

THE SCIENCE OF PAIN AND ITS MANAGEMENT

ABSTRACTS



8th - 10th December 2015
London, UK

EuroSciCon 

This international three day event will discuss the latest research relating to the physiology, psychology and pharmacology of pain, the psychosocial aspects of pain, and its assessment and management. With plenty of opportunity for discussion and networking this informal meeting is an ideal setting to keep up to date with pain science.

This event has [CPD accreditation](#)

This abstract book will be finalised two weeks before the event
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Invited Speakers Abstracts

Exploring interpersonal and psychosocial factors in chronic pain: the role of 'significant others'

Dr Joanna Brooks, Senior Research Fellow, University of Huddersfield, UK

Whilst psychosocial factors are widely recognised as potentially important in pain conditions, a comprehensive understanding of how pertinent interpersonal factors might operate in determining functional outcomes is still required. The ways in which those close to patients may be important in determining patients' management of and beliefs about their pain symptoms. This talk will describe research undertaken at the University of Huddersfield exploring influences in the home environment in persistent pain conditions. Findings illustrate the complexity of long-term chronic health conditions and provide an insight into some of the wider social influences that may impact on functional outcomes in pain conditions.

Electrical stimulation of the insular cortex for the treatment of pain: an experimental target for pain management

Dr Camila Squarzon Dale, University of São Paulo, Av. Lineu Prestes, São Paulo, Brazil

Electrical brain stimulation is a treatment that has been used in patients with refractory neuropathic pain however some patients still do not benefit from this treatment, indicating that more specific targets need to be found. Experimental data demonstrate that insular cortex TDCS induces antinociception, indicating this area as an option for the treatment of neuropathic pain since it has connections with brain structures involved with descending analgesic pain route via integrations that enable modulation of cognitive-evaluative, affective-motivational and sensory-discriminative dimensions. Herein we investigate the effect of electrical stimulation of the insular cortex (EECI) on an experimental model of neuropathic pain.

How many ways of pain identification in sedated and mechanically ventilated patient in the intensive care unit are there?

Mrs Irmela Gnass, Paracelsus Medical University, Institute of Nursing Science and – practice, Münster, Germany

The talk focuses on pain assessment for sedated and mechanically ventilated patients in intensive care units and the creation of a pain diagnosis. Study results showed that nurses and physicians act within a certain framework, mainly according to the ICU specific algorithm for pain, sedation and delirium. Health care professional often determined the pain-diagnosis after they have excluded other phenomena. In fact, within the pre-defined framework of pain management nurses have a room for maneuver in which they act independently. Currently it is not clear how this influences patients' wellbeing.

Where and why are children sore after laparoscopic appendicectomy?

Dr James K.M. Hamill, University of Auckland, Department of Surgery, 4th floor, Starship Children's Hospital, Auckland. New Zealand

Children can experience considerable pain after appendicectomy for acute appendicitis, even with a 'minimally invasive' approach. We developed and validated a tool to measure where children feel pain after abdominal surgery. We performed trials to find ways to reduce postoperative pain.

In sick-listed low back pain patients unsuccessful return to work was predicted by a multivariate model, and type 1 modic changes was the only degenerative manifestation negatively associated with outcome

Dr Ole Kudsk Jensen, Consultant, PhD, Spine Center, Diagnostic Center, Regional Hospital Silkeborg, Falkevej 1-3, 8600 Silkeborg, Denmark

In 325 sick-listed low back pain (LBP) patients a multivariate prognostic model for unsuccessful return to work (U-RTW) was developed and validated with success in a subsequent cohort of 120 patients, who were recruited, randomised and managed similarly. U-RTW was not different in patients with and without radiculopathy. The model included back+leg pain intensity, side-flexion, bodily distress and four psychosocial risk factors. Magnetic resonance imaging of the lumbar spine was performed consecutively in 141 of these patients, and the images were described standardised. Only type1 Modic changes, which was identified in 18%, was negatively associated with U-RTW, also after adjustment.

Alternatives to mu opioids in the biopsychosocial rehabilitation of chronic pain.

Dr Leonard B. Kamen D.O., Clinical Associate Professor - Physical Medicine and Rehabilitation, MossRehab Hospital - Temple University Hospital Department of Physical Medicine and Rehabilitation, Philadelphia, PA, USA
Opioid receptor pharmacology may dictate behavioral aspects of chronic pain creating barriers to successful rehabilitation. Selective use of kappa opioid antagonists and opioids that are not pure mu receptor biased allows for effective analgesia and opens the door to both physical and psychological aspects of pain management critical to self efficacy. Altering opioid based treatments engaging available medications combined with motivational and cognitive science enhances physical performance in chronic non-cancer pain.

Keeping the animal safe-pain and the sensorimotor system

Professor Candy McCabe, Professor of Nursing and Pain Sciences, University of the West of England, Bristol, NIHR Career Development Fellow Consultant Nurse, Bath Centre for Pain Services, Royal National Hospital for Rheumatic Diseases, Upper Borough Walls, Bath, UK

The simple act of moving a limb requires a complex interaction between the ability to accurately sense the world around us, timely relay of that information to the brain, and the planning and execution of a response to that new knowledge. When these pathways become disrupted, as in chronic pain, discordances in sensorimotor function may generate pain and other somaesthetic disturbances. This lecture will consider the roles of the motor and sensory systems in the perception and generation of pain and how these systems can be modulated to relieve or generate symptoms in those with and without chronic pain.

Improving the management of chronic pain with information and communication technologies. The case of Fibroline as an example

Dr. Jordi Miró, Unit for the Study and Treatment of Pain - ALGOS, Universitat Rovira i Virgili, Tarragona, Spain

In recent years, what is known as mobile health or mHealth has been promoted as an alternative for the assessment and management of pediatric chronic pain problems. In this talk, we will review this area and introduce Fibroline which is an app that has been developed to help young people with fibromyalgia or chronic widespread pain to improve their quality of life. This presentation will be used to provide examples of how to overcome specific difficulties in developing these apps.

HCN ion channels and pain

Professor Peter McNaughton, Professor of Pharmacology, King's College London.

HCN2 ion channels generate an inward current into nociceptive nerve fibres exposed to inflammatory mediators and so cause repetitive firing. We find that both inflammatory and neuropathic pain in intact animals is abolished by either genetically deleting or blocking HCN2. Blocking HCN2 is an effective analgesic in several animal models of pain, including inflammation, nerve injury, cancer chemotherapy and diabetic neuropathy. Current work is focussing on the development of HCN2-selective blockers as novel analgesics.

Is the baby 'asleep'?: Quantifying critically unwell infant's pain and sedation

Dr. Stephen McKeever, R.G.N, RN (Child), ENB 998 & 415, Dip.Trop.Nurse, BSc.(Hons), Ph.D., Senior Lecturer in Children's Nursing, Department of Children's Nursing, London South Bank University, UK

To enable treatments and procedures to be delivered to critically unwell children, analgesics and sedatives are often administered. Titrating the right dose of these medications can be likened to Goldilocks's conundrum in the three bear's house. Too much can lead to adverse cardiovascular changes, nausea /vomiting, drug dependency/withdrawal, increased length of stay and neuroapoptosis. Conversely infants who receive too little can be at risk of poor compliance with treatments, physiological instability and post-traumatic stress disorder. This presentation will explore the complex challenges of quantifying an infant's pain and sedation, current practice and potential future avenues for investigation.

Neuropathic pain - what can Man's best friend teach us? - naturally occurring neuropathic pain conditions in dogs and cats

Dr Clare Rusbridge BVMS PhD DECVN MRCVS, Reader in Veterinary Neurology, School of Veterinary Medicine, Faculty of Health and Medical Sciences, Duke of Kent building, Guildford, Surrey, UK

As natural occurring models, dogs and cats present a valuable resource for understanding and managing neuropathic pain in humans. Unlike laboratory rodent models, dogs and cats are higher mammals exposed to similar environmental conditions as humans, for example variable diet, exercise and psychosocial stress. Much loved pets are expected to enjoy an active lifestyle with a life expectancy of 10 years or more. This talk will discuss the pathogenesis and treatment of common neuropathic pain and itch syndromes in animals including the inherited conditions Chiari malformation and syringomyelia in dogs and orofacial pain syndrome in cats.

The safety on the use of locals anestheticson the sirurgical treatment of inguinal hernia in outpatientafter, ten years of experience, 1300 operated patiences without complications

Surgery Professor (Professor Titular) Flavio Antonio de Sá Ribeiro, Resherche Coordenator and Surgeon, Hospital Federal de Bonsucesso, Ministerio da Saúde - Governo Federal, Rio de Janeiro, RJ, Brazil

The safety on the use of locals anesthetics (xilocaine and bupivacaine/ xilocaine and ropivacaine) on the sirurgical treatment of inguinal hernia in outpatient (after ten years of experience, 1300 operated patiences without complications).

Accommodation/vergence eye movements and neck/scapular area muscular activation: Gaze control with relevance for work related muskuloskeletal disorders

Dr Hans Richter, Ph.D., Centre for Musculoskeletal Research, Department of Occupational and Public Health Sciences, Gävle University, Sweden

Voluntary or reflexive accommodative/ vergence effort in response to oculomotor fatigue may, as an unwarranted consequence, cause a dysfunctional tonus increase and/or reduced load variation in the neck, scapular area muscles and upper back. The motor commands to the two effectors appears to be parallel, simultaneous and complementary, i.e. they produce different mechanical effects on different anatomical structures, effects that converge in obtaining the composite result of bringing the image to focus and to an optimal retinal location. Through this eye-neck/ scapular area functional linkage, sustained eye-lens accommodation at near can increase muscle activity levels and may therefore represent a risk factor for trapezius muscle myalgia.

The Role of Central Sensitisation in Knee Osteoarthritis: Improving the Understanding and Management of Pain

Dr. Anushka Soni, University of Oxford, Botnar Research Centre, Windmill Road, Oxford, UK

Involvement of patients with acute abdominal pain in pain management

Mrs. Helen Schultz, RN, MScN, PhD, University of Southern, Surgical Department, Sdr. Boulevard 29, 5000 Odense C, Denmark

How do patients with acute abdominal pain experience hospital arrival, admission, discharge and time after discharge? And how does involvement of the patients in pain management improve pain management and patient experience? These issues will be the focal point of the presentation.

Opioid Therapy for Chronic Noncancer Pain: International Perspectives

Dr Michael E. Schatman, Foundation for Ethics in Pain Care, Bellevue, WA, United States

The United States' opioid crisis has become a topic of concern and fear, not only in the US, but in other industrialized nations in which chronic noncancer pain management remains a challenge. This lecture will address the mistakes made in the United States, and strategies for seeking in rational balance that will apply to other nations that wrestle with the development of chronic pain management within the context of limited resources. Ethical issues, as well as issues of evidence-basis and iatrogeneses will be covered.

Pain is what the patient says it is: But what if they cannot say. Pain assessment in adults with dementia

Professor Patricia Schofield, Anglia Ruskin University, UK

I will be discussing the issues which face health professionals in identifying pain in the older population, particularly when communication problems exist. A review of the latest research in this area will be presented.

Phantom Limb Pain: Theory and Therapies.

Professor Jack Tsao, MD, DPhil, Uniformed Services University of the Health Sciences, Bethesda, MD, USA

Following major limb amputation up to 95% of persons experience phantom limb pain, the sensation that the amputated limb is still present and experiencing pain, such as being frozen and immobile, electric shock-like sensations, or burning, for example. This talk will review current theories of why phantom limb pain arises, discuss the use of mirror therapy to treat phantom limb pain, and explore the physiological basis of pain relief.

Pain in Cerebral Palsy

Associate Professor Kristina Tedroff MD, PhD, Pediatric neurologist, Q202, Neuropediatric unit, Astrid Lindgren Children's Hospital, Department of Women's and Children's Health, Karolinska Institutet, S-171 76 Stockholm, Sweden

Cerebral palsy(CP) with a prevalence of 2-3/1000 live births, is the most common neurological condition affecting motor development in children in the industrialized world. In recent years has there been an increased awareness of co-morbidities existing in CP. One of the more common co-morbidities is pain with a prevalence ranging from 35-80%, likely increasing with increasing age. However, only few studies have evaluated, prevalence, pain intensity or pain interference and very little is known about pain management in children or adults with CP. This talk aims to give a comprehensive background to what is known in this topic and where future research is needed.

Vulvar Pain: Anatomic and Recent Pathophysiologic Considerations

Dr Gary Ventolini, MD , FACOG, FAAFP, Regional Dean and Professor, The Jan and Ted Roden Endowed Chair for the Regional Dean, School of Medicine at Texas Tech University Health Sciences Center, Odessa, TX, USA

Vulvar pain syndrome or vulvodynia is a common multifactorial, heterogeneous, and chronic gynecological disorder with an estimated prevalence of up to 16%. This disorder seriously impacts the quality of life of women in several ways. The etiology of this condition is complex and remains elusive and requires an extensive differential diagnosis. A standard therapeutic approach for the management of vulvar pain is still under investigation and must be multidisciplinary. This review outlines the anatomic and pathophysiologic aspects of vulvar pain.

Nasal oxytocin blocks trigeminal CGRP release and is therapeutic for chronic migraine headache

Dr. David C. Yeomans, Director of Pain Research, Faculty of Anesthesia, Stanford University School of Medicine, Stanford, CA, US

Day 1:

Oral Presentation Abstracts

ACUTE PAIN AUDIT: A LOOK AT TRAINING, MANAGEMENT AND PATIENT SATISFACTION

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Introduction: Pain is the most common reason people attend the emergency department¹, however, current evidence suggests that pain is poorly managed in hospitals². Therefore it is no surprise that a large proportion of patient complaints are related to inadequate pain management and hence having a detrimental impact on patient satisfaction³. Despite the introduction of acute pain curriculum for medical schools, as outlined by the International Association for the Study of Pain (IASP), a large body of evidence suggests that poor pain management is linked to inadequate undergraduate/graduate acute pain training⁴. This evidence has since been correlated with junior doctors having a general lack of awareness of local guidelines⁵ and lack of confidence in managing acute pain^{6,7}. This raises the question as to whether we are doing enough to optimise pain control for our patients and meet the standards as outlined by the Royal College of Anaesthetists (RCOA)⁸. The current audit aims to use these standards to evaluate three key areas: acute pain training, management and patient satisfaction.

Methodology: We designed questionnaires to collect data on patient satisfaction and acute pain training for foundation doctors and nurses, working at Burton district general hospital (DGH). With regards to acute pain management we used the electronic database to identify a number of variables including; number of patients who reported being in pain during their admission, documentation of pain and time taken to analgesia. These results were gathered from both medical and surgical wards.

Results: 85% of foundation doctors that responded to this survey had not received formal acute pain training either prior to or since starting their FY1/2 post. Although 55% were aware of how to seek specialist help, the majority (60%) were not aware of local guidelines. These results were echoed amongst the nursing staff where 64% had not received any acute pain training in the last 12 months. Overall, 47% of patients reported experiencing pain at some point during their admission. Although pain was documented in 100% of cases, time taken to receive analgesia remains questionable with only 60% receiving pain relief within 15mins. Despite this, 80% of patients remained satisfied with their pain control. Patient reports of why pain was not well controlled included: 'too much attention on diagnosis' 'no attention to environmental factors' and 'length of time taken to receive analgesia'.

Conclusion: At our DGH we are currently failing to meet standards as outlined by the RCoA with regards to acute pain training, management and patient satisfaction. Previous research in this area suggests that this problem extends to other hospitals.

Future: We suggest introducing acute pain training in the induction week for foundation doctors at our DGH. Online modules in acute pain should be made readily available to both doctors and nurses. Our final suggestion would be an acute pain algorithm made available to all wards.

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NEUROPHYSIOLOGICAL AND COGNITIVE BEHAVIORAL PAIN PATHWAYS IN MIGRAINE

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Introduction:

The key role of neurophysiological mechanisms in the pathogenesis of migraine in the last two decades has been clearly demonstrated by a constantly growing body of evidence (1). A lack of habituation of evoked potentials to varied sensorial stimulations has been defined as a trait marker of migraineous brain (2). Likewise, a specific cognitive behavior, namely analytic information processing style, has been linked, per se, both to migraine and to deficit of habituation (3,4) suggesting a common neurophysiological underlying mechanism leading to cortical hyperexcitability (4). Analytic information processing style is characterized by the habit of continually evaluating and processing stimuli dealing with details and fine points (5). It has been linked to a continuous arousal state and increased generalized gamma brain activity (6).

Aim:

Herein we present and discuss the results of our recent works (3,4,7) and further research regarding the relationship between analytic/global cognitive style and primary headaches, aiming to compare the information processing styles of migraine patients with a cluster headache group and healthy subjects.

Methods:

We investigated the cognitive behavior style of 30 migraine without aura patients matched with a group of cluster headache sufferers and healthy controls, evaluating analytic/global and visual/auditory dimensions of information processing styles, utilizing cognitive behavioral tests (Sternberg and Amos tests) (5,8).

Results:

The results confirmed our previous findings and highlighted a predominant visual analytic style in migraine respect to the other groups (Anova $p < 0,0001$).

Conclusion:

These findings have shown a clear relationship between visual analytic style of information processing and migraine without aura.

Significance:

As cognitive style is malleable and can be changed and taught with appropriate cognitive training (4), a potential clinical significance can be speculated. We believe that a multidisciplinary approach to migraine research is needed and should include the study of the information processing style and its neurophysiological and neurobiological correlates.

Key Words

Migraine, Analytic information processing, Habituation, Cluster Headache, Sternberg test

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THE USE OF LOCAL ANAESTHETIC FOR INVASIVE PROCEDURES: A REVIEW OF THE LITERATURE AND IMPLICATIONS FOR CURRENT PRACTICE.

Authors: Rhiannon Worrall, *Matthew Sutcliffe*, Kimon Bizos

Introduction: Arterial Blood Gas (ABG) sampling and peripheral venous cannulations are two of the most common procedures conducted within the acute medical setting. It is well documented in the literature that both these procedures are commonly associated with high levels of patient pain 1-4. Despite this, research suggests that the majority of junior doctors do not routinely use or offer local anaesthetic (LA) for either of these procedures⁵. Furthermore, the use of LA is not routinely taught in medical schools as part of the curriculum for these procedures. Worryingly these findings challenge current GMC principles surrounding good patient care, specifically the principle 'you must do no harm'. Consequently ethical questions are raised regarding current practice for ABG and peripheral IV cannulation. This review therefore aims to examine the available literature surrounding the use of LA, prior to the above named procedures, as a method of reducing pain and discomfort experienced by patients.

Method: A variety of databases including EMBASE, MEDLINE AND AMED were systematically searched. The search was limited to English text articles published within the last 10 years. Inclusion criteria referred to any study examining the use of LA prior to IV cannulation and ABG, with pain scores as either their primary or secondary outcome measure. Duplicate findings or studies not meeting these criteria were excluded.

Results: A total of 96 studies were identified. 34 of these studies were included in the current review. The vast majority of studies were randomised controlled trials, with the addition of two systematic reviews and one meta-analysis. In general, there is overwhelming evidence which suggests that LA prior to ABG or IV cannulation is associated with a significant reduction in pain scores. Furthermore the use of LA is also associated with minimal side effects. These findings have been duplicated in multiple randomised controlled trials. Inconsistencies between studies in the type of LA used, method of delivery, needle gage, and site of insertion makes it difficult to extrapolate the optimal method.

Conclusion: These findings strongly suggest that the use of LA significantly reduces patient pain and distress for both ABG and IV cannulation. Based on these findings, we believe it would be beneficial to patient care and more in line with GMC principles, to incorporate the consideration of LA for invasive procedures. However, more comparative research needs to be done in order to identify the optimal method of incorporating LA into current practice. In light of the current findings, not offering LA to patients for these procedures could be considered unethical practice.

Day 2:

Oral Presentation Abstracts

CHILDREN'S PAIN MANAGEMENT: A STANDARDISED PRACTICE BUT WHERE IS THE EVIDENCE? A CASE STUDY OF PRN ANALGESIC PRESCRIPTION USE IN AN IRISH PAEDIATRIC TERTIARY HOSPITAL

Many factors contribute to ineffective paediatric pain management, namely: knowledge deficits, negative attitudes, the non-use of pain assessment tools and, more recently identified, the mis-use of 'PRN' analgesic prescriptions (Dihle et al. 2006; Johnson et al. 2007; Twycross 2007). The abbreviation 'PRN' stands for the Latin term 'Pro Re Nata', meaning 'as required' or 'as needed', thus analgesia prescribed using a 'PRN' prescription may be administered to the patient as the patient needs it. PRN analgesic prescriptions are the most commonly used prescription type to treat pain (Gordon et al. 2005; Stein-Parbury 2008), yet little research has been conducted into this treatment intervention. This study examines the factors that influence the use of 'PRN' analgesic prescriptions within an acute paediatric healthcare environment.

Bounded in time and place, an embedded case study design (Stake 1995) is used to explore the use of 'PRN' analgesic prescriptions within a real-life paediatric context (Yin 2003). Multiple data collection methods are used, namely: interviews, documentation analysis, informal conversations and participant observations, to collect contextually rich data. A process of triangulation, during the data analysis, elicited divergent and convergent issues, culminating in the emergence of the following three overarching themes: 'let's be predictable and do as we have always done', 'I know best despite what the evidence says' and 'adopting the local rules to fit-in and get-on'.

Key findings indicate that paediatric pain management continues to be a problematic area. This study identifies the restricted and routinised approaches to pain management that both medical and nursing professionals adopt when managing pain in children. Whilst such limited and routinised approaches provide a level of certainty they negate against the individualised and holistic pain management interventions advocated by International pain groups such as the International Association for the Study of Pain. The over use of and over reliance on subjective knowledge/information in the pain management process was also identified amongst both professional groups. The use of subjective knowledge restricted the volume of information being used to assess and manage the children's pain, thus provided a degree of certainty to pain management interventions. Social processes within the study setting were also identified as prominent influencing factors impacting pain management processes within the study setting. Traditional modes of authority coupled with pressures to conform were resulting in the stagnation of critical thinking and innovation amongst staff in all aspects of pain management.

Presenter: *Joy Conlon*

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Dublin 9

ATENOLOL REDUCES LEISHMANIA MAJOR –INDUCED HYPERALGESIA AND TNF-ALPHA WITHOUT AFFECTING IL-1BETA OR KERATINOCYTE DERIVED CHEMOKINE (KC)

Infection with a high dose of the intracellular parasitic protozoan *L. major* induces a sustained hyperalgesia in susceptible BALB/c mice accompanied by up-regulation of the pro-inflammatory cytokines IL-1 and IL-6. Interleukin-13 (IL-13) has been shown to reduce this hyperalgesia (despite increased levels of IL-6) and the levels of IL-1 during and after the treatment period. These findings favor the cytokine cascade leading to the production of sympathetic amines (involving TNF- α and KC) over prostaglandins (involving IL-1 and IL-6) as the final mediators of hyperalgesia. The aim of this study was to investigate the effect of daily treatment with the β -blockers atenolol on *L. major*-induced inflammation in mice with respect to hyperalgesia as well as the levels of TNF- α and KC (the analogue of IL-8 in mice). Our data demonstrates that atenolol is able to reduce the *L. major* induced hyperalgesia, which does not seem to involve a direct role for neither IL-1 nor KC. Moreover, our results show that TNF- may play a pivotal and direct role in sensitizing the peripheral nerve endings (nociceptors) since its level was reduced during the period of atenolol treatment, which correlates well with the reduction of the observed peripheral, but not central, hyperalgesia. These findings contribute to a better understanding of the

cytokine cascade leading to hyperalgesia and may lead to the development of new and more efficient medications for many types of pain.

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COMPARISON OF DURATION OF POSTOPERATIVE ANALGESIA IN COMBINED FEMORAL SCIATIC NERVE BLOCK USING CLONIDINE AND DEXMEDETOMIDINE AS AN ADJUVANT TO BUPIVACAINE

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INTRODUCTION:

Pain as well as pain relief, a psycho-neural experience is difficult to quantify, more so in pediatric age group. Hence the need for effective postoperative pain relief in children cannot be overemphasized. If not adequately relieved, postoperative pain activates autonomic stress responses which increase postoperative morbidity¹. Since its introduction clonidine (α_2 receptor agonist) has been extensively used world over as an adjuvant to local anesthetics in peripheral nerve blocks². Dexmedetomidine, a more recently introduced α_2 receptor agonist with higher affinity for the receptors is expected to be as good as or even better than clonidine³. Although promising, its role as an adjuvant to local anesthetic has not yet been fully investigated. As yet there is no consensus even on the ideal dose to be used, and very few comparative studies are available in literature. The present study aims at comparing the effect of clonidine with dexmedetomidine in combined femoral and sciatic nerve block, for postoperative analgesia in children undergoing below knee surgery.

MATERIALS AND METHODS:

80 ASA I & II children, 1-8 years scheduled for elective below knee surgery were randomly divided into 2 equal groups to receive $1\mu\text{g}/\text{kg}$ of clonidine or $0.5\mu\text{g}/\text{kg}$ of dexmedetomidine in $1\text{ml}/\text{kg}$ of 0.25% bupivacaine for combined femoral sciatic nerve block, under general anaesthesia. Hemodynamics, postoperative analgesia, sedation scores and any untoward complication over 24 hours of surgery were recorded. The data was subjected to statistical analysis using SPSS version 19 technique.

RESULTS:

Postoperative analgesia in dexmedetomidine group (16.59 ± 4.84 hours) was significantly higher than clonidine group (11.70 ± 2.14 hours). No side effects were noted in either group.

CONCLUSION:

Dexmedetomidine when added to bupivacaine in peripheral nerve block resulted in longer duration of postoperative analgesia as compared to clonidine without any clinically relevant side effects.

FUTURE:

Both Clonidine & Dexmedetomidine have promising future as an adjuvant to local anesthetics in nerve blocks. Dexmedetomidine however is better than clonidine in terms of longer postoperative analgesia.

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Day 3:

Oral Presentation Abstracts

Oral presentations will be added after the submission deadline

POSTOPERATIVE PAIN: MANAGEMENT AND DOCUMENTATION BY IRANIAN NURSES

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Abstract

Background: Pain is one of the most common symptoms experienced by patients after surgeries. Inadequate postoperative pain management is an international problem and the need to improve its management is well documented.

Objective: The aim of the study was to assess nursing reports related to the patients' pain intensity and quality, concomitant symptoms, use of scales in pain assessment, and compliance with the national guideline after surgery.

Design: This study was a retrospective cohort. Three hundred and eighty five medical records were analyzed using a pain management check list.

Participants and setting: Samples were nurse records of patients in general, orthopedic, ENT and urology wards who had elective surgery with no history of diabetes and cancer according to the hospital statics and documentation database department in Imam Khomani Hospital of Jiroft from April to September 2012.

Result: Only 6% of the patients' pain records included pain intensity which was not measured with standard scales. Parenteral analgesic was administered in 310 cases and more than half of all injections were opioid analgesic which is in contrast to the guidelines of the Iranian Ministry of Health. Pain assessment was higher in women and by nurses with more than 15 years of working experience. There was a negative relationship between the time of pain expression and reporting concomitant symptoms, meaning that reports were lower at night shifts.

Conclusion: to conclude, the patients' pain was not assessed properly in terms of intensity, quality, and associated symptoms. Therefore, training and motivating nurses is very important in this context and should be incorporated in nurses' academic and continuous educational courses.

Keyword: nursing, pain, patient records, postoperative

HOW DO HEALTHCARE PROFESSIONALS PERCEIVE THE CONCEPT OF PAIN? A SYSTEMATIC REVIEW

Aim: The manner by which healthcare professionals perceive the concept of pain has been identified as a influencing factor in the chosen pain assessment and management interventions. This review aimed to synthesise all relevant literature pertaining to healthcare professionals' perceptions of the concept of pain and how it influences treatment.

Method: Systematic reviews and meta-analysis are a key element of evidence based healthcare. To ensure a comprehensive review was conducted the following five key steps were undertaken: the research question was framed, relevant publications were identified (inclusive of quantitative and qualitative study designs), study quality was assessed by two reviewers, findings were interpreted and synthesised by two researchers.

Conclusions and relevance.

The review focuses on healthcare professionals' perceptions of pain and how such perceptions impact on the care being provided to patients in pain. Personal perceptions of key health related concepts, such as pain, very often have been moulded by life experiences prior to an individual entering a medical or nursing degree programme. Such perceptions are so embedded we are not aware of them. Thus developing a degree of self-awareness is vital to gaining an appreciation for ones own perceptions and how such perceptions influence actions in clinical environments. Whilst numerous studies have explored various aspects of pain and pain management, there has not, as yet been a systematic review that has specifically focused on healthcare professionals personal perceptions of the concept of pain. Thus this review addresses an important gap in our knowledge and will contribute to the evidence based literature on pain

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Poster Presentation Abstracts

THE IMPACT OF HYPNOSIS ON THE AFFECTIVE DIMENSION OF PAIN: A LITERATURE REVIEW AND META-ANALYSIS

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Interest in hypnotic treatment for pain conditions seems to be on the rise and recent evidence shows that hypnotic analgesia interventions result in substantial cost savings following medical procedures (Lang et al., 2000). Experimental studies suggest that hypnosis can differentially modulate the sensory or affective dimension of pain depending on the nature of the suggestions (Rainville, Carrier, Hofbauer, Bushnell & Duncan, 1999). However, there have been few systematic approaches to quantifying this effect across literature and less attention has been given to the specific procedures and suggestions used in hypnotic treatment in research. The present literature review and meta-analysis evaluates the magnitude of the effect of hypnosis on the affective component of pain. It also presents the scientific background and the usefulness of a hypnotic approach that uses emotion specific wording that would elicit prior positive experience to intervene at both the sensory and affective dimensions of pain. Such an approach would enable patients who cannot effectively dissociate from the sensation of pain, to diminish their affective response. The paper concludes with a discussion of the implications of the findings for future hypnosis research and for the clinical applications of hypnotic analgesia and it also emphasizes the utilization of positive state dependent learning (Rossi, 1986) advocated by Milton Erickson who advised practitioners to “discover their patterns of happiness” (Parsons-Fein, 2005).

PERIPHERAL NERVE BLOCKS AND THE FRACTURED NECK OF FEMUR (NOF): A PAIN IN THE NOF?

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Background and Aims

Patients with a fractured NOF represent one of the most challenging groups, in view of their decline in physiological status and co-morbid disease burden. They can suffer from significant pain and emotional distress, making the provision of sufficient analgesia throughout the hospital journey imperative. This necessitates input from experienced practitioners to ensure optimal pain management, whilst minimising the adverse effects of drugs, such as opioids. Consequently, the use of peripheral nerve blocks (PNB) has become increasingly popular as they can eliminate the need for additional analgesia for significant periods of time.

This audit examines current practice at a busy district general hospital serving North London and Essex, and its adherence to the Anaesthesia Sprint Audit of Practice (2014) standards:

1. Peri-operative PNB should be offered to all patients
2. Spinal/epidural anaesthesia should be considered for all patients
3. A consultant anaesthetist, or an individual with level experience should anaesthetise all patients

Methods

58 case-notes were reviewed retrospectively to ascertain modes of peri-operative analgesia delivered to patients who had NOF surgery over a 3-week period in May - June 2014. Analgesic requirements, including opioid usage, were noted for each patient pre- and post-operatively. The use of PNB in the emergency department and in the operating theatres was also recorded, as was the mode of anaesthesia (i.e. general, neuroaxial block) and grade of anaesthetist.

Results

We found that no patients were offered a PNB pre-operatively; instead they were given a mixture of analgesics including strong opioids such as morphine and non-steroidal agents (NSAIDs). 10 patients (17%) received a PNB in theatres, 5 of which did not require strong opioids in the post-operative period.

93% of patients were anaesthetised by a consultant, or someone with similar experience (i.e. associate specialist), with an anaesthetic trainee present in only 31% of cases.

60% of patients received regional anaesthesia rather than general anaesthesia. Of note, 97% had no documented contraindications to a neuroaxial block.

Conclusions

The insufficient uptake of PNBs is most likely due to the clinician's inadequate experience with performing this procedure. This audit has highlighted a unique learning opportunity within the hospital. The results reveal that senior anaesthetists run the majority of trauma theatre lists, but the absence of regular junior trainee anaesthetists denies them the chance to learn this key skill in a supported environment. Consequently, use of opioids in this patient group remains high, thus increasing the risk of side effects. A movement has been made within Queens Hospital to ensure that core anaesthetic trainees have a completed Certificate of Competence for performing fascia-iliaca blocks under ultrasound guidance, by the end of their trauma module.

The results also demonstrate that many patients receive general anaesthesia despite having no documented contraindications to regional anaesthetic techniques, putting them at greater risk of post-operative confusion and higher analgesic requirements.

In conclusion, by ensuring that junior anaesthetists receive the appropriate training to safely administer fascia-iliaca blocks, there is the potential to revolutionise the pain services offered to fractured NOF patients in pre-operatively.

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TARGETING CHRONIC PAIN PERCEPTION, CORTISOL LEVEL, AND SEX DIFFERENCES IN DYSFUNCTIONS OF THE TEMPOROMANDIBULAR JOINT

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Objective: To investigate the relationship between the symptomatology of temporomandibular joint disorder (TMD), neuropsychological variables, and chronic orofacial pain, with an aim towards analysing their impact on cortisol levels in TMD patients of both genders.

Methods: A total of 39 patients with TMD symptomatology and 33 individuals with no TMD symptomatology (controls), of both genders and aged 17-39 years, participated in this study. TMD symptomatology was investigated using an adapted version of the Helkimo anamnestic index and the Research Diagnostic Criteria for Temporomandibular Disorders – Axis II. Patients were classified in terms of the severity of TMD and the Graded Chronic Pain Scale (GCPS scores). GCPS scores provided the profiles of chronic pain-related disability of each patient. Unstimulated saliva was collected between 9 and 10 am for the evaluation of salivary cortisol by ELISA testing. Statistical analyses included the Chi-squared test of independence, the Student t test, Mann-Whitney and Bonferroni tests, one-way ANOVA, and the Spearman correlation at a 5% significance level. A Human Research Ethics Committee (Protocol #633/11; Brazil) approved this study.

Results: Although most symptoms evaluated have been found to be associated with TMD severity (odds ratio, $P < 0.05$), only five of them were found to be associated with GCPS scores, which were likely related to TMJ pain, sleep disturbance and the duration of pain (odds ratio, $P < 0.05$). No association between the gender and TMD

symptomatology was found ($P > 0.05$). When both TMD and the control group were compared, no difference in salivary cortisol levels was found, independently of the gender ($P > 0.05$). There was also no difference in salivary cortisol means, independently of the gender, when each sign/symptom was taken into account ($P > 0.05$). Cortisol levels were not found to be correlated with both TMD severity and GCPS scores ($P > 0.05$). Nevertheless, GCPS scores and TMD severity of TMD were found to be correlated ($P < 0.05$). In addition, several neuropsychological signs/symptoms, including bruxism and sleep disturbance, showed positive correlations between each other ($P < 0.05$, $P < 0.01$).

Conclusion: In patients with TMD symptomatology, chronic pain perception may be upregulated by physical or neuropsychological symptoms, including sleep disturbance-related mechanisms, independently of the gender or salivary cortisol changes.

ANALYSIS OF CONTRAST FLOW OF EPIDURAL SPACE IN RETRODISCAL EPIDURAL STEROID INJECTIONS.

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Background/Objectives

Lumbar epidural steroid injection is often used to treat patients with spinal stenosis and herniated intervertebral disc. Transforaminal epidural steroid injection (TFESI) is known for delivering at the exact location of nerve root compression by herniated intervertebral disc causing neuropathy. TFESI are largely categorized according to two differing methods, based on the needle entry: subpedicular approach and retrodiscal approach. We evaluated the difference contrast flow between subpedicular approach and retrodiscal approach, retrospectively.

Methods

171 patients who received TFESI at L4/5 level were included in this study. Patients were divided into two groups by route of TFESI; subpedicular approach group ($n = 137$) and retrodiscal approach group ($n = 34$). Contrast flow to the anterior epidural space (primary outcome, grade 1–3) was analyzed in the fluoroscopic image of the electronic medical chart. Grade 1 was defined as “Contrast dye flow to paravertebral space and part of nerve root”. Grade 2 was defined as “Only contrast flow to nerve root and no spread to anterior epidural space”. Grade 3 was defined as “Contrast flow to anterior epidural space at L4/5 intervertebral disc”.

Results

There were no significant difference in the demographic and clinical characteristics between two groups. Contrast flow to the anterior epidural space in the retrodiscal approach group was significantly greater than that in the subpedicular approach group ($P < 0.001$). In 80 patients (58.4%, grade 2) of subpedicular approach group, showed only contrast flow to L5 nerve root. In 21 patients (61.8 %, grade 3) of retrodiscal approach group, contrast flow was shown into anterior epidural space at L4/5 level.

Conclusions

This study reveals that retrodiscal approach for epidural injection was significantly successful by observing the contrast flow. Retrodiscal approach can be effectively performed to inject at the exact site of intervertebral injection and its nerve root compared to subpedicular approach.

PRACTICAL INCORPORATION OF PSYCHOSOCIAL ASSESSMENT IN SPINE-RELATED PAIN DISORDERS

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Introduction: Spine-related pain disorders (SRDs), low back and neck pain, are the first and fourth leading causes of disability in the world, respectively, with enormous global economic impact. Increasing expenditures have not resulted in improved clinical outcomes. Reliance upon the biomedical model and fractured specialty-based care have contributed to a dysfunctional management paradigm. There is considerable evidence that psychosocial assessment tools that aide in diagnosis and treatment planning are valuable, but the length and cumbersome nature of administering and scoring such tools are barriers to widespread implementation. Our objective was to identify and implement an integrative, evidence-informed clinical process for managing SRDs which incorporated an efficient and practical assessment of psychosocial risk factors.

Methods: We performed a qualitative review of relevant literature utilizing the electronic databases MEDLINE, Academic Search Premier, AltHealth Watch, AMED and SPORTDiscus. Relevant articles were assessed to identify psychosocial measures that were found to improve SRD patient outcomes or otherwise affect quality and/or value of patient care. We also visited hospitals and clinics employing emerging models of care for SRDs and interviewed healthcare providers. We incorporated the evidence-based themes into an educational framework suitable for differently licensed practitioners to apply a standardized spine care pathway incorporating a practical psychosocial assessment tool based on the evidence we gathered.

Results: Our review of literature and pragmatic investigation suggest that models of care for SRDs that consider psychosocial factors, such as fear, catastrophizing, passive coping, kinesiophobia, poor self-efficacy and depression, offer the greatest potential for improved clinical outcomes. Our investigation further finds that it is clinically impractical to administer multiple assessment questionnaires to address these factors, however, a short and relatively easy to score tool is available that considers these issues, the Keele Stratified Targeted Treatment Screening Tool (STarT Back Screening Tool or SBST).

Conclusion: Based on the results of our inquiry, we have implemented a clinical model for care of SRDs at our campus-based health center with a concurrent two year healthcare practitioner residency program. The clinical model is designed to incorporate the psychosocial needs of patients concurrently with evidence-informed physical evaluation and management for relationship-centered care. We have entered into a collaborative agreement with a large regional medical claims payer and medical provider group to conduct a demonstration project of this model.

NEURAL MOBILIZATION ATTENUATES MECHANICAL ALLODYNIA IN RATS WITH PAINFUL DIABETIC NEUROPATHY

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Abstract:

Background

Painful diabetic neuropathy (PDN) is one major source of chronic pain among patients with diabetes. PDN is caused by microvascular insufficiency and ensued ischemic nerve damage in diabetes. Typical manifestations include mechanical allodynia, burning and tingling sensation and possibly thermal hypersensitivity, sensory disorders like these severely affect the quality of life of patients with PDN.

Neural mobilization is a physio-therapy technique widely used in clinics to manage neuropathic pain, especially neuropathic pain related to ischemic nerve injury, in this study we use STZ-induced diabetic rats to evaluate the treatment effect of neural mobilization on mechanical allodynia caused by PDN.

Method

PDN model was set using mature male Sprague-Dawley rats weighing 300~320g, after recording baseline behavior data, rats will be fast for 72 hours before injecting Streptozotocin (STZ, 65mg/ml/kg) to induce type I diabetes. Vehicle control group undergone the same procedure, but was inject with saline instead of STZ. Confirmation of diabetes takes place at day 3 after injection, rats with fasting blood glucose level over 300mg/dl were viewed as rats with diabetes.

Behavior test for mechanical pain sensitivity were tested using von Frey test, by applying filament (intensity: 0.2g to 26g) on the hind paw of the rat and determine the response threshold. Mechanical hypersensitivity (or mechanical allodynia) was viewed as an index of PDN. Rats with significantly lower response threshold on day 10 after injection compared with baseline data were viewed as rats with PDN.

After confirmation of PDN, rats were randomly allocated into STZ-allodynia group and treatment group. Rats in STZ-allodynia group do not receive any intervention while rats of treatment group receive neural mobilization on the right sciatic nerve for 10 minutes per day, 5 days per week for 3 weeks starting on day 10 after injection.

Statistical analysis was conducted using two-way repeated measurement ANOVA with SPSS 17.0.

Result

Rats in the STZ-allodynia group had significantly lower response threshold compared to Vehicle control rats on both sides. ($P < 0.0001$)

For the rats in the treatment group, the response threshold on the right (treatment) side was significantly higher than the STZ-allodynia group ($P = 0.008$), but there was no significant difference between the response threshold on the left (contralateral) side of rats in STZ-allodynia and rats in the treatment group ($P = 0.478$).

Conclusion

Neural mobilization significantly decreases the mechanical hypersensitivity in the rats with painful diabetic neuropathy, but the treatment effect was limited on the treatment side.

INFLUENCE OF THE TYPE OF OCCUPATION ON THE LUMBAR SPINE DEGENERATION IN MEN

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Physical demands result in degenerative changes of the spine. The type of occupation is associated with physical demands of workers. However, it has not been studied whether degenerative changes of spine are affected by the type of occupation. The aim of this study was to investigate the influence of the type of occupation on the lumbar spine degeneration in men. We conducted a cross-sectional study using representative samples from the Sixth Korea National Health and Nutrition Examination Survey, which was conducted in 2013. Men with ≥ 50 years of age were categorized into 3 occupational groups: white-collar workers (group 1), workers with moderate physical demand (group 2), and workers with heavy physical demand (group 3). The degenerated lumbar spine was defined according to Kellgren Lawrence grade 0=normal, 1=definite osteophyte, 2=intervertebral disc space narrowing, bone sclerosis, large osteophyte on plain radiograph. Multivariate logistic regression analysis was performed to examine the relationship between occupational groups and degenerative changes of lumbar spine (model 1), chronic low back pain (model 2) and painful degenerative spine (model 3). Regression models were adjusted by age, education, obesity, and level of physical activities (PA). The types of occupations were associated with an increased risk of degenerative changes of lumbar spine shown on simple radiographs. The risks for developing lumbar spine degeneration increased in group 2 (OR 3.51) and group 3 (OR 9.03). Chronic low back pain and painful degenerative spine did not show any significant association with occupational groups. These results suggest that degenerative changes of lumbar spine are affected by the type of occupation in men aged ≥ 50 years. However, low back pain and painful degenerative spine did not show significant correlation with the type of occupation.

DIAGNOSTIC PERFORMANCE OF VARICELLA ZOSTER IGM ANTIBODY – HOW LONG IS IT POSITIVE?

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Background

Herpes zoster (HZ) is an infectious disease resulting from reactivation of latent varicella zoster virus (VZV) and can progress to postherpetic neuralgia (PHN). In most cases, HZ can be diagnosed by its typical symptoms and signs; however, a laboratory test is required to confirm the VZV infection in a subset of cases, especially when a skin lesion is not apparent. The serological test for the VZV IgM antibody is a simple and cost-effective method; however, the change in the VZV IgM positive rate according to the time course has not been investigated. The purpose of this study was to evaluate the positive rate of VZV IgM results after the onset of HZ.

Methods

After obtaining the serum of patients with typical HZ skin lesions, the VZV IgM antibody was examined using enzyme immune-assay methods. The rate of positive results according to the time course and the correlation between the antibody titer and time since the onset of HZ were analyzed.

Results

A total of 62 patients were included in this study. VZV IgM antibody was positive only in 23 patients (37%) after HZ infection. The median duration of the positive VZV IgM antibody was 8 (95% confidence interval 9.6–16.9) weeks.

Conclusion

These findings suggest that serological diagnosis of IgM antibody to VZV is only useful within 8 weeks in the patients with HZ.

THE EFFICACY OF BOTULINUM TOXIN A(BTX-A) IN MANAGEMENT OF PLANTAR FASCIITIS FOCUS ON DOSE AND INJECTION SITE A REVIEW OF CLINICAL TRIAL.

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Introduction

Plantar fasciitis is one of the most common cause of heel pain which often becomes chronic. Several clinical trials supports botulinum toxin is effective for chronic or refractory pain resistant to conventional treatment such as rest, stretching, orthosis, physiotherapy, medication, intralesional steroid injections or extracorporeal shock wave therapy. To determine proper dose and injection site of botulinum toxin and recommend for clinical application , we reviewed clinical studies or case reports.

Methods and results

We included studies which show the efficacy of botulinum toxin injection in management of plantar fasctiitis.

INJECTION DOSE and SITES

Injection dose was not depend on patients, depends on practitioner and differed in each studies.

Injection site was also differed in each studies.

- (1) In 3 studies; 40 units in most tender point of the heel and 30 units in most tender point of foot arch, total 70 units
- (2) In 1 studies; 50 units in calcaneal tuberosity with ultrasonographic guidance
- (3) In 1 studies; 200 units(Dysport ®) in calcaneal tuberosity
- (4) In 1 studies; 100 units in medial, 100 units in lateral calf muscles at the site of greatest thickness of each calf and 50 units in soleus, total 250 units

OUTCOME MEASURES

To evaluate efficacy of injection, several measurement scales were used; Visual Analogue Scale(VAS), Pressure Pain Threshold (PPT), Range of Motion(ROM) of ankle, The Maryland Foot Score, American Orthopedic Foot and Ankle Society (AOFAS), Foot and Ankle Disability Index (FADI), Foot Health Square Questionnaire and Ultrasonography for thickness of plantar fasciitis

SIDE EFEECTS

It is minimally invasive and not reported of severe adverse effects.

Conclusion

Botulinum toxin type A is efficient in pain and function of chronic plantar fasciitis. Most studies support the effect of botulinum toxin in managing of plantar fasciitis, but injection dose or sites differed in each studies. There is a need for large clinical studies with comparing injection dose and site to determine proper dose and site. In consideration of cost-effectiveness, it is also necessary to suggest guideline for minimum effective dose.

PAIN PREVENTION WITH SYSTEMIC KETAMINE IN PEDIATRIC AMBULATORY SURGERY: A REVIEW OF LITERATURE

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Introduction: Prevention of postoperative pain remains challenging, especially in children. Opioids remain the cornerstone of pain treatment but are often avoided because of fear of respiratory depression. Since more and more pediatric surgery is being carried out in an outpatient setting good postoperative pain control with limited side-effects, such as respiratory depression, nausea and vomiting, is desirable. Ketamine is an NMDA-receptor antagonist with analgesic and antihyperalgesic properties. Administered as a single-shot it has a short term effect. Studies showed that it decreases postoperative pain and opioid requirement in adults but the evidence in children is less clear. The aim of this review was to perform a literature search on the use of systemic ketamine in children undergoing ambulatory surgery.

Methods: PubMed database was searched for studies that focus on the use of systemic ketamine in children for outpatient procedures.

Results: Numerous studies were performed using systemic ketamine in outpatient children undergoing tonsillectomy. Tonsillectomy is the most common ear-nose-throat procedure in children and associated with significant postoperative pain. Compared with opioids ketamine causes no respiratory depression and less nausea and vomiting. When administered in low dose (0.15 - 0.5mg/kg) ketamine has less adverse effects such as increased salivation, agitation, hallucinations compared to the anesthetic dose. A meta-analysis about the efficacy of ketamine for pain after tonsillectomy by Cho et al showed a decreased need for analgesics in the ketamine group versus control group and a similar need compared to the opioid group. Only very few studies looked into the use of ketamine in other types of surgery. A large meta-analysis by Dahmani et al also included other types of surgery besides tonsillectomy. They found that the administration of ketamine was associated with a decreased postoperative pain intensity and non-opioid analgesic requirement. However there was no postoperative opioid-sparing effect of ketamine.

Conclusion: Systemic administration of low dose ketamine has been proven effective for preventing postoperative pain in children undergoing tonsillectomy. However single-shot administration has only a short term effect and no meta-analysis has been performed yet about co-administration with opioids or about continuous infusion of ketamine. Also, further studies are needed on the use of ketamine for other types of surgery in an outpatient setting.

LATERALITY OF PAIN IN MIGRAINE WITHOUT AURA AND COGNITIVE BEHAVIORAL CORRELATES

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Introduction

Migraine is the most prevalent neurological disorder in the general population, with a lifetime incidence of 43% in women and 18% in men (1).

It is characterized by recurrent headache attacks that are often accompanied by photophobia and phonophobia (2). As of today, migraine etiology is still not completely understood (3); likewise, the causal factors of pain localization have not yet been clarified (4,5). Recently, a strong correlation between analytic cognitive style and both migraine and lack of habituation of evoked visual potentials has been demonstrated. (3,6).

Aim

We aimed to investigate whether the visual/ auditory perceptual dimension of analytic style may account for left/ right localization of pain in migraine without aura (MWOA).

Methods

150 patients seeking treatment for MWOA at the Policlinico Umberto I Headache Center, Department of Clinical Medicine, were enrolled in the study. Exclusion criteria were the presence of major psychiatric disorders and

diseases other than migraine. Using a scoring system, we categorized patients as having right or left unilateral pain localization. Utilizing cognitive behavioral tests (7,8), we investigated analytic /global and visual/auditory cognitive styles of patients and healthy controls

Results:

We found a significant relationship between visual analytic style and left-side unilateral MWOA patients. Moreover, we observed significantly higher auditory analytic scores in MWOA patients with frequent right side pain localization. Statistical analysis was performed by ANOVA test; p values < 0,005 were regarded as statistically significant.

Discussion and Conclusion

We highlighted a relationship between left /right side of pain and respectively, visual/auditory perceptual dimension scores of analytic style in MWOA patients for the first time, and discussed our results from an anatomo-functional perspective (9,10).

Significance

Our findings suggest a key role of information processing style in migraine that also seems to account for pain localization, warranting further investigation from neurophysiological, neurobiological and epigenetic perspectives.

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CXCL1 ACTIVATES TRPV1, A RECEPTOR INVOLVED IN INFLAMMATION AND PAIN

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Neuroinflammation has an important role in the pathogenesis of neuropathic and inflammatory pain. When a nerve is injured glial cells are releasing inflammatory mediators such as proinflammatory cytokines and chemokines that contribute to the development of neuropathic pain. CXCL1 (chemokine (C-X-C motif) ligand 1) is a chemokine that in rodents plays similar biological roles as interleukin-8 in humans and is associated with neutrophil chemotaxis and inflammation. TRPV1 (transient receptor potential vanilloid type 1), a non-selective cation channel with a preference for calcium, is expressed in dorsal root ganglia (DRG) neurons and well known for his implication in pain and inflammation.

The aim of this study was to analyze the molecular mechanism initiated by the acute application of CXCL1 on DRG sensory neurons at EC50 concentration. The results showed that short time application of CXCL1 activates TRPV1 channels located only in the membrane of IB4 + neurons via CXCR2 receptors. Specific blockers for several signaling pathways (PLC, PKA, p38-MAPK, PKC, Gi/o) revealed that only Gi/o is involved in CXCL1-induced TRPV1 activation, a process mediated only by actin filaments and not but microtubules.

These results show that acute application of CXCL1 activates TRPV1 via CXCR2 receptors in a Gi/o and actin dependent manner, activation that may be important for the development of pain mechanism.

Acknowledgements:

“This work was supported by the strategic grant POSDRU/187/1.5/S/155559 Competitive multidisciplinary doctoral research at European level (CdocMD) cofinanced by the European Social Found within the Sectorial Operational Program Human Resources Development 2007 – 2013”

ELECTRICAL STIMULATION OF THE M1 AND S2 PRODUCES HEAT ANTINOCICEPTION IN NEUROPATHIC RATS

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Clinically, stimulation of the primary motor (M1) and secondary somatosensory (S2) cortices has proved to be effective in relieving neuropathic pain in patients unresponsive to drug treatment. In our study, we examined the effect of electrical M1- and S2-stimulation on a heat-evoked withdrawal reflex in neuropathic rats under light pentobarbital anaesthesia. Neuropathy was induced by ligation of spinal nerves L4-5. Of nerve-injured rats, only those with tactile allodynia were studied. Our results indicate, that M1-stimulation prolongs withdrawal latency in sham-operated and neuropathic rats. The antinociceptive action induced by M1-stimulation was prevented by inhibiting medullary serotonergic cells with intramedullary administration of an 5-HT_{1A} autoreceptor agonist. In contrast to M1-, S2-stimulation attenuated spinal nociceptive reflex only in neuropathic rats. The difference in the effectiveness of S2-stimulation in producing heat antinociception in sham versus neuropathic rats may reflect neuroplastic changes in the S2 induced by chronic nerve injury.

APPRAISING THE PAINFUL SELF: THE CONTRIBUTION OF PAIN CATASTROPHIZING IN THE SELF-REGULATORY PROCESS

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Abstract:

The devastating impacts of chronic pain not only include disability, but also patients' sense of self. Patients experience self-discrepancy when they believe that they can no longer fulfill their hopes or responsibilities. While the impact of self-discrepancy on patients' chronic pain adjustment has been widely-discussed, the underlying mechanism is still unclear. The current study proposes that pain catastrophizing, which is the cognitive process that exaggerates the threat of pain, mediates the relationship between self-discrepancy and pain outcomes in terms of pain interference and emotional distress. A total of 56 patients with chronic pain were recruited from a public hospital in Hong Kong. The participants were invited to receive a semi-structured interview regarding their levels of self-discrepancy and to fill in self-report questionnaires regarding their pain catastrophizing and pain outcomes. Mediation analyses confirmed the complete mediating role of pain catastrophizing in the relationship between self-discrepancy and pain outcomes. The present study provides additional insight into the self-regulatory model of chronic pain, and might be useful for future studies on psychological interventions for chronic pain.

LOCAL INFILTRATION FOR POSTOPERATIVE PAIN AFTER TONSILLECTOMY IN ADULTS: A SYSTEMATIC REVIEW.

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Background: Tonsillectomy is one of the most common procedures in ear, nose and throat surgery. However, it is infamous for its morbidity. Postoperative pain is difficult to manage, especially in adult patients. In adult tonsillectomy, the inflammation of the tonsillar tissue is more widespread resulting in more extensive surgically induced trauma, which in turn increases postoperative pain. This leads to more absence from work (up to 14 days) and a rise in hospital costs, which are 25% higher if postoperative pain endures. The use of local infiltration seems to be a good method of minimizing pain in the early postoperative period.

Objectives: Our goal was to review the current evidence for the use of local infiltrations of the peritonsillar fossa as a mean to reduce postoperative pain in adults.

Type of review: A systematic review of the randomized controlled trials published after the meta-analysis from Grainger et al. published in Clinical Otolaryngology in 2008.

Search strategy: PubMed database was searched with the search terms: "tonsillectomy", "pain" and "infiltration". The following filters were set: randomized controlled trials, only studies published the last 10 years and age of 19 years or older.

Evaluation method: All randomized controlled trials were evaluated by the two authors separately and graded for quality in consensus by using the Jadad scale and the external validity assessment tool (EVAT). Only trials with a Jadad score of ≥ 3 and an EVAT score ≥ 2 (out of 6) were included in this review.

Results: With the literature search 8 articles were found. Two articles were excluded because the population included children and one article was discarded because of the impossibility to define the amount of levobupivacaine administered. The other 5 articles had a Jadad score of 3 to 5 and a maximum EVAT score of 2. One study found that tramadol (2mg/kg) and lidocaine (2mg/kg) dissolved in saline to a total amount of 8 ml provided comparable analgesic effects and were superior to 8 ml saline ($p < 0.05$ and VAS decreased 2-3 times compared to the saline group). In another study 8 ml saline with epinephrine (1:200.000) and 8 ml lidocaine 1% compared to the 3 ml solutions showed a VAS reduction of 5-20% ($p < 0.05$) until postoperative day 7. Ten ml ropivacaine 1% with epinephrine (1:200.000) markedly decreased the intensity of pain compared to bupivacaine 0.5% and placebo. Five ml ropivacaine 2% with epinephrine (1:200.000) provided significantly less pain compared to 5 ml saline until postoperative day 6 ($p < 0.05$). In one study 5 ml levobupivacaine 0.5% was superior to saline in decreasing pain at the first postoperative day ($p < 0.05$), but there were no differences in VAS scores at postoperative hour 1 and 8. Furthermore, there were no differences in analgesic requirements.

Conclusion: Local infiltration seems to be beneficial to relieve postoperative pain after tonsillectomy in adults. High dose, high volume infiltration of long-acting agents like levobupivacaine or ropivacaine seems to have the best results. However, evidence is scarce and shows a lot of variation in pain.

Future directions: More randomized controlled trials with larger patient numbers and longer follow-up are needed to establish the best therapeutic approach in adults. Infiltration with long-acting agents capable of diminishing the pain for the whole postoperative period (up to 14 days) may be preferential. It would be interesting to investigate whether local infiltration with other agents (e.g. ketamine, in combination or as a sole agent) provides even better results.

SELECTED PSYCHOSOCIAL CORRELATES OF MIGRAINE EXPERIENCE AT PUBERTY PERIOD GIRLS

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Background and Aim: In literature there are many examples illustrating the impact of individual experience during migraine pain attack and after on the possibilities of normal functioning. Though the knowledge concerning migraine pain has developed well and is still being developed, the problem of effective help provided to those who suffer from it still constitutes a very complex challenge. There are data indicating that a child suffering from pain and perception disorders that accompany migraine has fewer chances of cognitive benefits that come from functioning in a peer group. The aim of this work is to present the results of research conducted among girls at puberty period that have been diagnosed with pain of a migraine character (with aura and without aura).

Material and method: A semi-structured interview (with the elements of a standardized tool) has been applied. The interviews took place twice or three times at the seat of the Municipal Hospital and Chronic Pain Clinic. The analysis had a primarily quality character. According to the patients (36 persons) the most difficult experiences are those in which pain is accompanied with the vision field disorder, nausea, anxiety, vomiting and severe tiredness.

Results: Some patients said that, based on their experience, they can say that these days are missed in the context of learning and their own plans fulfillment. They are frequently worried that contacts with classmates slow down and deteriorate. The results concerning the scale of symptoms catastrophizing seem to prove the above. The difficulties cumulate when pain is accompanied with nausea and vomiting or anorexia, sometimes diarrhea, shivers, heart palpitations, salivation, excessive perspiration, asthma and yawning. Headaches can make an obstacle in an activity typical for the puberty period and can initiate the destructive feedback – problems with well-being leading towards the avoidance of duties and consequently piling up failures, e.g. delays at school that worsen the state of feeling. In the light of obtained results, among the adverse correlates of migraine pain visible in psychosocial sphere, there are also the following: lowering own sociometric position, decreasing the chances for the realization of potentials, the increase of pessimism, lowering the feeling of safety. Based on presented data, we can say that over 80 percent of girls believe that migraine pain attacks caused that they did not succeed, despite effort made, as the time after the attacks is lost, they have no powers and cannot concentrate. Over half of the examined persons experience anxiety when facing ambitious challenges, as they do not know when headache is to start and will feel “switched off and helpless”. In many cases migraine pain coexists with lowering the participation in common post-school activities and sociometric position worsening. For girls, the decrease in popularity in a group and the number of friends is an additional stress factor. In the light of the obtained data, hours and whole days are lost after the following symptoms: pain, nausea and vomiting, diarrhea, and photophobia. The research provided data indicating that painful, negative reactions of the environment, comments or, on the contrary, lack of reactions of tutors and teachers make an important factor, that can additionally worsen the psychosocial situation of the girls experiencing migraine pain. The combination of factors such as: headaches, improper reactions of opinion-making persons in the school environment (teachers, pedagogists) and difficulties in a social group such as a peer group increase the risk of worsening the functioning in different scopes such as: school results, participation in school life, fulfillment of ambitions, and self-assessment. The combination of two factors, such as experience of migraine pain and difficulties in contacts at school are increased by the consequences that appear in the psychosocial sphere.

Conclusion: The girls with frequent and severe migraine pain attacks lose opportunities to: develop knowledge, acquire new skills and experiences, and receive feedback concerning knowledge and skills. They suffer due to decreased or the complete lack of possibility of acknowledging their attractiveness in comparison with their healthy friends, the possibility of showing own talents and skills in comparison with other children in a group. In many cases dealing with headache (of a migraine character) deprives the possibility of learning, being accustomed to competitiveness, as in many cases it is the factor determining the risk of headache. Stereotypical, thoughtless judgments concerning migraine do not help people who deal with this problem.

Key Words: Migraine experience, lack of possibility, psychosocial correlates

MUSCULOSKELETAL PAIN PROBLEM CONTRA SELECTED CHARACTERISTICS OF PERSONALITY

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Background and Aim: In the Polish centers for patients suffering from chronic pain, such as the one where the presented research was conducted, the personnel (according to the research) has become more and more conscious about the fact that patients feel to have a perspective of efficient therapy of chronic pain, only if the medical methods of pain treatment are accompanied with the psychological help. The psychological sphere is very important, as is revealed in the subject literature and by commonsense observation of everyday life.

Material and method: The test NEO-FFI (NEO Five Factor Inventory) was applied to measure the characteristics of personality. Paul T. Costy's and Robert McCrae's concept of the five factor personality model was agreed to form the basis of the research. Pain was assessed by means of a short version of McGill's Pain Questionnaire (McGill Pain Questionnaire, MPQ- SF). The information from the semi-structural history conducted at the Pain Therapy Outpatients' Clinic accomplished the picture of chronic musculoskeletal pain concerning the examined patients. The group compared 83 patients who use pain treatment programme, some of them regularly (systematically - about 80%), some ad hoc (from City Policlinic Hospital in Czestochowa).

Statistical: The general problem of the research required organizing the observed data in a reasonable structures or grouping the data. That is why the multidimensional explorative techniques, designed for the identification of systems within multidimensional data sets, were applied. In order to identify dependencies that exist between the most important variables (from the point of view of research goals), the analysis of regression was applied. In order to assess the empirical data in a taxonomical way, the classification algorithm, belonging to the group of algorithms, known under one common name: cluster analysis, was applied.

Results: In case of the examined group of patients suffering from chronic pain the significance of 2 variables explaining the changes in the intensity of symptoms was revealed. They were: neuroticism and extraversion. In the regression models their participation to a considerable extent was revealed - neuroticism ($B=0,52$, $p<0,0001$) and extraversion ($B=-0,62$; $p<0,0001$). Neuroticism seems to be a risk, accurate predictor of depressive symptoms occurrence, concerning persons suffering from pain. The analysis of certain elements in a model evidenced that personality characteristics connected with controlled fear and negative thoughts may be eliminated as insignificant. The insignificant personality characteristics included agreeableness ($Beta=0,03$; $p<0,70$) and conscientiousness ($Beta = 0,06$; $p<0,43$). A possibly clear picture of those personality characteristics, the participations of which revealed to be statistically unimportant, was obtained due to the analysis of regression. The obtained results reveal that there are empirical circumstances, so we can think that the answer for the question, whether the intermediary factors, such as personality factors, differentiate the level of depressive symptoms among the Patients of the Pain Therapy Outpatients' Clinic suffering from chronic pain of cervical and thoracic segment of spine, is positive. The obtained regression model reveals that extroversion and neuroticism may be the predictors of depressive symptoms occurrence. The results obtained, though so far presented on the basis of the examination of a small number of patients, give some basis to improve the process of identification of patients with the risk of depressive symptoms occurrence and worsening, due to some specified qualities of personality or their certain configurations. At the present moment, conclusions that can be drawn from the research are limited. The research is being continued.

Conclusion: In case of persons with different personalities, one selected approach to the pain therapy will not be efficient in all the cases and in respect to each patient. Failing to notice the individual differences and the role of psychological factor slows the effects of pain treatment

key words: Musculoskeletal pain, Depressive symptoms, Personality, Intermediary factors

MINDFULNESS-BASED COGNITIVE THERAPY (MBCT) FOR MIGRAINE PROPHYLAXIS - A RANDOMIZED CONTROLLED TRIAL

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Background

In our pilot study from 2011, a non-migraine-specific Mindfulness-Based Stress Reduction (MBSR) intervention produced positive effects on migraine variables and psychological wellbeing in a sample of 62 migraine patients. With an innovative migraine-specific adaptation of the Mindfulness-Based Cognitive Therapy (MBCT), we wanted to evaluate the effects of tailoring a generic intervention to the specific needs of patients suffering of migraine.

Methods

The migraine-specific MBCT (8-week group intervention, 2.5 h once per week, consisting of migraine specific psychoeducative elements, yoga, meditation, body scans, exercises for cognitive defusion, discussion and exchange of experiences) is evaluated in a sample of $N = 52$ migraineurs concerning its efficacy in migraine prophylaxis in a randomized waitlist-controlled trial. Direct migraine parameters (i.e. impairment, frequency, medication consumption) are assessed pre and post to intervention in a 4-week headache-diary. Moreover, variables of psychological wellbeing and coping (i.e. perceived stress, depressivity, anxiety, stress reactivity, pain related self-efficacy, rumination, catastrophizing, self-compassion, mindfulness) are assessed by questionnaires.

Results

52 patients were allocated to either MBCT or a wait-list control group in equal shares. With respect to the migraine parameters, significant improvements could not be found in the MBCT group, including the primary outcome migraine-related impairment. However, significant changes in the expected directions were found in

seven of nine psychological parameters, with effect sizes in the small to medium range. In five of these nine parameters, a significant superiority compared to the control group was shown (in terms of reduction of perceived stress, anxiety, rumination, catastrophizing, and increase of self-reported mindfulness). The feasibility of the intervention was clearly supported in this sample of migraine patients.

Conclusion

The first-time evaluated migraine-specific MBCT proved to be a feasible and also effective intervention in terms of psychological well-being and coping compared to a wait-list control group. However, a direct influence on genuine migraine parameters and prophylactic effects was not supported. Possible reasons and implications due to the cognitive nature of the intervention and of the idea of tailoring interventions to target diseases were discussed against this background.

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PATIENT-CONTROLLED ANALGESIA BY PATIENTS UNDERGOING TOTAL HIP ARTHROPLASTY

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Introduction

The aim of this prospective randomized study is to evaluate the effect of methods of patient-controlled analgesia (PCA) by patients after total hip arthroplasty during the immediate post-operative care. Furthermore, a comparison of the quantity of consumed analgesics by patients with PCA and analgesia administered by the standard way, i.e. by a nurse on request of medical indication. At the same time to compare the intensity of pain, the incidence of complications and patients' satisfaction by both monitored groups.

Compare the total consumption of analgesics by patients with PCA and analgesia administered by NCA (nurse controlled analgesia) by the standard way (on request of medical indication) after total hip arthroplasty surgery during the first 12 and 24 hours after surgery. Compare the intensity of pain according to VAS patients with PCA and analgesia administered by NCA (nurse controlled analgesia) by the standard way (on request of medical indication) after surgery total hip arthroplasty during 24 hours after surgery. Compare patients' satisfaction with PCA and analgesia administered by the standard way (on request of medical indication) after total hip arthroplasty surgery during 24 hours after surgery.

Patients with PCA usually receive better pain relief without increasing side effects than patients with conventional analgesia. The effect of PCA was verified by numerous clinical studies. Yet the results are not always clear.

Physiology of pain

According to the International Association for the Study of Pain (IASP) defined pain as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage."

There is individual variation in response to pain which is influenced by genetic, culture, age and gender. Some patients have inadequate pain control risk and require a special attention. These include pediatric patients, geriatric patients, patients who have difficulties in communication (a critical illness, cognitive impairment or language barrier).

The postoperative pain may be divided into an acute and a chronic pain. The acute pain is experienced immediately after surgery (up to 7 days).

A pain that lasts more than three months after the injury is considered chronic. Both the acute and chronic pain can arise from skin, deep somatic or visceral structures. Any surgery is typically followed by an acute pain. Correct identification of the type of pain allows the selection of an effective treatment. The type of pain may be somatic (pain skin, muscle, bone), visceral (the thoracic and abdominal organs), or neuropathic (caused by damage or dysfunction of the nerve system). Patients usually simultaneously experience more than one type of pain. The acute pain has a "positive" physiological role. It provides a warning of the tissue damage, induces restraint which facilitates healing. The negative effects of pain are the emotional and physical suffering of the patient, sleep disorders, the adverse effects on the cardiovascular system (such as hypertension and tachycardia), the increase in oxygen consumption, failure of peristalsis (while acting opioid constipation and / or nausea, untreated pain can be caused by disorders of peristalsis or PONV), the adverse effects on the respiratory system (leading to atelectases, retention of secretion and pneumonia), slow mobilization and facilitation of thromboembolic events (postoperative pain when moving is one of the main causes of the slowdown mobilization) (18).

Methods

A prospective randomized study was elaborated within 16 months (September 2014 - December 2015) on the ward of KARIM FN Ostrava. The randomization of patients was performed by the attending physician by the envelope method after the adoption on the workplace KARIM FNO. The patients was classified into 2 groups according to the method of postoperative analgesia. Each patient was educated about the chosen method by the attending physician and about the technical procedure. In case of PCA it concerns the pump use which is taught by a nurse. Finally, the patient signed a relevant document with his/her consent. Each patient receives the primary information about the method of patient-controlled analgesia from FNO newsletter after an anesthetic examination within the anesthesiology clinic KARIM.

The study does not interfere the clinical practice nor the patient's regime. The observation was performed by patients hospitalized in KARIM FN Ostrava in the immediate postoperative care, i.e. 24 hours after surgery. The total consumption of analgesics, the pain intensity according to VAS during the patient's rest and after 24 hours of physical activity, the incidence of complications as nausea, vomiting, motor block, pruritus, urinary retention and patient's satisfaction with the selected method of analgesic therapy will be evaluated according to the numerical scale 0-7 (0 = absolutely dissatisfied, 7= most satisfied). The duration of hospitalization will be compared with the referring group of respondents.

First, the data was processed in a descriptive statistics. For comparison, the characteristics of the control and monitored groups will be used a 2 two-sample test at a significance level of 5%. The Fisher's exact test at a significance level of 5% will be used in case of small frequencies (<5).

The observational protocol record:

1. baseline patient characteristics - age, sex, weight, height, BMI, diagnosis, GCS
2. APACHE II score
3. VAS on admission to KARIM FNO and every hour from 10pm to 6 am the pain will be assessed only in case of patient's painful response
4. analgesic therapy - the name of the drug, a single dose of the drug - bolus, continuous, total dose 24 hours after the operation, the method of administration, the chosen method
5. complications associated with the analgesic therapy - nausea, vomiting, loss of consciousness, pruritus, motor blockade, urinary retention, hypotension, respiratory depression
6. Patient's satisfaction
7. Ease of Care Questionnaires (EOC - Viscisi et al, 2006)

Rating of nausea, vomiting (PONV) - score is 0 - no nausea, 1 mild nausea, 2 - use of antiemetics, 3 - nausea over anti-emetics, 4 vomiting. Rating of sedation – score is 1 patient awake, 2 tired, lethargic, falls asleep easily, 3-somnolent patient, 4-koma.

Motor blockade - Bromage scale - rating on Bromage scale 0 - to increase the ability to bend to the bottom edge of the bed, 1-the ability to bend the knee and ankle, 2- the inability to bend the knee, 3- the inability to fold the ankle. Rating of urinary retention included unrated, catheterized patient. Definition: the inability to urinate in bladder volume ≥ 600 ml 6 (up to 4 h after surgery). Rating of Guest Satisfaction - Likert scale means 0-extremely dissatisfied, 1-very dissatisfied, 2-dissatisfied, satisfied-3, 4-very satisfied, 5-extremely satisfied
Rating of postoperative hypotension - reduction of systolic blood pressure by 30% TK preoperatively. Rating of Guest respiratory depression -standard DF 1, DF 2 ≤ 12 / min, 3 DF ≤ 8 / min. Rating of itching - 1 yes, 2 no

Criteria for inclusion in the study:

- Age above 18
- ASA I-III according to the preanesthetic examination
- patient after the primary surgery - total hip replacement hospitalized at KARIM FNO for the immediate post-operative care
- GCS 13 and more
- Spontaneous breathing with the respiratory rate of 12-24 / min
- SpO₂ 90%
- Modified Bromage score with 0-1
- VAS 4
- The patient's consent with the inclusion to the study 5

Criteria for exclusion from the study:

- History of long-term opioid therapy - during 4 days before surgery, the patient had opioid analgesic doses higher than codeine 120mg / day, hydrocodone 40 mg / day, tramadol 200 mg / day, 40 mg of oxycodone / day
- Indications for surgical revision in the immediate post-operative care
- Acute ringworm phase

Characteristics of the investigated group

The study was involve patients who were admitted to the immediate post-operative care after primary total hip arthroplasty at KARIM FNO. Upon receipt of the patient the physician evaluates the possibility of including him/her in the observed file of respondents according to the criteria for inclusion in the study. The patients received a premedication and an anesthetic care according to the given protocol. By patients who received the preoperative epidural catheter for postoperative analgesia will be assessed the level of motor block according to the modified Bromage score. The randomization of patients was performed by a doctor on the basis of the criteria evaluation for the enrollment by the envelope method. The observation of respondents was launched at the intensity of pain according to VAS ≤ 4 with a record in the log. The analgesic therapy in a group of respondents was carried out according to the protocol for analgesic therapy.

Discussion

Ballantyne et al. performed a meta-analysis of randomized trials, which enrolled 711 patients after intra-abdominal surgery. It was compared the PCA in the manner of intravenous opioid analgesia with continuous epidural analgesia. The conclusion was that the PCA group had higher pain according to visual analog scale (VAS) than patients with continuous epidural analgesia. Also, the difference in length of hospital stay, depending on the method used was not significant (1). On the contrary, Cochrane Anaesthesia Group compared 32 studies, in which 1139 patients analgetics with morphine were analyzed, 682 patients with pethidine, 184 wit piritramide, 47 with nalbuphine and 20 with tramadol. A meta-analysis provided data on pain intensity and analgesic consumption which spoke in favor of PCA. In two studies which used morphine for analgesia resulted in a lower number of pulmonary complications by patients with PCA. Therefore, these studies provided evidence that postoperative pain management with opoids via PCA compared with conventional opoid therapy improves analgesia and reduces the risk of pulmonary complications. Moreover, patients prefer PCA in many cases (2).Macintyre et al. and Walder et al. (2001) concluded in their study that the perception of pain by patients after surgery with different methods of analgesia is basically the same. However, the patients felt with the PCA method subjectively surer and without anxiety (3,4). An effective treatment of pain is an integral part of modern surgical practice. A treatment of postoperative pain not only minimizes the patient's suffering but also reduces morbidity and facilitates a quick recovery and early discharge from hospital which also reduces the hospital cost.

Results

Patients in the group PCA was a statistically significant difference in the consumption of analgesics during the first 24 hours after surgery ($p < 0.001$).

Patients with PCA had lower consumption of analgesics. The average dose of analgesic mixtures when administered continuously been among a group of PCA 3,67 ml/h, a group of non PCA was 4,35ml/h. When comparing the intensity of pain was not statistically significant difference. Patients in group PCA was reported lower VAS (2-3) during the first rehabilitation group compared to nonPCA. Patients were mobilized much faster collaborate with physiotherapists . It was demonstrated significantly higher patient satisfaction according to the Likert scale .The average value in patients with PCA was 4, while patients with nonPCA the average value 3 .

Conclusion

Applying patient-controlled analgesia in patients undergoing total hip replacement gives patients greater satisfaction, faster rehabilitation and reduced consumption of analgesics during the first 24 hours after surgery.

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THE RELATIONSHIP BETWEEN KNEE EXTENSION STRENGTH AND PAIN THRESHOLDS IN ELDERLY PEOPLE

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Background and Aim

It is known that painful knee osteoarthritis patients often present with deep tissue hyperalgesia and low pressure pain threshold¹⁾. Moreover, knee pain also reduces knee extension strength²⁾. However, the relationship between knee extension strength and pain thresholds around the knee joint in the elderly people is unclear. The aim of this study is to clarify the relationship between knee extension strength and pain thresholds in elderly people.

Methods

The participants of this study were 33 elderly people (17 females) who took part in a therapeutic exercise program in two nursing homes.

Isometric knee extension strength was measured by fixed handheld dynamometer on a chair. Pain thresholds to pressure and mechanical skin stimulation were measured by pressure algometry (Somedic, Sweden) and pin-prick (von Frey) assessment, respectively. The location of measurement was three sites (middle patella, medial joint space, and lateral joint space) in each side.

Results

Significant correlations were found between the maximum knee extension strength and pressure pain thresholds assessed at all sites ($r > 0.37$, $P < 0.05$), whereas the maximum knee extension strength and surface pain thresholds were not correlated. A significant correlation was also found between maximum knee extension strength and averaged pressure pain thresholds across the three sites ($r = 0.43$, $p < 0.05$).

Conclusions

This study demonstrated the significant relationship between knee extension strength and pressure pain thresholds in elderly people. This suggests that a useful parameter for the evaluation of the sensory-motor interaction in the knee joint could be pressure pain thresholds.

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MULTIDISCIPLINARY MANAGEMENT OF COMPLEX REGIONAL PAIN SYNDROME TYPE 1 IN CHILDREN ADMITTED TO RED CROSS WAR MEMORIAL CHILDREN'S HOSPITAL: A CASE SERIES DESCRIBING LONG-TERM EFFECTS ON PAIN, FUNCTION AND QUALITY OF LIFE

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Objective:

This study aims to assess the efficacy of treatment of Complex Regional Pain Syndrome (CRPS) Type 1 in children admitted to Red Cross War Memorial Children's Hospital (RCWMCH) in eliminating pain and improving function. Long-term outcome measures of pain and function were used that can be repeated and compared in future studies.

Methods:

A retrospective folder review and follow-up telephonic survey of all children admitted to RCWMCH over a 5 year period was performed. Follow-up questionnaires included the Faces Pain Scale, as well as the Paediatric Quality of Life Inventory Version 4 (Peds QL 4).

Intervention:

In-hospital treatment was provided by a multidisciplinary pain management team. This included pharmacological treatment which consisted of a varying combination of Gabapentin, Clonidine, Amytriptilline and intravenous Ketamine infusion. The main aim was to enable participation in intensive physiotherapy. Invasive interventions were avoided except as a last resort.

Results:

Nine children with CRPS Type1 were included in the study. Girls were affected in 66%. The mean age at onset was 11.6 years. The lower limb was affected in 67% of cases. The time from initial injury to referral to RCWMCH pain centre ranged from 2.5-27 months (mean 7.5). On average, children visited 7 different health care providers before being referred to a specialist pain centre. Invasive interventions were performed in 33% of children prior to being referred to RCWMH. During admission one child (11%) underwent invasive intervention (Epidural infusion); the others all received non-invasive treatment. Children experienced an average improvement in pain (using the Faces Pain Scale) of 67.8% by the time of discharge. At long-term follow-up the average pain score had worsened by 10.5% compared to the time of discharge. Two children (22.2%) experienced complete recovery and the others (77.8%) experienced partial recovery. Three children (33.3%) experienced a relapse, of which one (33.3%) recovered completely. In terms of quality of life, children scored themselves as having on average a 36.9% physical function interference, 25% emotional function interference, 17.5% social function interference, and 20.5% school function interference.

Conclusion:

Children with CRPS experience a significant improvement in pain and function with an in-patient, multidisciplinary, non-invasive treatment approach. However, the rate of complete recovery is low (22.2%), relapse is common (33.3%), and most children have persistent pain and a degree of functional interference at an average follow-up time of 10.3 months (range 6 to 21 months). We recommend a long-term support program for children with CRPS and their families following discharge from hospital, and a standardisation of follow-up time intervals and outcome measures to enable comparison between future studies.

CHRONIC PAIN & SELF-MANAGEMENT: THE ROLE OF INTERNET AND SOCIAL MEDIA

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Background and aim

Chronic pain is a complex, multidimensional subjective experience that involves all aspects of life. Active self-management of chronic pain is a dynamic and continuous process of adapting one's life situation to the cognitive, behavioural and emotional responses necessary to maintain a satisfying quality of life. Recent research indicates that people suffering from chronic illness are more likely to blog or participate in online discussions about health problems. As such, virtual communities can function as mental health and social support interventions.

The aim of this study is to explore patient's experiences with internet, social networks and interactive support groups as a part of self-management in chronic pain.

Design

This study has a qualitative design based on a phenomenological approach. Participants were 18 outpatients suffering from chronic non-malignant pain recruited from all health-regions in Norway. Individual face- to face interviews were conducted from May to September 2015.

A qualitative content analysis was employed, following several steps:

1. Transcription
2. Open reading
3. Identifying meaning units and categories.
4. Forming themes
5. Reflection and discussion

Results

Sub-themes derived by content analysis indicate that the significance of active involvement to gain knowledge, maintaining social relations online and involvement in interactive peer support groups is an important part in managing chronic pain. One overall thematic finding was formulated: Internet, social media and online peer support is a significant part of self- management in chronic pain.

Conclusion

For many people, social networks and interactive discussion groups are a place for idle chatter. For people living with chronic pain, they may play a more essential role and joining virtual communities and peer-to-peer online support groups seem to lead to a positive influence on self-management of chronic pain.

THE ROLE OF Kv7 POTASSIUM CHANNELS IN CENTRAL ANTINOCICEPTION INDUCED BY DICLOFENAC AND ETODOLAC

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Pain is a physiological unpleasant sensation related with tissue damage that affects major part of human population. Various ion channels and receptors are involved in the modulation of pain. Potassium (K⁺) channels are membrane proteins that have been basically associated with neuronal processes. One of them is voltage-gated Kv7 (or KCNQ) potassium channels. It is thought that they have potential role in the modulation of pain since these types of channels are demonstrated in the central nervous system and dorsal root ganglion sensory neurons. Nonsteroidal anti-inflammatory drugs (NSAIDs), which main mechanism is the inhibition of cyclooxygenases (COXs), are commonly used in the treatment of pain. In last years, it is claimed that NSAIDs induced central antinociception via various central analgesic mechanisms. Present study, it is aimed to investigate the possible involvement of Kv7 channels in mechanism of central antinociceptive action of two NSAIDs, diclofenac (50 mg/kg, i.p.) and etodolac (70 mg/kg, i.p.) in mice. XE 911 (1 mg/kg, i.p.), the potent and selective blocker of Kv7 channel, was used for to evaluate the role of Kv7 channels in central antinociceptive effects of selected NSAIDs. After drug administrations, the latencies of response induced by thermal stimulus in hot-plate test were evaluated. The results of experiment showed that diclofenac and etodolac exhibit significant analgesia when compared to control group ($P < 0.01$, $P < 0.001$, respectively). Pretreatment with XE 911 relatively reversed the analgesic response of etodolac and diclofenac. According to the test results, it can be concluded that Kv7 channels are partially involved in the central analgesic activity of diclofenac and etodolac. The investigations on possible involvement of Kv7 channels in the peripheral and central antinociception induced by other NSAIDs are still in process by our team (Project no: 1409S394, supported by the Anadolu University Scientific Research Projects Unit).

THE INVOLVEMENT OF THE TRP CHANNELS IN CENTRAL ANTINOCICEPTIVE EFFECT OF ETODOLAC AND DICLOFENAC

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Nonsteroidal anti-inflammatory drugs (NSAIDs) are the most commonly used agents for the management of pain, fever and inflammation and treatment of rheumatoid arthritis, osteoarthritis and ankylosing spondylitis etc. These drugs activities mainly occur via cyclooxygenase enzyme (COX) inhibition. However, this mechanism is inadequate to explain the analgesic activity of NSAIDs. Transient receptor potential (TRP) superfamily comprises a large group of related cation channels that are noxious stimuli detectors in nociceptors. They widely distributed in the central and peripheral nervous systems, therefore these channels are new target for investigation of mechanisms of analgesic effect. TRP channels involved in the nociception and they are stimulated by chemical agents, thermal or mechanical stimuli, etc. The purpose of the present study was to investigate the role of TRP channels on central antinociceptive effects of etodolac and diclofenac, by using hot plate test. The mice were injected with ruthenium red (RR; 3 mg/kg), TRPV1 antagonist, etodolac (70 mg/kg) and diclofenac (50 mg/kg) intraperitoneally. The vehicle was injected to the control groups at the same volume (0.1 mL). In the hot-plate test model of thermal nociception, etodolac and diclofenac significantly showed antinociceptive effect (respectively, $P < 0.001$, $P < 0.01$). The pretreatment with RR did not reverse the antinociceptive effect of etodolac and diclofenac. Thus, it can be thought that the TRP channels don't play a role in central antinociceptive effects of both etodolac and diclofenac. Our research group are investigating involvement of TRP channels in the central and peripheral antinociceptive effects for other NSAIDs. (Project no: 1409S394, supported by the Anadolu University Scientific Research Projects Unit).

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