0$, $p < .001$] and were more likely to have a reduced pain experience relative to infants without NI as level of NI increased [$F(2,97) = 62.2$, $p < .001$]. Post hoc matched sample t-tests revealed infants with greater risk were rated as less similar than less impaired groups on all facets, with the exception that infants with moderate NI were not viewed as having significantly reduced pain sensation or frequency relative to infants with mild NI. POQ scores did not vary due to profession, experience, gender, or age.

CONCLUSION: Professionals expressed the belief that neurologically impaired infants' pain experience is reduced, relative to infants without impairment, as their level of risk for neurological impairment increases. Future studies should investigate the source of these beliefs and their impact on the care provided to infants with risk for neurological impairment.

P-84
THE INTIMACY GROUP: ENHANCING SEXUAL FUNCTIONING OF WOMEN LIVING WITH CHRONIC PAIN.

Annie Breton BSc PT, Colleen Miller PhD
Calgary Chronic Pain Centre, Calgary, Alberta

AIM: Although chronic pain significantly disrupts sexual functioning, few treatments have been developed which aim at improving sexual functioning. Within an interdisciplinary setting, the Intimacy Group provided treatment to enhance the sexual functioning of women with chronic pelvic pain, daily headache pain, and musculoskeletal pain.

METHODS: Women attended a five-session group over a two-month period. The treatment group led by a physical therapist and a psychologist included improving communication, redefining sexuality, and practicing sensate focus. As a pilot project, women anonymously completed the Sexual Activity Questionnaire (SAQ) and a treatment helpfulness questionnaire.

RESULTS: All thirteen women found the group helpful, most women gained a better understanding of how pain affects sexuality, were better able to communicate sexual needs, and were better able to manage pain that arose as a result of sexual activity. The SAQ showed improvement on several aspects of sexual functioning from pre- to post-group including increased participation in sexual activity, increased enjoyment, increased

desire, increased frequency and increased satisfaction. Changes on the SAQ occurred despite little change on pain during intercourse.
CONCLUSIONS: Women who live with chronic pain appear to benefit significantly from a group aimed at enhancing sexual functioning despite little change on pain level during sexual activity. Enhanced sexual functioning included increased participation, enjoyment, desire, frequency, and satisfaction. Future research will include a larger sample size and a control group.

P-85
SPINAL CORD STIMULATION IN THE MANAGEMENT OF INTRACTABLE NEUROPATHIC PAIN

Dwight E Moulin MD, Anthony Iezzi PhD, David Palma BScH, Andrew Parrent MD
Interdisciplinary Pain Program, University of Western Ontario

AIM: To evaluate the outcome of spinal cord stimulation (SCS) in a variety of intractable neuropathic pain states.
METHODS: Patients with intractable neuropathic pain who had failed medical management were evaluated for a trial of SCS by a neurologist, neurosurgeon and psychologist. The primary outcome measure was sustained pain relief (poor < 25%, mild 25-50%, moderate 50-75%, marked 75-100%).
RESULTS: Ninety-seven consecutive patients (60 male, 37 female) were considered acceptable candidates for a trial of SCS. The mean age was 42.9 years and the mean duration of pain was 8.0 years. Failed back syndrome with neuropathic leg pain (37 patients or 38%) and complex regional pain syndrome (20 patients or 21%) were the major diagnoses. At baseline, two patients reported mild pain, 22 moderate pain and 73 severe pain. All patients had failed aggressive trials of adjuvant analgesics and 90 patients (91%) had failed one or more opioid analgesics. Temporary spinal cord stimulation was carried out for a mean of 9.7 days. Sixty-six patients reported at least 50% pain relief and went on to implantation of a permanent stimulator for a mean of 3.3 years. Fifty-four patients (55%) reported sustained moderate or marked pain relief. Seven patients (8%) returned to gainful employment. Technical problems or complications requiring revisions (lead migration, infection, hardware pain) occurred in 38 (39%) patients.
CONCLUSIONS: Spinal cord stimulation provided at least 50% pain relief in approximately 50% of patients with intractable neuropathic pain over a mean of 3.3 years. However, almost 40% of patients endured complications requiring one or more revisions.

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TRANSDERMAL CLONIDINE IN THE MANAGEMENT OF INTRACTABLE NEUROPATHIC PAIN

Valerie Schulz MD MPH, David Palma BScH, Dwight E Moulin MD
Interdisciplinary Pain Program, University of Western Ontario

AIM: To evaluate the role of transdermal clonidine in the management of intractable neuropathic pain.
METHODS: A retrospective study of 39 consecutive non-cancer patients who were treated with transdermal clonidine (0.3 mg/day) for a variety of intractable neuropathic pain states. The primary outcome measure was sustained pain relief (poor < 25%, mild 25-50%, moderate 50-75%, marked 75-100%).
RESULTS: The mean age was 54.2 years and the mean duration of followup was 12.1 weeks. Postherpetic neuralgia, diabetic neuropathy, cauda equina syndrome and central pain were the most common diagnoses. Over 90% had been treated with one or more tricyclic antidepressants and anticonvulsants and over half received other adjuvant analgesics. Eighty percent had failed treatment with one or more opioid analgesics (mean 1.8) at a mean maximal morphine dose of 97.7 mg (or equivalents) per day. Twenty-nine patients (74%) did not tolerate clonidine or did not get any pain relief. Seven patients (18%) had initial relief that waned over a mean of 28.9 weeks and clonidine was discontinued. Only three patients (8%) have continued on clonidine over a mean of 38.3 weeks with reports of mild, moderate and marked pain relief.
CONCLUSIONS: Transdermal clonidine at a dose of 0.3 mg/day provided sustained pain relief in less than 10% of patients and should be considered a third or fourth line drug in the management of intractable neuropathic pain.

P-87
METHADONE IN THE MANAGEMENT OF INTRACTABLE NEUROPATHIC PAIN

Dwight E Moulin MD, David Palma BScH, Christopher Watling MD, Valerie Schulz MD MPH
Interdisciplinary Pain Program, University of Western Ontario

AIM: To evaluate the role of methadone in the management of intractable neuropathic pain.
METHODS: A retrospective study of fifty consecutive non-cancer pain patients who were treated with oral methadone for a variety of intractable neuropathic pain states.
RESULTS: The mean age was 52.7 years and the mean duration of followup was 11.8 months. Post-discectomy nerve root fibrosis, complex regional pain syndrome, postherpetic neuralgia and central spinal cord pain syndromes were the most common diagnoses. Over 90% had been treated with one or more tricyclic antidepressants and anticonvulsants and over half had received other adjuvant analgesics. Ninety-four percent had failed treatment with one or more conventional opioid analgesics (mean 2.8) at a mean maximal morphine dose of 384 mg (or equivalents) per day. Twelve patients had failed spinal cord stimulation. Nineteen patients (38%) did not tolerate initial methadone titration or thought their pain was worse on methadone. Five patients (10%) declared initial benefit but required repetitive dose escalation and eventually became nonresponders. Twenty-six patients (52%) reported mild (3), moderate (16), marked (6) or complete (1) pain relief and continued on methadone at a mean maintenance dose of 159 mg per day for a mean duration of 17.3 months. Sixteen patients (32%) reported improved function on methadone relative to previous treatments.
CONCLUSION: Methadone appears to have unique properties including NMDA antagonist activity that make it especially useful in the management of intractable neuropathic pain. This observation needs to be tested in a randomized controlled trial.

P-88
PAIN AND PSYCHOSOCIAL FACTORS IN IDIOPATHIC CERVICAL DYSTONIA

Keith Nicholson PhD[1], Angela Mailis-Gagnon MD[1], Anthony E Lang MD[2]
[1]Toronto Western Hospital, Comprehensive Pain Program;
[2]Toronto Western Hospital, Movement Disorders Clinic

PURPOSE: To study psychosocial factors associated with pain in a sample of patients with idiopathic cervical dystonia.
METHODS: A consecutive sample of 30 idiopathic cervical dystonia patients were studied. All subjects were assessed with the Toronto Western Spasmodic Torticollis Rating Scale (TWSTRS), the McGill Pain Questionnaire (MPQ), the Millon Clinical Multiaxial Inventory - II (MCMI-II) plus the K validity scale and the first three clinical scales (Hs, D, Hy) from the Minnesota Multiphasic Personality Inventory - 2 (MMPI-2).
RESULTS: Six patients reported having no pain problems, eleven reported intermittent pain and 13 constant pain. The severity of pain was strongly ($p < .001$) associated with increased disability (TWSTRS disability scale) and significantly ($p < .01$) related to scores on the MMPI-2 Hs and Hy scales and the MCMI-III Somatoform (H) scale. There was a trend ($p < .10$) for pain to be associated with elevated scores on the MCMI-II Social Desirability (SD), Schizoid (1), Aggressive-Sadistic (6B) and Anxiety (A) scales.
CONCLUSIONS: Pain is an important part of the presentation in idiopathic cervical dystonia, contributing to disability and associated with MMPI-2 Hs and Hy as well as MCMI-II H scale elevations suggestive of the possibility that psychological conflicts and/or stress are being expressed via somatic symptoms. Results are discussed in the context of other studies

of psychosocial or other factors in cervical dystonia indicating that central sensitization effects may be more important than peripheral nociception in the experience of pain.

P-89
REVIEW OF CHRONIC NON-MALIGNANT PAIN PATIENTS WITH CURRENT AND PAST TRANSDERMAL FENTANYL THERAPY IN WASSER PAIN MANAGEMENT CENTRE (WPMC)

Allan S Gordon MD FRCP(C), Manijeh Panahian-Jand MD

BACKGROUND: We were interested in reviewing our patient population that were prescribed Transdermal Fentanyl.

METHODS: Patient chart selection criteria: 1- In their charts there was clear documentation on Transdermal Fentanyl prescription and continuation or discontinuation.

2- Were WPMC patients

101/1254 charts had the above criteria. This is a descriptive retrospective study of the population of patients that had charts at WPMC from Jan 1999 to Feb 2002.

RESULTS: In reviewing 101 cases:

Group A: 44 cases that were still on the Transdermal Fentanyl when the chart review was finished in Feb2002: Male15/44; Female 29/44; mean age: 51 yrs; Years in Pain 9.6 yrs; Mean medication dose 66.6 ug/h;Patients with low back pain 12/44 were the largest in the group.

Group B: 57 cases had stopped using the Transdermal Fentanyl during the chart review with documentation found in the charts: Male 18/57;Female 39/57;mean age 50 yrs; Years in Pain 9.6 yrs; Mean medication dose 52.85 ug/h; Mean days on Transdermal Fentanyl is 64;Patients with low back pain 21/57 were the largest in the group.

CONCLUSION: Since this was a retrospective study of charts, we did not have all the relevant medications and alternative therapies taken at the same time documented in the charts and therefore it is very difficult to pinpoint the exact reason for the discontinuation of the medication in Group B.

P-90
POSTOPERATIVE UNILATERAL ANALGESIA IN ELDERLY PATIENTS

Oana D Predescu MD Assistant Lecturer
3) Institutional Affiliation for Each Author:
University Hospital Bucharest, Romania
Department of Anesthesia, Pain Therapy and Intensive Care

A CONCISE DESCRIPTION OF THE AIM, METHODS, RESULTS AND CONCLUSION OF THE PROPOSED PRESENTATION

AIM: to prove that continuous unilateral spinal analgesia is a good postoperative pain management choice in over 90 years old patients, poor ASA physical status, undergoing lower limb surgery.

METHOD: Comparative, prospective study involving 14 patients age greater than 90 years, ASA III-IV scheduled for painful and invalidating hip fracture repair. The intraoperative anesthesia was unilateral spinal anesthesia with 2 ml 0.5% hypobaric bupivacaine through a B|Braun spinal catheter. For the postoperative pain therapy, they were divided in two groups. 7 patients in group 1 received subcutaneous morphine as analgesic in the postoperative period; The other 7 patients received hypobaric bupivacaine through the spinal catheter, 0.75 - 1 mL in the lateral position, operated side uppermost. The pain relief was measured on a VAS scale.

RESULTS: Postoperative analgesia was evaluated as "very satisfied" in both group.

CONCLUSION: The relatively high incidence of adverse effect of the morphine administration made the unilateral spinal analgesia a method of choice for relieving postoperative pain in elderly patients

P-91
STRESS A COMMON AGGRAVATING FACTOR IN WOMAN WITH CHRONIC PELVIC PAIN

Diane Meschino MD, Gaylene Pron PhD, Aviva Mayers MSw, Debbie Steele RN, Jennifer Blake MD, Lesley K Carr MD for the Toronto Women's Pelvic Health Center at Sunnybrook and Women's College Health Sciences Center, Toronto, Ontario

OBJECTIVE: To review chronic pain in women referred to an outpatient pelvic health center and the degree to which they report stress as an aggravating factor for their pain.

METHODS: Of a consecutive series of women referred to a multi-disciplinary outpatient pelvic health center (WPHC), 94 completed an extensive intake interview and battery of baseline questionnaires including information on demographics, pain, general stress and psychological well-being. Common diagnoses at referral included interstitial cystitis (29%), fibromyalgia (11%), GERD (23%), endometriosis (19%), fibroids (28%), osterarthritis (11%) and irritable bowel (23%).

RESULTS: The patient group was of median age 42, mainly white (81%), university or graduate education (67%) and working outside the home (66%). Fifty-five percent were married and 45% had no children. Duration of pelvic pain was > 2 years in 62% and >5 years in 44%. Pain onset was gradual in 45% and sudden in 33% with constant (22%) and intermittent (60%) occurrence. Pain intensity was minor/ discomforting in 34%, distressing in 29% and horrible or excruciating in 16%. Thirty-four percent were taking prescription pain medications. Common pelvic pain (moderate to severe) reported included dysmenorrhea (27%), dyspareunia (50%) and pain with bladder filling (54%) and bowel movements (34%). Other bodily pain included backache (53%), muscle/joint pain (45%) and migraine (36%).

Pain was reported to be the most important health problem for 39%. Forty percent reported not having a diagnosis for their pain condition. Stress was reported by 45% to make their pain worse. Patients reporting that stress was an aggravating pain factor were also more likely to report experiencing high levels of stress ($p<0.000$), difficulty sleeping ($p=0.004$) and feeling depressed ($p<0.000$) and anxious ($p=0.015$). Their overall self-reported health status and perception of likelihood of improvement were not related to their reporting stress as an aggravating factor. Pain duration, intensity, onset and pattern of occurrence did not differ in those reporting stress as an aggravating factor. Patients with diffuse patterns of pain, based on pain maps, were more likely than those with focal patterns to report stress as a pain-aggravating factor ($p=0.001$).

CONCLUSIONS: Stress is commonly reported as an aggravating factor for women with chronic pelvic pain. Further research is needed to identify the causes of stress, particularly the modifiable aspects, in order to develop optimal assessment and intervention strategies. Stress management would therefore be an important part of any intervention strategy to reduce pain in these patients.

P-92
CHRONIC PELVIC PAIN AND FUNCTIONAL IMPAIRMENT IN WOMEN

Gaylene Pron PhD, Diane Meschino MD, Aviva Mayers MSw, Debbie Steele RN, Jennifer Blake MD and Lesley K Carr MD for the Toronto Women's Pelvic Health Center at Sunnybrook and Women's College Health Sciences Center, Toronto, Ontario

OBJECTIVE: To assess the degree to which patients referred to a pelvic health center report pain, functional impairment and belief that impairment was pain-related.

METHODS: A consecutive series of 100 women referred to a multi-disciplinary outpatient pelvic health center were administered instruments on pain (McGill Pain questionnaire), pain-related disability (PDI index) and pain and impairment relationship (PAIRS scale). Median patient age for this study group was 42 years, 81% were white and 67% had more than 12 years of education. Common diagnoses at referral included: interstitial cystitis (29%), fibromyalgia (11%), GERD (23%), endometriosis (19%), fibroids (28%), osteoarthritis (11%) and irritable bowel (23%).

RESULTS: Patients reported their present pain intensity as none or mild (21%), discomforting (24%), distressing (29%), horrible/excruciating (16%). Functional limitations (median scores > 2) was reported for 5 of the 7 function categories in the disability index: family/home responsibilities (3.0), recreation (5.0), social activity (4.0), occupation (3.00) and sexual behavior (5.0). Self-care (0.0) and life-support activity (1.0) were not rated as disabled. Median disability scores were significantly higher for patients reporting higher (horrible/excruciating) versus lower (discomforting) pain intensity score in all function categories: family/home responsibilities (7.0 Vs 2.5), recreation (8.0 Vs 2.0), social activity (8.0 Vs 2.0), occupation (6.5 Vs 2.0) and sexual behavior (6.5 Vs 5.5), self-care (4.0 Vs 0) and life-support activity (4.5 Vs 0). Patients commonly reported pain prevented them from going about their usual activity (65%) and that others expected too much of them (27%), and that they felt responsible but unable to perform usual activities (46%). Pain also impacted on their ability to concentrate (70%) and they were frequently thinking about effects of pain on their life (52%). Impacts of pain on quality of life, such as not being able to live as well as before, were also reported (51%). Nineteen percent had reported that they had come to accept that they were disabled, six of these reported high pain intensities.

CONCLUSIONS: Women attending an outpatient pelvic health center reported high levels of pain and pain-related disability in all aspects of daily living. Pain-related functional impairment, measured by the PDI index, was highly associated with pain intensity and may be a useful instrument to evaluate efficacy of pain reducing interventions.

P-93

A WORKPLACE LINKED MULTIDISCIPLINARY TREATMENT FOR WORKERS WITH PAIN DISORDER: VOCATIONAL AND CLINICAL OUTCOMES.

HT Hamer MD MSc(A) CCBOM[1], D Etlin MD FRCPC[1], E Runions MA[2], D Sauders PhD CPsych[2], I MacRitchie BSc OT(c)[1]
[1]University Health Network- Toronto Western Hospital - Rehabilitation Solutions' Functional Restoration Program; [2]University Health Network - Toronto Western Hospital - Rehabilitation Solutions

AIM: Multidisciplinary rehabilitation emphasizing functional restoration can reduce pain and improve function but not necessarily improve work-related outcomes. One hypothesis for this finding is the lack of a focused work re-integration component. The TWH Rehabilitation Solutions Customized Program is an outpatient, workplace-linked intervention that addresses emotional, functional and occupational barriers to recovery. This study examines its effectiveness for injured workers with prolonged, disabling pain.

METHODS: A multidisciplinary team providing cognitive behavioural therapy, functional restoration in both the clinic and workplace setting. Pre and post status was measured using self-reported emotional well-being, functional disability and pain ratings, as well as vocationally relevant outcomes drawn from the clinicians' report of work status.

RESULTS: Results are from a sample (N=60) of consecutive admissions over a two year period of injured workers with prolonged pain (50% labourer, 18% clerical and customer service, and 17% professional). Mean age was 42 years and 48% spoke English as a second language (17% required interpreters). Seventy-two percent achieved vocationally relevant outcomes, with 53% increasing their hours and or duties, 14% stabilizing their workplace situation and 5% being referred to Labour Market Reentry. Concurrently, 64% of the sample reported clinically improved emotional and/or functional status and 92% reported high satisfaction with treatment.

CONCLUSIONS: The findings suggest improved vocational outcomes of this workplace linked multidisciplinary intervention among injured workers with prolonged pain.

P-94

AN INTEGRATED FUNCTIONAL ACTIVITY MODEL FOR THE TREATMENT OF CHRONIC PAIN DISORDER IN THE INJURED WORKER

Ramon Silva Mensen BSc(PT), Cred MDT[1], Rebecca Wiltenburg BSc(Kin)[1], Kerry Lawson PhD C Psych[1], Hiten Lad MA Counselling Psychology[1], Erika Runions MA[2]
[1]University Health Network- Toronto Western Hospital - Rehabilitation Solutions' Functional Restoration Program; [2]University Health Network - Toronto Western Hospital - Rehabilitation Solutions

ABSTRACT: Despite favourable outcomes, a large percentage of injured workers who completed the TWH multidisciplinary Functional Restoration Program (FRP) reported difficulties applying pain management strategies during vocational activities at follow-up. These difficulties were hypothesized to be partly due to a lack of a more vocationally oriented program addressing pain-related fear of activity. This study examines the impact of an integrated "functional activities" model focused on explicitly challenging pain-related fear of activity in place of traditional exercise and activity prescription.

AIM: Evaluate clinical effectiveness of the "functional activities" model; 2) Measure and compare client satisfaction of traditional and "functional activities" models.

METHODS: Over a six-month period, approximately 240 clients participated in 2 one-hour functional activity sessions. Based on individual goals, clients selected eight activities from a total of sixteen under the supervision of a physiotherapist, occupational therapist, and a kinesiologist who directly challenged fear of activity beliefs while clients actively participated in functional activities.

RESULTS: A revised form of the Fear of Avoidance Behavioral Questionnaire (FABQ-R) administered pre-treatment, periodically during treatment, and 3 months post-treatment measured changes in activity avoidance beliefs, and was correlated to functionally relevant behavioral change assessed using a 5-point goal attainment scale (GAS). Results from standardized client satisfaction questionnaires pre- and post-introduction of the "functional activities" model were also compared.

CONCLUSION: It is hypothesized that the "functional activities" model will lead to greater client satisfaction, reduced pain-related fear of activity, and more successful application of coping strategies in daily life.

P-95

DESCRIPTIVE CASE STUDIES OF INTERNAL RELEASE TECHNIQUE ON THE PELVIC FLOOR IN A CHRONIC PELVIC PAIN POPULATION

Akari Sano BSc PT[1], Allan Gordon MD FRCP(C)[2], Manijeh Panahian-Jand MD[2]
[1]Wasser Pain Management Centre & Department of Rehabilitation, Mt Sinai Hospital; [2]Wasser Pain Management Centre

INTRODUCTION: Myofascial pain can contribute to chronic pelvic regional pain syndrome. Muscles of the pelvic floor can become painful and/or refer pain elsewhere. Internal release has been proposed to be an appropriate treatment technique to address the trigger points. The aim of this study was to evaluate the effectiveness of this treatment modality in a chronic pelvic pain population.

METHODS: A retrospective chart review was conducted on those patients who had received this treatment by a physiotherapist. Outcome measures (VAS, McGill PRI, Kegel Strength) were taken at the initial, 5th and 10th treatment. Patients were taught a home internal release program and attended 10 follow-ups.

RESULTS: 15 females were included into the study (mean age 41.9 years, mean duration of symptoms 53.7 months). 7 individuals were receiving concurrent treatment (1 TENS, 3 biofeedback, 3 Botox). Paired sample t-tests were used. Results were significant for VAS, PRI and Kegel Strength when compared at Initial vs.5th treatment, and Initial vs.10th treatment session ($p < 0.05$). There was a high self-discharge rate (only 7/15 attended $\geq$5 sessions). 4/15 individuals completed all 10 sessions.

CONCLUSIONS: The overall findings from this study indicate that internal release may significantly improve VAS, PRI and Kegel Strength, if patients attend at least 5 sessions. A prospective study is warranted to further study this treatment modality in a more controlled manner. Methods to optimize attendance will have to be implemented.

P-96
PERIPHERAL INTERACTIONS BETWEEN DEXTROMETHORPHAN, KETAMINE AND AMITRIPTYLINE ON FORMALIN-EVOKED BEHAVIORS AND PAW EDEMA IN RATS

J Sawynok PhD, A Reid BSc
Department of Pharmacology, Dalhousie University, Halifax, Nova Scotia

AIM: This study examined the effects of local peripheral administration of combinations of dextromethorphan and ketamine, two clinically used N-methyl-D-aspartate receptor antagonists, with amitriptyline, a tricyclic antidepressant, on formalin-evoked behaviors and paw edema.

METHODS: Drugs were administered as a 10 min pretreatment prior to formalin 2.5%, and phase 2 behaviors and paw volume determined for 60 and 180 min respectively.

RESULTS: Amitriptyline or dextromethorphan produced a suppression of flinching behaviors produced by formalin, but ketamine had no intrinsic effect. Combinations of inactive doses of dextromethorphan with amitriptyline, and vice versa, produced an augmented analgesia. However, combinations of multiple doses of ketamine with amitriptyline did not augment analgesia. Both dextromethorphan and ketamine enhanced paw edema produced by formalin, and this was blocked by low doses of amitriptyline. In the absence of formalin, low doses of amitriptyline produced a dose-related suppression of paw edema produced by dextromethorphan and ketamine, as well as that produced by 5-hydroxytryptamine and compound 48/80.

CONCLUSIONS: (a) Each of the drugs used in this study exerts multiple pharmacological effects, and augmented analgesia by drug combinations (amitriptyline/dextromethorphan) could reflect a number of these mechanisms, while a lack of augmentation (amitriptyline/ketamine) could reflect occluded actions due to expression of similar effects by the other drug. (b) Paw edema produced by dextromethorphan and ketamine involves inhibition of biogenic amine reuptake, and block of biogenic amine receptors likely accounts for the amitriptyline inhibition of these actions. (c) Combinations of these agents could represent a method for augmented peripheral analgesia and minimized local adverse reactions.

P-97
PERIPHERAL ANTIHYPERALGESIC AND ANALGESIC ACTIONS OF KETAMINE AND AMITRIPTYLINE IN A MODEL OF MILD THERMAL INJURY IN THE RAT

M Oatway BSc[1], A Reid BSc, J Sawynok PhD
Department of Pharmacology, Dalhousie University, Halifax, Nova Scotia; ([1]currently Spinal Cord Injury Laboratory, Robarts Research Institute, London, Ontario)

AIM: Ketamine and amitriptyline both alter peripheral pain signaling following local peripheral administration in several preclinical and some human models of pain. The present study compared the effects of the local peripheral administration of ketamine and amitriptyline in a model of mild thermal injury in the hindpaw of the rat.

METHODS: Exposure of the hindpaw to 52°C for 45 sec under anesthesia produced a subsequent thermal hyperalgesia lasting 2 hours. Drugs were administered in 50ml by s.c. plantar injection as pre- and post-treatments. Paw volumes were determined by volume displacement.

RESULTS: The local peripheral administration of ketamine (100-1000 nmol), 15 min prior to the thermal injury, produced an antihyperalgesic effect when injected in the ipsilateral paw, while amitriptyline produced both antihyperalgesic (300 nmol) and analgesic (1000 nmol) effects. Administered following the thermal injury, ketamine had no effect, while amitriptyline retained its analgesic but not its antihyperalgesic effect. Amitriptyline (300 and 1000 nmol) produced an analgesic action when administered into the normal non-sensitized hindpaw. Both drugs increased paw volume, particularly at higher doses; biogenic amines are not involved in the action of amitriptyline, as was shown previously for ketamine.

CONCLUSIONS: (a) The mild thermal injury model can reveal peripherally mediated antihyperalgesic and analgesic properties, (b) ketamine produces antihyperalgesia, but not analgesia, when administered locally, (c) amitriptyline produces both antihyperalgesia and analgesia when administered locally, (d) the increase in paw volume produced by these drugs occurs by different mechanisms.

P-98
INCIDENCE OF CHRONIC PAIN AND DISABILITY FOLLOWING UPPER EXTREMITY NERVE REPAIR SURGERY

S Sikka MD[1], C McCartney MB FRCA[1], R Pinto PhD[2], D Anastakis MD FRCSC[3]
[1]Departments of Anaesthesia, [2]Biostatistics and [3]Surgery, Toronto Western Hospital, University of Toronto

INTRODUCTION: Many patients suffer disability following nerve repair surgery in the upper extremity and this can be associated with pain. This study aimed to determine the incidence and investigate factors associated with development of chronic pain and disability in this population.

METHODS: After REB approval and informed consent patients who underwent nerve repair in the upper extremity were assessed for pain and disability, using validated questionnaires (Bodily Pain: SF-36[1] and DASH[2]), at baseline and at six month intervals following surgery. A retrospective telephone interview was performed to determine severity of pain in the postoperative period, adequacy of treatment of pain and compliance with rehabilitation. These factors were compared with measures of pain and disability to determine associations.

Bodily pain and DASH scores were analyzed as continuous variables. Multiple regression models were used to determine associations with pain and disability. Significance was assumed at $p < 0.05$.

RESULTS: Data from 22 patients were collected. At 6 months following surgery the median pain score was 45 (20-70) and disability score 29.6 (3.3 - 57.5). There was a significant correlation between pain, as measured by SF-36, and disability, as measured by DASH ($r=0.52$, $p=0.02$). Eight (36%) patients had a Bodily Pain score < 30 which is 2 SD below Canadian normative values indicating significant degree of pain. The only significant association with pain was increasing age ($p=0.03$).

CONCLUSION: Over one-third of patients continue to suffer significant pain six months following nerve repair in the upper extremity. Older patients are at increased risk.

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P-99
ANGER AND CHRONIC MUSCULOSKELETAL PAIN

Aurelio Sita PhD, Richard Catchlove MD
Montreal Pain Clinic

Although the roles of anxiety and depression in chronic musculoskeletal pain have been extensively examined, anger has received considerably less attention. This is unfortunate because anger is a commonly experienced emotion among chronic pain patients (Okifuji et al., 1999). The present study examined how anger is related to pain ratings, depression, psychological distress and self-reported functional disability in chronic musculoskeletal pain.

The sample consisted of 48 chronic musculoskeletal pain patients attending an outpatient multidisciplinary pain management program. Anger was assessed using the State-Trait Anger Expression Inventory-2 (a self-report anger measure) and the Awareness and Expression of Anger Indicator (AEAI) which assesses a subject's response to a hypothetical anger provok-

ing situation. Patients also completed the McGill Pain Questionnaire Short-Form (MPQ-SF), the Beck Depression Inventory (BDI), the Symptom Checklist-90-Revised (SCL-90-R), and the Oswestry Disability Index.
Pearson correlations revealed that STAXI-2 Anger-in (the tendency to conceal angry feelings) is associated with increased MPQ-SF affective pain ratings, psychological distress and depression. Anger-in was associated with increased psychological distress even after controlling for depression. The relationship between Anger-in and affective pain ratings became non-significant after controlling for depression. Anger-out (tendency to express anger outwardly and aggressively) was not related to pain, distress or depression. Effective management of an anger provoking situation was related to lower pain ratings and to lower sensory and affective pain ratings. The present results indicate that concealment of anger is negatively related to chronic pain patients' pain experience and affective state, whereas the effective management of anger is associated with decreased pain.

P-100
EVALUATION OF BOTULINUM TOXIN TYPE B (MYOBLOC) INJECTIONS IN A PATIENT WITH PAINFUL MUSCLE SPASMS

Andrew Dubin MD, Howard Smith MD, Junong Tang MD
Albany Medical Center, Albany, NY

Botulinum toxin in minute doses produces a specific muscle paralysis in injected muscles. This effect has been shown to be clinically beneficial for a variety of muscle disorders and dystonias. We report an interesting case study of 63-year old female with moderate to severe mental retardation and scoliosis. Despite multiple adjustments in psychiatric medications, she had a 6-month decline in behavior and functioning. Patient would act out and refuse to stand or transfer to various positions. Physiatric and pain management work-up revealed that patient had severe degenerative joint disease of the right hip. Exam was notable for reproduction of maladaptive behavior with stretching of the spastic right hip flexors, suggestive of pain in this region. The right iliopsoas muscle was evaluated with needle EMG, which showed that the muscle was hyperactive. To confirm needle placement, the needle electrode was converted from a recording electrode to a stimulating electrode. Stimulation at 200 volts reproduced and elicited right hip flexion. The patient was treated with botulinum toxin type B (Myobloc; BoNT-B) injection at the L2,3 and L3,4 levels via paralumbar approach into the right iliopsoas. A total dose of 5000 U was injected over the two sites. At 1-week post-injection, the patient appeared to be pain free, and her behavior and functioning were notably improved. A re-injection is planned in 3-4 months, if needed. It is conceivable that BoNT-B may be an effective treatment for painful muscle spasms. The progress of the patient will be followed, and results of BoNT-B treatment will be presented along with a review of current literature and discussion of potential clinical investigations with BoNT-B.
Support of Elan Pharmaceuticals is gratefully acknowledged.

P-101
EFFECTS OF PERIOPERATIVE LOW DOSE S(+)-KETAMINE AND MORPHINE VERSUS MORPHINE ALONE ON POSTOPERATIVE PAIN AND ANALGESIC USE

Dirk G Snijdelaar MD[1], Roger L Schmid MD[2], Hendricus B Cornelisse MD[1], Joel Katz PhD[3]
[1]Department of Anesthesiology/Pain Centre, University Medical Centre Nijmegen, Nijmegen, The Netherlands; [2]Zentrum für Diagnostik und Therapie, Köln, Rodenkirchen, Anästhesie und Schmerztherapie, Köln, Germany; [3]Department of Anesthesia and Pain Management, Toronto General Hospital and Mount Sinai Hospital, Toronto, Ontario

AIM: To study the effect of peri-operative low dose s(+)-ketamine on postoperative analgesia after major surgery.
METHODS: In this randomized, double blinded controlled study the efficacy of i.v. low-dose s(+)-ketamine plus morphine versus morphine alone was compared during surgery and over a 2-day period postoperatively in patients (n=28, ASA 1-3) undergoing radical prostatectomy. Patients in group 1 received s(+)-ketamine intraoperatively as a bolus injection (100 mcg/kg) and as a continuous infusion (2 mcg/kg/min). Patients in group 2 received saline. Postoperative analgesia was delivered by iv PCA (0.5 ml/bolus) with 1mg/ ml s(+)-ketamine and 2 mg/ml of morphine (group 1) or 2 mg/ml morphine (group 2). Assessments of pain (VAS-R, VAS-M), PCA morphine consumption and adverse effects were conducted during 48 hours after surgery. Secondary hyperalgesia was assessed with pressure algometry.
RESULTS: Cumulative morphine consumption at 48 h was significantly lower in group 1 compared with group 2 (group 1: 47.9 ± 26.2 mg vs. group 2: 73.4 ± 34.8 mg). Group 2 reported significantly higher VAS-R pain scores at 1, 2, 3, 4 and 18 hours after surgery. There were no significant differences in pressure algometry or incidence of adverse effects.
CONCLUSION: The use of low dose of s(+)-ketamine during and after radical prostatectomy surgery resulted in a reduction in VAS-R during the first 4 hours (and at 18 hours) after surgery and in a reduction of total cumulative PCA morphine consumption. NMDA receptor antagonism by low dose s(+)-ketamine may attenuate acute opioid tolerance and/or postoperative pain.

P-102
BEHAVIOURAL AND PHYSIOLOGIC PAIN RESPONSES IN NEONATES AT RISK FOR NEUROLOGICAL IMPAIRMENT: PRELIMINARY RESULTS

Bonnie Stevens RN PhD1,2,3, Patrick McGrath OC PhD FRSC4,5,6, Joseph Beyene PhD2,3, Lynn Breau PhD6, Carol Camfield MD FRCPC4,5,7, Allen Finley MD FRCPC6,8, Linda Franck RN PhD9, Sharyn Gibbins RN PhD3,10, Alexandra Howlett MD FRCPC5, Celeste Johnston RN PhD12, Patricia McKeever RN PhD1, Karel O'Brien MB BCh BAO FRCPC11, Arne Ohlsson MD FRCPC2,11
[1]Faculty of Nursing, University of Toronto, Toronto, Ontario; [2]Faculty of Medicine, University of Toronto, Toronto, Ontario; [3]Research Institute, The Hospital for Sick Children, Toronto, Ontario; [4]Psychology, IWK Health Centre, Halifax, Nova Scotia, Ontario; [5]Pediatrics, Dalhousie University, Halifax, Nova Scotia; [6]Pediatric Pain Service, IWK Health Centre, Halifax, Nova Scotia; [7]Division of Neurology, IWK Health Centre, Halifax, Nova Scotia; [8]Anesthesiology, IWK Health Centre, Halifax, Nova Scotia; [9]Institute of Child Health, University College London, London, United Kingdom; [10]Interdisciplinary Research & Evidence Based Practice, Sunnybrook & Womens Health Sciences Centre, Toronto, Ontario; [11]Pediatrics, Mount Sinai Hospital, Toronto, Ontario; [12]Nursing, McGill University, Montreal, Quebec

AIM: Although neonatal pain has been researched considerably, neonates at risk for neurological impairment (NI) have been excluded from most studies. The objective is to determine pain responses in neonates at high, moderate and low risk for NI.
METHODS: A prospective observational cohort study was undertaken with 83 neonates (GA >25- 40 weeks) at high (cohort A, n=26), moderate (cohort B, n=13) and low (cohort C, n=44) risk for NI from 3 tertiary level NICUs in Canada. Behavioral (facial activity, cry) and physiological (heart rate, oxygen saturation) responses were recorded during baseline, warming, post procedure and return to baseline phases of a routine heel lance procedure. Data were coded using the NFCS (Grunau, 1999) and Multi-Speech software (Kay Elemetrics Corp) and analyzed using descriptive statistics and RM ANOVA.
RESULTS: A significant within-subject effect of phase existed with increased facial activity ($F_{239,3}$ = 45.58, p <.0001), maximum HR ($F_{302,3}$ =5.80, p=.0007), minimum HR ($F_{302,3}$ =6.81, p=.0002), and decreased minimum 02 ($F_{297,3}$ =5.72 , p=.0008) during the post procedure and return to baseline phases of the heel lance. There was also a significant between-subject effect with cohort A exhibiting less facial activity ($F_{233.2}$=12.17, p=<.0001), lower maximum HR ($F_{302,2}$=14.4, p<.0001) and lower minimum HR ($F_{302,2}$=5.52, p<.004). There were no differences in cries.
CONCLUSIONS: Infants at the highest risk for NI demonstrated the least facial activity and physiologic response during a painful procedure. Further research with a larger sample is required to better delineate indicators of pain in neonates at risk for NI.

P-103
TREATMENT OF CHRONIC NEUROPATHIC PAIN WITH PAMIDRONATE: CASE REPORT OF TWO ADOLESCENTS

Jennifer Stinson RN MSc CPNP, Stephen Brown MD
Chronic Pain Program, Department of Anaesthesia, The Hospital for Sick Children and University of Toronto

This abstract will be submitted to the Pediatric Pain Congress in Sydney, Australia.

P-104
TREATMENT OF CHRONIC INTRACTABLE NEUROPATHIC PAIN WITH DRONABINOL: CASE REPORT OF TWO ADOLESCENTS

Jennifer Stinson RN MSc CPNP[1], Stephen Brown MD[1], Zvia Rudich MD[1], Michael Jeavons MB ChB[2]
Chronic Pain Program, Department of [1]Anaesthesia and [2]Psychiatry, The Hospital for Sick Children and University of Toronto, Toronto, Ontario

AIM: To evaluate the effectiveness of dronabinol for the treatment of neuropathic pain refractory to previous treatment.

METHODS: After informed consent, we studied the response (reduction in pain intensity and functional improvement) to dronabinol (5 - 25 mg/day) over an 8 month period in 2 adolescents with neuropathic pain and depression refractory to previous treatments (pain duration ranged 4 - 5 years) using a case report study design.

RESULTS: Reduction in pain intensity (45%) was achieved in one patient. Functional improvement was markedly increased in terms of academic performance, mood and sleep in both patients over a follow-up period of 8 months without major adverse effects. While these improvements dissipated over time, the patients were more reconnected with the notion and process of rehabilitation (e.g., crafting a normal life) and focused less on the intrusiveness of their pain problem in their every day lives.

CONCLUSIONS: Dronabinol appeared to be effective in the improving pain affect and psychosocial functioning in the treatment of refractory neuropathic pain and may be considered as an adjuvant medication in facilitating rehabilitation. These results need to be confirmed by well-controlled placebo studies.

P-105
PRELIMINARY OUTCOMES FOR AN INNOVATIVE COMMUNITY-BASED INTERDISCIPLINARY CHRONIC PAIN CENTRE

Pamela Barton MD, Paul Taenzer PhD, Geoffrey Schultz PhD, Sharon Habermann MA
Calgary Chronic Pain Centre, Calgary Alberta

AIM: The Calgary Chronic Pain Centre was implemented in July 2000 as a two-year pilot project funded through the Tripartite Process on Health Care Reform. The aim of this project was to assess the impact of this model of care on the clinical outcomes and quality of life for patients with chronic non cancer pain (CNCP).

METHODS: The program offers a comprehensive, interdisciplinary model for patients who have CNCP in three areas: 1) chronic daily headache; 2) pelvic pain in women; and 3) musculoskeletal pain. The individualized patient centered model integrates specialized medical interventions toward resolving pain generators with patient skill development in pain self-management strategies, appropriate lifestyle modifications and physical reconditioning. Outcome measures include: pain intensity changes, Multidimensional Pain Inventory (MPI), Pain Disability Index, Headache Disability Index, SF 36 quality of life scale, physiotherapy outcome measures.

RESULTS: Clinical outcomes will be presented for 80 patients who had graduated from the CCPC program as of August 31st, 2002. The average decrease in pain intensity was 44%. The average decrease in perceived disability due to pain was 34%. Significant changes were also found on the MPI and the SF 36. Patient satisfaction was also high.

CONCLUSIONS: These data suggest that this model of care is effective for these patient populations. Further research is required to determine the societal and health-care system impacts of the model.

P-106
RELATIONSHIP BETWEEN THE PERSONALITY FACTOR OF OPTIMISM AND COPING SCORES FOR WEEKLY HEADACHES IN UNIVERSITY STUDENTS

Erin-Brie Warwick, Michael R Thomas PhD, Tiffany Scott, Crystal Garside
Department of Psychology University of Manitoba, Winnipeg, Manitoba

AIM: Compared headache frequency, severity and pain coping scores between university males and females with high and low optimism scores.

METHODS: Participants were 200 young adults who reported headaches with a weekly frequency. Participants were divided into four groups, 1) high optimism, males, 2) high optimism, females, 3) low optimism, males and 4) low optimism, females. All participants filled out a questionnaire that included demographic questions on pain location, frequency, and severity, the Optimism/Pessimism Scale, the Life Orientation Scale and the Pain Coping Scale. Participants were recruited from first year university students.

RESULTS: The responses for the four groups were compared statistically. There were significant differences in pain behaviors across the four groups. High optimism male participants reported less severe headache ratings than the other groups. The low optimism female participants reported highest headache severity and frequency ratings. High coping scores for headache were correlated with sex, optimism scores, high Life Orientation scores, low depression scores and high self-esteem scores.

CONCLUSIONS: The personality feature of optimism was related to reported headache frequency and ratings of severity. There were differences between the correlations for pain severity, sex and optimism scores. Implications of personality factors on pain coping for headache between the four groups in regards to goals for therapy are discussed.

P-107
RELATIONSHIP BETWEEN THE PERSONALITY DIMENSIONS SENSATION SEEKING, SEX ROLE AND REPORTING OF HEADACHE FREQUENCY AND SEVERITY IN UNIVERSITY STUDENTS

Crystal Garside, Michael R Thomas PhD, Tiffany Scott, Erin-Brie Warwick
Department of Psychology University of Manitoba, Winnipeg, Manitoba

AIM: To compared headache frequency and severity between university males and females with high and low sensation seeking and high and low sex roles scores.

METHODS: Participants were of 100 males and 100 females reporting weekly headaches. These participants were divided into four groups, 1) high sensation seeking, high sex role males, 2) high sensation seeking, high sex role females, 3) low sensation seeking, low sex role males and 4) low sensation seeking females. All participants filled out a questionnaire about headache frequency and severity, the BEM Sex Role Inventory, Zuckerman Sensation Seeking Scale V-Revised, BDI, and the Pain Coping Scale.

RESULTS: The responses for the four groups were compared statistically. There were significant differences in pain behaviors across the four groups. High male sex role participants reported less severe headache ratings than high female sex role participants. High coping scores were correlated with sex, male sex role scores, sensation seeking, low depression scores and high self-esteem scores.

CONCLUSIONS: The personality features of sex role identification and sensation seeking are related to reported headache frequency and ratings of severity. There were differences between the correlations for pain severity,

sex and sex role scores. Implications of personality factors on pain coping for headache between the four groups are discussed.

P-108
THE PAIN EXPERINECE OF WOMEN UNDERGOING SECOND TRIMESTER TERMINATIONS FOR FETAL ANOMALIES.

Stacey L Dunphy[1], Anita M Unruh PhD RSWOT(C) RegNS[2]
Erna Snelgrove-Clarke[1]
[1]Education Women's Health, IWK Health Centre, Halifax, Nova Scotia; [2]School of Occupational Therapy, Dalhousie University, Nova Scotia

AIM: The purpose of this study was to examine the pain experience of women undergoing a second trimester termination for a fetal anomaly. The study will describe: 1) the intensity and nature of the women's pain experience; 2) the relationship between women's anticipated and actual pain experience at the time of delivery; and, 3) nurses' and patients' assessment of pain at the time of delivery.

METHODS: All women (n=28) meeting the inclusion criteria were approached by the research assistant (RA) on admission to the inpatient unit. The RA met with the woman to obtain consent. The RA met the woman prior to the induction to complete the Pre-induction and Delivery Interview. The RA approached the primary nurse to complete the Pain Experience Nursing Questionnaire. Prior to discharge, the RA met with the woman and completed the Post Induction and Delivery Questionnaire and the Short Form McGill Pain Questionnaire.

RESULTS: An interim analysis of this study was conducted to insure that no woman experienced severe pain during delivery. This analysis found that women reported little or no pain during delivery even though they expected to have moderate levels of pain. In contrast, the nurses caring for these women rated the women as having moderate to severe levels of pain. Analysis of the completed study will further examine the differences between the women's pain experiences and the nurses' perceptions of the women's experiences.

CONCLUSIONS: This study increases our understanding of women's pain experiences during traumatic procedures and factors that may influence the perception of such experience by health professionals.

P-109
THE *FACES PAIN SCALE - REVISED* (FPS-R) AROUND THE WORLD: TRANSLATION AND ADAPTATION FOR USE IN MANY CULTURES

Carl L von Baeyer PhD[1], Tiina Piira MPsychol[2]
[1]Departments of Psychology and Pediatrics, University of Saskatchewan, Saskatoon; [2]Pain Research Unit, Sydney Children's Hospital, and School of Psychology, University of New South Wales, Sydney, Australia

AIMS: The *Faces Pain Scale - Revised* (FPS-R) is a self-report scale for measurement of pain intensity in children over 3 years of age. It is scored 0-to-10; the faces display neither smiles nor tears. The aims of this project are to survey projects in which the FPS-R has been translated into different languages, and to describe the process of producing a valid translation of the instructions for administration.

METHOD: Based on consultation with researchers around the world concerning translation of the FPS-R, and on an online survey, we describe the methods followed in producing validated translations of the instructions.

RESULTS: To date, French, German, Spanish, and Chinese (Cantonese) translations have been completed, and others (Turkish, Italian, Thai) are in progress.

CONCLUSIONS: Important steps in translation include: (a) identifying child-recognized words in the second language corresponding to key concepts such as pain, hurt, a little bit of pain, and very much pain; (b) translating the instructions into the second language; (c) obtaining a back-translation into English using a translator not familiar with the original English FPS-R; (d) checking the correspondence of the back-translation to the original; (e) pilot-testing the translation with clinical samples of children with pain and with pain-free children using hypothetical pain situations.

Because the FPS-R instructions are brief and simple, and the faces have few specific ethnic characteristics, this scale is suitable for translation and use in different cultures.

REFERENCE: The FPS-R is available free online, including instructions for administration in French and English, at www.painsourcebook.ca

P-110
PEER INFLUENCE AND PAIN: WHO HAS MORE INFLUENCE, FRIEND OR STRANGER?

Tina C Wang MA, Linnet E Finley, Kenneth D Craig PhD
University of British Columbia

Indisputably, familial and parental models exert powerful influences on children's pain experience. Even in the absence of a close relationship between the actor and observer (e.g., strangers), individuals' pain tolerance and perception could be altered via social influence (e.g., Prkachin & Craig, 1986). As adolescents transition into adulthood, friends become crucial normative and comparative reference points and are sources of support and intimacy. Research on social influences on pain has largely neglected the formative impact of peers, which is surprising given the documented peer influences on other health-related behaviors. Understanding peer influences is a necessary prerequisite to appropriate pain management in young adults. The present study examines the relative strength of social modeling between friends and strangers on young women's pain experience.

Data from sixty female undergraduate students plus their friends will be analyzed. Each pair of friends will be randomly assigned to either Friend or Stranger condition and undergo a cold-pressor task. Participants will be asked to provide verbal ratings of unpleasantness periodically during the task. The associations between friends' pain tolerance, heart rate, and self-reported pain intensity (using the Visual Analogue Scale) and unpleasantness (Gracely Verbal Rating Scale; Gracely & Dubner, 1987) will be compared to associations between strangers' on the same measures to determine the relative importance of friends' versus strangers' influence on a person's pain experience. Clinical implications of dissemination and delivery of pain management information, particularly with respect to menstrual pain in young women will be discussed.

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P-111
MEASURING PAIN INTENSITY AND QUALITY: LESSONS FROM RHEUMATOID ARTHRITIS

Mark Ware MBBS MRCP(UK)[1], Abdulaziz Almahrezi MBChB[1], Mary-Ann Fitzcharles MBChB[2]
[1]MUHC Pain Centre, [2]Division of Rheumatology, McGill University, Montreal, Quebec

INTRODUCTION: Chronic pain is a constellation of psychological and physiological factors. The visual analogue scale (VAS) is currently the gold standard of pain intensity measurement. The purpose of this study was to compare pain measures as potential descriptors of pain quality.

METHODS: Patients with rheumatoid arthritis were consecutively recruited from a multidisciplinary Pain Clinic. Present pain intensity was measured using a 10cm VAS, a 4-point and a 5-point Likert scale. Quality of pain was measured using the 20 descriptors of the McGill Pain Questionnaire (MPQ). Correlation coefficients were calculated for theVAS and other measures.

RESULTS: Sixty patients were recruited (mean age 57 (SD13), 54 (90%) female). The median duration of pain was 13 years (IQR 5,21). Forty -two patients (71%) were rheumatoid factor positive. The mean VAS was 4.3 (SD 2.7), and the mean MPQ score was 18 (SD 11). The VAS score was correlated with the 4 point Likert scale (r^2=0.51), the evaluative subscale

of the MPQ (r^2=0.44) , the 5 point Likert scale (r^2=0.41) and the total MPQ (r^2=0.38) ($p<0.001$ for all tests).
DISCUSSION: Likert scales and the evaluative scale of the MPQ may provide useful information on pain levels and quality respectively, and reflect VAS scores. Further modeling of this data is required to determine the influence of demographic characteristics and to determine the descriptive value of these instruments with respect to overall satisfaction with pain control.

P-112
NEUROPATHIC PAIN – ANTIDEPRESSANT THERAPY: A SYSTEMATIC REVIEW

Peter N Watson FRCPC Medicine
University of Toronto

This systematic review updates randomized controlled trials (RCTs) of antidepressants in neuropathic pain and compares this relief in different neuropathic conditions and with other drugs. Literature searches were carried out by 3 librairians at different libraries, and by the author utilizing PubMed, Medline, Embase and the Cochrane library and personal contact. All RCTs in English over the past 5 years were requested to update a previous search. These trials were evaluated for quality using the criteria of Kingery and of Guyatt and Oxman. Of particular interest were number needed to treat data in order to assess the clinical meaningfulness of pain relief. Most studies have been carried out in painful diabetic neuropathy (PDN) and postherpetic neuralgia (PHN). Data support the utility of the antidepressants with a serotonergic and noradrenergic effect (amitriptyline, imipramine) and the selective noradrenergic agents nortriptyline, desipramine, maprotiline, bupropion). Some serotonergic agents appear to have a weaker effect (paroxetine, citaloprim, clomipramine). Fluoxetine appears ineffective. Some antidepressants provide useful relief in about 50% of patients with neuropathic pain with comparable relief to opioids and superior relief to anticonvulsants. These agents appear more effective in PHN than PDN.

P-113
DEVELOPING AND IMPLEMENTING AN INTERPROFESSIONAL PAIN EDUCATION CURRICULUM FOR SIX HEALTH SCIENCE FACULTIES

J Watt-Watson[1], J Hunter[2], P Pennefather[3], L Librach[4], L Raman-Wilms[3], M Schreiber[4], L Lax[4], J Stinson[1], T Dao[5], A Gordon[4], D Mock[5]
Faculties/Departments of [1]Nursing, [2]Physical Therapy, [3]Pharmacy, [4]Medicine, [5]Dentistry, University of Toronto

AIM: To develop and implement one integrated pain curriculum for six Health Science Faculties at the University of Toronto for the week of March 18-22, 2002.
METHOD: The University of Toronto Centre for the Study of Pain's Interfaculty Pain Education Committee represented the Faculties/Departments of Dentistry, Medicine, Nursing, Pharmacy, Physical Therapy and Occupational Therapy. Over an 18-month period, they developed a 20-hour undergraduate pain curriculum based on IASP core and discipline-specific curricula for 540 students as part of their 2nd or 3rd year program. The curriculum committees of all faculties approved the content. Learning strategies included large and small group sessions and student manuals. Standardized patients (SPs) and 63 facilitators from the disciplines involved helped to promote learning in the 23 smaller interdisciplinary groups. Facilitators, chosen for their pain knowledge and group skills, attended an orientation session on the manuals and working with SPs . A subset of 70 volunteer students participated in an e-learning research component that supported the face-to-face curriculum. Case studies focused on cancer and neuropathic pain. Evaluations were completed by students and facilitators.
RESULTS: Overall ratings of exceeding or meeting expectations ranged from 74%-92%. The most successful components were the patient-related content and panel, small group discussions with standardized patients, and the panel on advocacy and ethics. Student diversity was most evident in neurophysiology backgrounds.
CONCLUSIONS: The basic model will be repeated in March of 2003 with a larger e-learning component. Changes will include consistent clinical application in all components and more collaborative professional modeling.

P-114
PATIENTS' PAIN MANAGEMENT FOLLOWING DISCHARGE AFTER DAY SURGERY

J Watt-Watson RN PhD[1], F Chung MD FRCPC[2], V Chan MD FRCPC[2], M McGillion RN PhD (student)[1]
[1]University of Toronto, Faculty of Nursing; [2]University Health Network, Toronto Western Hospital Department of Anaesthesia

AIM: The degree to which patients need help with pain management at home following laparoscopic cholecystectomy [LC], shoulder or hand day-surgery has received minimal examination. This preliminary study examined pain management of these patients at 4 time periods during the first week after discharge.
METHOD: Data were collected from 172 patients by telephone interviews at 24-hours, 48-hours, 72-hours, and 7 days post-surgery. Outcomes included pain and related interference [Brief Pain Inventory-Short Form] and analgesic use. Drug side effects, complications and system use, and adequacy of post-discharge information were also documented.
RESULTS: Patients [70 hand-51% female, 48 shoulder-85% male, 54 LC-78% female] were on average 41 years. Worst 24-hour pain was reported as moderate and/or severe at all time periods [X(SD)=8(2) 24h to 5(3) day 7]. Although by day 7 pain decreased for hand and LC patients, shoulder patients had severe pain [X(SD)=7(2)]. Using ANOVA-RPM, shoulder patients had significantly more pain-related interference in sleep and work. Patients most frequently took Tylenol 3s, although 50% took no analgesia from 72-hours. 40% experienced analgesic side effects within 72 hours, mainly constipation and nausea. < 5% used other strategies. Bleeding (4%) and sore throat (11%) at 24-48h were identified as complications and 6(4%) called their physician.
CONCLUSION: Despite considerable pain across all time periods, analgesic use and other interventions were minimal. Side effects were problematic for 40%, possibly explaining why 50% stopped analgesics by 72-hours. These data support further research on more effective pain interventions and related education for day-surgery patients after discharge.

P-115
MARIJUANA – A REVIEW

Helen Hays MD[1], Mary Ann Woodroffe
[1]Associate Clinical Professor, University of Alberta, Edmonton, Alberta

AIM: To discuss the chemical properties and possible therapeutic value of marijuana and to review current Canadian regulations for medical use.
METHODS: Marijuana is composed of approximately 60 cannabinoids of which delta-9 THC is the major psychoactive component. Two others are cannabinol (CBN) and cannabidol (CBD). Ratios of the constituents vary with the species and methods of cultivation; varieties grown now are 700% more powerful than 30 years ago. Renewed interest in marijuana for modulation of pain came with the identification of cannabinoid receptor system and the discovery of endogenous cannabinoids.
RESULTS: Marijuana is most commonly smoked; this is more harmful than cigarette smoking since filters are not used and the smoke is hotter. The actual dose is difficult to quantify and bioavailability varies from 5-24%. Marijuana may also be used intranasally, sublingually or transdermally. When consumed orally, cannabis needs to be heated or cooked; bioavailability is poor and efficacy is reduced due to first pass metabolism. Clinical effects of marijuana include euphoria, dysphoria, tachycardia, bronchodilation, cognitive changes, motor changes and increased appetite. Medicinal effects include improved appetite, decreased intraocular pressure and analgesia. Marijuana is lipid soluble and metabolized mainly in the liver. It is not a gateway drug and cognitive deficits are reversible. Currently, federal regulations allowing for the medical use of marijuana stipulate that any physician may sign for the terminally ill but either one or two specialists are required to give approval for its use with chronic illness.

CONCLUSIONS: Research is ongoing; more is understood regarding the risks rather than benefits. Marijuana products may be promising as a new way to use a very old drug.

P-116
GENDER DIFFERENCES IN PHANTOM LIMB PHENOMENA REPORTED BY CHILD AND ADOLESCENT AMPUTEES

Krista L Wilkins RN BScN[1], Patrick J McGrath PhD[1,2], G Allen Finley MD[1,3], Joel Katz PhD[4]
[1]Pediatric Pain Research Lab, IWK Health Centre, Halifax, Nova Scotia; [2]Departments of Psychology, Psychiatry, Pediatrics, and Biomedical Engineering, Dalhousie University, Halifax, Nova Scotia; [3]Department of Anaesthesia, IWK Health Centre, and Dalhousie University, Halifax, Nova Scotia; [4]Department of Psychology and School of Kinesiology and Health Science, York University, Department of Anesthesia and Pain Management, University Health Network and Mount Sinai Hospital, Toronto, Ontario

OBJECTIVE: To prospectively study factors associated with the occurrence of non-painful and painful phantom sensations in child and adolescent amputees.
DESIGN: Prospective diary study over one month.
Participants: Fourteen child and adolescent amputees from 10-18 years of age who were missing a limb due to trauma (n = 12) or congenital limb deficiency (n = 2), and who had previously reported having phantom sensations and pain.
MAIN OUTCOME MEASURE: Diary used to assess the occurrence of non-painful and painful phantom sensations. Items included age, sex, location and cause of amputation, past experience with stump pain and pre-amputation pain, and intensity, quality, duration and triggers of the sensations and pains.
RESULTS: Thirteen amputees reported having 104 incidents of non-painful phantom sensations with an average intensity of 4.17 (SD = 2.14) on a 0-10 rating scale. Fifty-three incidents of phantom pain with an average intensity of 6.43 (SD = 1.76) were recorded by eight amputees. Both amputees with a congenital limb deficiency reported phantom phenomena. Girls reported more psychosocial triggers than did boys whereas boys were more likely than girls to report that they could not identify a trigger ($p = 0.0001$). Boys also reported a higher proportion of physical triggers than psychososical triggers while there were no differences for girls ($p = 0.0001$).
DISCUSSION: Child and adolescent amputees experience phantom sensations and pains on a regular basis over a one-month period. Differences in triggers of phantom phenomena between boys and girls may be due to differences in activities, awareness, attribution, and willingness to report psychosocial triggers.

P-117
HAIR CORTISOL AS A BIOLOGIC MARKER OF CHRONIC STRESS IN NEONATES: A PILOT STUDY

Janet Yamada RN MSc[1], Bonnie Stevens RN PhD[1,2,3], Nicole de Silva RN MSc[1], Julia Klein MSc[1], Gideon Koren MD FABMT FRCPC[1,3]
[1]The Hospital for Sick Children; [2]Faculty of Nursing, University of Toronto; [3]Faculty of Medicine, University of Toronto

This abstract has been submitted to the 2003, Pediatric Academic Societies Meeting in Seattle.

P-118
FEATURES OF CENTRAL SENSITIZATION (CS) IN VPM THALAMIC NOCICEPTIVE NEURONS EVOKED BY MUSTARD OIL (MO) APPLICATION TO TOOTH PULP

S Zhang DDS, CY Chiang MD, SJ Park DDS, JO Dostrovsky PhD, JW Hu PhD, BJ Sessle MDS PhD
Faculty Dentistry and Medicine, University Toronto, Toronto, Ontario

AIM: We have recently demonstrated that MO application to the tooth pulp induces CS in trigeminal brainstem subnucleus caudalis (Vc, the medullary dorsal horn) nociceptive neurons. The aim of this study was to test if the CS can be induced in VPM and influenced by Vc disruption.
METHODS: In urethan/ chloralose-anesthetized rats, single unit activity (n=358) was recorded in contralateral VPM and neurons identified as nociceptive-specific (NS, n=60) or wide-dynamic range (WDR, n=17). In 36 NS neurons spontaneous activity, mechanoreceptive field (RF), mechanical activation threshold and graded pinch-evoked responses were assessed prior to and after MO application to the ipsilateral molar pulp. The synaptic blocker CoCl2 (5 mM) or saline as a control was applied to Vc (10 ml, i.t.) 20 min after MO application.
RESULTS: The 77 nociceptive neurons were distributed throughout VPM. MO application evoked immediate short-lasting neuronal discharges (10-100 s) in 18 VPM neurons and induced CS reflected in a significant long-lasting RF expansion, increase in graded pinch-evoked responses, and threshold reduction in 36 VPM neurons (repeated measures ANOVA, $P<0.05$). CoCl2 (n=8) but not saline (n=8) applied to Vc significantly reversed the decrease in threshold and increase in RF size and graded pinch-evoked responses for 10-30 min ($P<0.05$).
CONCLUSIONS: These findings indicate that NS and WDR neurons are distributed throughout VPM, and that disruption of synaptic transmission within Vc can block the MO-induced CS in VPM nociceptive neurons, suggesting that CS in VPM may depend upon the functional integrity of Vc.
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P-119
INDUCTION OF CB2 RECEPTOR EXPRESSION IN THE RAT SPINAL CORD OF NEUROPATHIC BUT NOT INFLAMMATORY CHRONIC PAIN MODELS

Ji Zhang PhD, Cyrla Hoffert MSc, Huy Khang Vu MSc, Thierry Groblewski PhD, Sultan Ahmad PhD, Dajan O'Donnell PhD
AstraZeneca R&D Montreal, 7171, Frederick-Banting, Ville St-Laurent, Quebec

Cannabinoids have been considered for some time as potent therapeutic agents in chronic pain management. Central and systemic administration of natural, synthetic and endogenous cannabinoids produce antinociceptive and antihyperalgesic effects in both acute and chronic animal pain models. Although much of the existing data suggest that the analgesic effects of cannabinoids are mediated via neuronal CB1 receptors, there is increasing evidence to support a role for peripheral CB2 receptors, which are expressed preferentially on immune cells. As yet, little is known about the central contribution of CB2 in neuropathic pain states. By detecting CB2 mRNA using in situ hybridization method, we report here that chronic pain models associated with peripheral nerve injury (CCI and Chung models), but not peripheral inflammation, induce CB2 receptor expression in a highly restricted and specific manner within the lumbar spinal cord. Moreover, we found that the appearance of CB2 expression coincides with the appearance of activated microglia. Although further pharmacological and behavioral studies are needed to determine the central effects of CB2 receptor in analgesia, the present demonstration that CB2 mRNA is expressed on activated microglia in the spinal cord following peripheral nerve injury raises the possibility for the development of cannabinoid-based analgesics with minimal psychotrophic actions.

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No submission