



5th International Conference and Exhibition on

PAIN RESEARCH AND MANAGEMENT

October 05-06, 2017 London, UK

e-Poster

Pain Management 2017

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Effect of ibuprofen and metamizole administration on leukocyte/granulocyte counts and renal function in surgical patients in an oral and maxillofacial surgery department: A retrospective study

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Statement of the Problem: The long-term use of ibuprofen and metamizole, drugs prescribed as first line treatment for patients with mild to moderate pain (Numerical Rating Scale, NRS 1-5), was suspected to affect renal function and leukocytes/granulocytes counts when administered to surgical patients. The purpose of this study is to present possible alterations of leukocyte/granulocyte counts and renal function in surgical patients that postoperatively received ibuprofen and/or metamizole for analgesic treatment.

Methodology & Theoretical Orientation: 180 patients that had a surgical intervention at our department in the last 6 months and received ibuprofen and/or metamizole postoperatively have been included in the study. For each patient the values of the leuko- and granulocyte count, as well as of the glomerular filtration rate (GFR) and the creatinine (in blood) value at admission and at discharge were selected. Specifically, following exclusion criteria have been selected: patients 1. under 18 years, 2. with chronic pain syndromes, 3. with a glomerular filtration rate (GFR) below 60 ml/min, 4. with a history of chemotherapy or preoperatively documented granulocytopenia, and 5. those with an acute or chronic inflammation. The data were analyzed by means of an exploratory data analysis as well as of Wilcoxon test (SPSS, $p < 0.05$).

Conclusion & Significance: The renal function values (creatinine in blood, GFR) as well as the counts of leukocyte and granulocytes showed no statistically significant difference when postoperative and preoperative values were compared. Additionally, no differences could be found after patient division in two age groups (younger and older than 50 years).

The postoperative administration of ibuprofen and metamizole, alone or in combination, is safe for acute postoperative pain management in patients without preexisting renal function impairment and normal leukocyte and granulocyte count.

Biography

Dietrich Eva Maria is a Trainee at the Department of Oral- and Maxillofacial Surgery at the University Hospital of Erlangen in Erlangen, Germany. She has her expertise in evaluation of patients' pain perception and of diagnose-specific pain characteristics and treatment needs, as well as in improvement of acute postoperative pain by offering an individualized analgesic treatment adaptation. Her scientific orientation also includes microvascular reconstructions and oral cancer in oral and maxillofacial surgery.

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Accepted Abstracts

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Individual differences in perception and response to experimental pain among secondary school students in Zaria, Nigeria

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Statement of the Problem: Pain is a protective sensation that alerts an individual to injury from the environment. Experience of pain is characterised by robust individual differences and complex environmental and genetic factors lead to individual variations in pain. Studies of experimental pain are free from the confound of disease progression and can be highly relevant to clinical pain states.

Aim: The aim of this study is to evaluate individual differences in perception and response to experimental pain among students in Zaria, Nigeria.

Methodology: One hundred and thirty apparently healthy subjects (age 12 to 20 years) were used. Pain was accessed using cold pressor test and ischemic pain models. VAS and VRS were used to access pain catastrophizing. Data were presented as mean \pm SD. Differences and statistical significance between the means were determined by ANOVA. Values of $P < 0.05$ were considered significant.

Findings: The results showed significant differences among the study population in experimental pain threshold and tolerance.

Conclusion: The study proved that there is variation in perception and response to experimental pain among secondary school students in Zaria, Northern Nigeria.

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Stability and change in fibromyalgia symptoms: A 2-year longitudinal study

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Background & Aim: Fibromyalgia is musculoskeletal pain disorder that impacts well-being and interrupts daily activities. The present study evaluated the stability and change of key fibromyalgia symptoms over a 2-year period.

Methods: Patients from an existing fibromyalgia registry were mailed seven validated questionnaires evaluating physical functioning, fatigue, daily limitations, pain, sleep levels, mental and physical well-being, and cognitive abilities. Of the 1303 patients contacted, 858 returned a completed survey. Approximately two years later, the patients who completed the baseline survey were sent a second and identical survey. A total of 450 patients returned the follow-up survey and are included in these analyses.

Results: Paired t-tests showed a significant change in fibromyalgia impact, fatigue, mental and physical health, pain, mood, and cognitive abilities ($p < .05$) over the two-year period. Statistically larger decreases in mental health and increases in pain, as well as, vitality were observed. The remainder of the changes, while statistically significant, was smaller.

Conclusions: Although the results of our study suggest a slight trend toward improvement in several of the measures, changes were small to modest in size; and not significant according to minimum clinically significant difference (MCID) criteria over the two years of this study. Our study sheds light on the longer-term prognosis for worsening or improving symptoms in fibromyalgia. Specifically, our findings suggest that the long-term trajectory for change, in either direction, is considerably more stable and unchanging than existing research might suggest.

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A balanced low FODMAP diet is effective in treating fibromyalgia patients - reducing pain and improving life-quality

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Fibromyalgia (FM) is a chronic disease of unknown aetiology, characterized by widespread myofascial pain and reduction in quality of life (QOL). FM and Irritable Bowel Syndrome (IBS) are frequently found to be overlapping “sensory sensitivity syndromes”. To date, pharmacotherapy has had limited therapeutic efficacy in treatment of FM. There is growing evidence that diets low in FODMAPs (fermentable oligo-di- and mono- saccharides and polyols) are effective in reducing IBS symptoms. We investigated if a balanced low FODMAP diet (LFD) could reduce FM and GI symptoms and improve QOL (Quality of Life). We conducted a longitudinal study of LFD intervention using a four-week, repeated-assessment model. Initially, clinical assessments were made and participants presented LFDs. Following LFD treatment, we assessed any effects and reintroduced FODMAPs to the diets. We then conducted final assessments and provided nutritional counselling. Assessment tools included: Revised Fibromyalgia Impact Questionnaire (RFIQ: 0-100), Fibromyalgia Survey Questionnaire (FSQ: 0-31), Severity Score System (IBS-SSS: 0-500), Euro-Quality of Life (QOL: 0-100), and Clinical Outcomes Routine Evaluation (Core-OM: 0-4). The cohort included 38 women, mean age 51 years, with 10 years of FM. Initial assessments showed scores for severity of FM of 22±4.4, RFIQ 65±17, IBS-SSS 275±101, and QOL 48±19. There was 86% adherence to LFD diets accompanied by a significant ($p<0.01$) reduction of FODMAPs intake, from 25 g/day to 2.5 g/day. Follow-up assessments showed significant reductions in VAS Pain (Visual Analogue Scale) FSQ and RFIQ scores ($p<0.01$). Severity of GI symptoms was reduced by 50% with a significant reduction of IBS-SSS to 132±117. Improvements in FM and gastrointestinal scores were significantly correlated ($r=0.36$; $p<0.05$) and adherence to diet was significantly correlated with “satisfaction with the improvement” ($r=0.65$; $p<0.01$). This pilot study shows that GI and pain symptoms associated with FM can be reduced by restricting FODMAPs. A more comprehensive study of diet therapy for treatment of FM is warranted.

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How to report statistics in medicine?

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I suspect you do not have the time or desire to learn all the nuances, formulae and theories in statistical computations. You just want to know what tests/methods to use for your study and what needs to be reported. Whether you are reporting results to the FDA or in the medical literature or to upper management, etc., you will need to ensure you are reporting your results accurately, for your type of study. You can think of my guidelines as Cliff's Notes for reporting statistics in medicine. This is just a small snapshot of the comprehensive guide. I will discuss the following three common study objectives: 1. Group Comparison, 2. Performance Goal, 3. Identify Risk Factors. For each of the three common study objectives, I will first present examples of accurately stating the objectives. Second, I will provide a comprehensive template for reporting the results from each of the three types of studies. The templates will include relevant medical examples, numeric results, statistical findings, tests/methods, etc. Finally, I will provide the full list of concepts covered in my guidelines.

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Thoracic epidural anesthesia and analgesia reduce postoperative ileus after retroperitoneal laparoscopic urological surgery

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Statement of the Problem: Postoperative ileus (POI) is a transient impairment of bowel motility following surgery. The etiology of POI is complex; it is primarily associated with the surgical stress response, an acute inflammatory response associated with manipulation and endogenous opioids secreted within the gastrointestinal tract in response to surgical trauma. The anesthetic management routines (e.g., opioid-sparing anesthesia and analgesia with epidural anesthesia and analgesia) that may result in reduced time to gastrointestinal recovery and hospital length of stay. The present report is to assess the effect of thoracic epidural anesthesia and analgesia for retroperitoneoscopic surgery on POI for urologic procedures.

Methodology & Theoretical Orientation: A total of 34 patients underwent retroperitoneoscopic nephrectomies were recruited for analysis.

Findings: The resumption of oral intake occurred more quickly in the group with thoracic epidural anesthesia and analgesia than the group without epidural anesthesia and analgesia after operation. The hospital stay and total convalescence time were similar for the two groups.

Conclusion & Significance: The retroperitoneoscopic nephrectomy under thoracic epidural anesthesia and analgesia reduces the time to resuming normal oral intake for patients postoperatively. However, the retroperitoneoscopic nephrectomy does not significantly improve the length of hospital stay.

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Pain management in the emergency department – A behavioral medicine perspective

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Psychosocial issues have been recognized as important for the understanding and treatment of pain for many decades. Their relevance has mainly been limited to chronic pain, however. Acute pain has been thought to be largely determined by nociception. Albeit there is some truth to this, research in recent years has revealed a significant influence of contextual factors in acute pain situations as well. An evolving conceptual framework for understanding the expression of pain in a psychosocial context is behavioural medicine, based on contextual behavioural science as well as on biomedicine. This presentation will use the model of emergency department pain to describe a behavioural medicine conceptual model for acute pain.

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A 31-year-old woman with reflex sympathetic dystrophy syndrome (CRPS): Case report

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A case of a 31-year-old woman with complex regional pain syndrome type I (reflex sympathetic dystrophy syndrome) (CRPS) of the left arm is described. Brachial plexus block (BPB) has been cited as a treatment modality for CRPS. This report is based on the retrospective observations of the outcome and effects of axillary brachial plexus block (BPB) in a patient with CRPS. 31-year-old woman suffered from CRPS of the left upper limb after trauma for 5 months. Symptoms over the left upper limb were not alleviated under conventional pharmacological treatment and rehabilitation and severe painful swelling of the left wrist persisted. Axillary BPB with 30 ml Naropaine 0.2% was performed and 12 hours later resulted in significant reduction of pain and improvement of function of the left wrist. Complex regional pain syndrome type I (CRPS I); formerly reflex sympathetic dystrophy) is a syndrome that develops after a trauma affecting the limbs, without obvious peripheral nerve lesion. Its features include pain and related sensory abnormalities, edema, autonomic dysfunction, movement disorder, and trophic changes. Typically, spontaneous pain or allodynia is not limited to the territory of a single peripheral nerve and is disproportionate to the inciting event. Numerous pathophysiologic components of the disease have been identified, including neurogenic inflammation, peripheral and central sensitization, and impaired sympathetic function. We present this case of 31-year-old woman with CRPS of the upper extremity, who was treated with brachial plexus block. The woman was presented to the orthopaedic clinic, declaring that she could not use her left hand and resisted even the touch of anyone who attempted to examine it for the last five months. An orthopaedic consultation was assessed soon after her trauma, and no fracture nor soft tissue damage of the musculoskeletal system could be detected. She had severe pain, edema and limitation of passive flexion of the fingers. The diagnosis of CRPS was confirmed and anti-inflammatory medication started. The patient started a rehabilitation program of passive range of motion exercises, followed by occupational therapy to the left hand. The therapy was not able to diminish significantly her pain and function of the left hand within five months. Axillary BPB with 30 ml Naropaine 0.2% was performed and after 12 hours resulted in significant reduction of pain with gradual improvement of function of left hand. The edema also diminished and a week later the left hand had a perfect recovery. Based on the case reported brachial plexus block seems to have a significant effect. Despite the popularity of brachial plexus block, only few patients and poorly defined outcomes are reported in the literature, substantiating the need of well-designed studies on the effectiveness of the procedure.

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Chronic postsurgical pain in pediatric patients

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IASP declared 2017 year as a Global Year Against Pain After Surgery. CPSP in children is of interest, but the knowledge about it is scarce. Moreover, chronic pain after surgery in children was, and still is, represented insufficiently in the literature and in medical congresses. We already know that inguinal hernia repair, major orthopedic surgery, thoracotomy and some other operations are of risk for CPSP development in pediatric patients. Important, un/under treated acute postoperative pain is the major contributor for this condition. In our experience, pediatric patients with CPSP represent a substantial part of chronic pain clinic visitors. Diagnosis is challenging and treatment is very individualized. Given the large number of children at risk for experiencing chronic postoperative pain, preventative efforts are necessary.

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Clinical best practices of chronic pain management based on Iranian traditional medicine and review

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Statement of the Problem: The term chronic pain has been used to describe intractable pain beyond the cyclical recovery that is expected to be taking. Chronic pain and their physical and psychological disability associated can impose significant costs on economic resources.

Methodology & Theoretical Orientation: This is a case series of clinical best practices as historical study conducted on 200 patients with chronic pain referred to the clinical center in Bojnord. Guided by an acquaintance, the patients were referred to Hajtaleb Medical Complex of Alternative and Complementary Medicine for treatment. Also, electronic literature searches were carried out in Medline, Ovid, EMBASE, CINHALL, Web of Science, the Cochrane Library, and four Iranian medical databases (ISC, SID, Magiran, Iranmedex) through to October 2016 without restrictions of time. The search was limited to studies published on humans and in the English or Persian language.

Findings: After entering the traditional medicine clinic, the patients were under the control of health and nutrition. Pharmaceutical measures of this patient were according to disease temperament and conditions including medicinal herbs, combination drugs. The manual measures were utilized including full back cupping every night until the end of therapy and leech therapy with six medium-to-fine-size leeches in 10 sessions once every three days. The chronic pain healed completely, the patient's physical and mental states improved after 40 days of treatment.

Conclusion & Significance: Given the patients healing process, it seems that combining the modern and Iranian traditional medicine as 'Iranian Effective Medicine' can treat most of the common diseases especially with chronic pain, and it is essential to perform a wide range of assessments and studies in different diseases based on the teachings of medicine.

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Spine sono-intervention warning & safety recommendations

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The spinal cord is a long, thin, tubular bundle of nervous tissue and support cells that extends from the medulla oblongata in the brainstem to the lumbar region of the vertebral column. The brain and spinal cord together make up the central nervous system. The spinal cord is the main pathway for information connecting the brain and peripheral nervous system. The spinal cord (and brain) are protected by three layers of tissue or membranes called meninges, that surround the canal. And spinal injection is done therapeutically between some of these layers, although injection in others cause complication. Ultrasound is a valuable modality for close monitoring of these spaces to prevent injection directly on epidural space and prevent unwanted injury to spinal cord and nerve root. The major contribution to the arterial blood supply of the spinal cord below the cervical region comes from the radially arranged posterior and anterior radicular arteries, which run into the spinal cord alongside the dorsal and ventral nerve roots. In humans, the largest of the anterior radicular arteries is known as the artery of Adamkiewicz, or anterior radicularis magna (ARM) artery, which usually arises between L1 and L2, but can arise anywhere from T9 to L5. Impaired blood flow through these critical radicular arteries, especially during spinal intervention that involve abrupt disruption of blood flow can result in spinal cord infarction and paraplegia. Although Doppler ultrasound is useful for scanning of blood vessel, but because of the risk of intra-arterial injection, insoluble corticosteroids must not be used when real-time contrast dye injection with fluoroscopy and/ or digital subtraction angiography is not used.

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Putting pain out of mind with an ‘out of body’ illusion

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Chronic pain is a growing societal concern that warrants scientific investigation, especially given the ineffectiveness of many treatments. Given evidence that pain experience relies on multisensory integration, there have been some recent attempts at using body ownership illusions for reducing acute pain. In the present study, we investigated whether patients’ experience of chronic pain could be reduced by full body illusions (FBIs) that cause participants to spatially dissociate from their own body and identify with a ‘virtual’ body. Participants (n=18) with chronic pain (including sciatica, osteoarthritis, fibromyalgia, muscular pain, IBS and back pain) viewed their own virtual bodies via a video camera and head-mounted display. In the ‘back-stroking FBI’, their backs were stroked with a stick while they viewed synchronous or asynchronous stroking on the virtual body, and in the ‘front-stroking FBI’, they were stroked near their collarbone while viewing the stick approach their field of view in a synchronous or asynchronous fashion. Each condition lasted for two minutes. Illusion strength and pain intensity were measured with self-report questionnaires. We found that full body illusions were experienced by patients with chronic pain and further, that pain intensity was reduced by an average of 37% after illusion (synchronous) conditions. The degree of pain reduction was positively correlated with illusion strength in the synchronous back stroking condition. These findings add support to theories that high-level multisensory body representations can interact with homeostatic regulation and pain perception. These data also demonstrate the potential of such illusions for the management of chronic pain.

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Synthesis, molecular docking and biological evaluation of some 2-substituted-6-(morpholin-4-yl)pyridazin-3(2h)-ones as potent anti-inflammatory and analgesic agents

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Inflammation is a body response to injury or abnormal stimulation caused by a physical, chemical or biological agent. The first-line mode of therapeutic intervention for inflammation is non-steroidal anti-inflammatory drugs (NSAIDs). However, the long-term use of NSAIDs produces high incidence of gastrointestinal irritation, resulting in the development of life-threatening gastrointestinal side effects such as gastric irritation, ulceration and bleeding. Further discovery of selective COX-2 inhibitors (coxibs) suggested safety without any ulcerogenic side effects; however, long-term use of these drugs resulted in kidney and hepatic toxicity along with an increased risk of secondary cardiovascular effects. Therefore, development of novel anti-inflammatory agents with an improved safety profile is still a necessity to overcome the side effects of the existing agents. The basic approaches towards inflammation and pain treatment are constantly changing and researchers are continuously trying to develop safer and effective anti-inflammatory drug candidates for the treatment of different inflammatory conditions such as osteoarthritis, rheumatoid arthritis, ankylosing spondylitis, psoriasis and multiple sclerosis. Synthetic 3(2H)-pyridazinones constitute an important scaffold for drug discovery. Docking studies suggest that introduction of morpholine moiety on the 6-position and attachment of an amide at N-2 position of pyridazinone nucleus through a methylene spacer may lead to products having potent analgesic

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Multimodal therapy to manage elder patients with persistent pain

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Introduction: Chronic pain in geriatric patients represents a very common complaint in our daily clinical routine. The Geriatric Day Hospital at the Nuremberg Medical Center developed a novel therapeutic concept particularly designed for the treatment of the elderly multimorbid patients (average 75 years) with chronic pain. In the multimodal targeted therapy program, principally non-pharmacological measures are used to treat chronic pain i.e., a newly conceived pain education. Evaluation of initial results will be examined to find out how geriatric patients suffering from chronic pain can exert a positive influence on their well-being and activity by helping themselves.

Methods: Checks at the beginning and end of the procedure will be undertaken and evaluated in a geriatric assessment i.e. psychological (Hospital Anxiety Depression Scale HADS) and physical parameters (Short Physical Performance Battery SPPB, Tinetti-Test).

Results: The program helped for the first time to visibly increase the wellbeing of the 166 patients with chronic pain and their daily activities by teaching them methods to help themselves. At the beginning the higher values of anxiety, depression, inactivity and tendency to fall were at the end clearly improved.

Discussion: This investigation should stimulate the discussion which medical parameters for persistent pain in geriatric patients can be applied for assessment, diagnosis, follow-up, and treatment.

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The effects of individualized homeopathy in patients with chronic musculoskeletal pain: A randomized clinical trial

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Background: Chronic musculoskeletal pain is often associated with comorbidity, long-term disability and reduced quality of life. Current treatments only modestly reduce pain, disability, and distress. Homeopathy is increasingly used in pain conditions in general practice but scientific evidence is lacking. We therefore designed a clinical trial in a way that would not change the practice pattern of homeopathic physicians. The purpose of the study was to explore effects of an individualised homeopathy treatment on pain symptoms and quality of life of patients with chronic musculoskeletal pain.

Method: Study was pragmatic, randomised controlled trial with single blind assessment. Ninety patients aged 18-60, referred to a specialist pain clinic in Jaipur, India, were randomized to Homeopathy or control. Outcome variables were pain, and overall health related quality of life. All the patients had assessment at baseline, 3 months and 12 months.

Results: Significant improvements were reported in Homeopathy group, including pain, and improved functioning ability at 3 and 12 months, where Homeopathy group improved faster in 3 months. After 3 months, significant difference favouring Homeopathy were found in Mental symptoms (anxiety ($p < 0.001$), depression ($p < 0.01$), and functioning ability ($p < 0.001$)) and overall quality of life ($p < 0.0001$). At follow up of 12 months, the Homeopathy group reported less use of health services and better self-evaluated capability of coping with complaints and they took better care of their own health, compared to the control group.

Conclusion: Significant meaningful difference was found with Homeopathy intervention in patients with chronic musculoskeletal pain.

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Pilot evaluation of scrambler therapy for the treatment of chronic neuropathic pain

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Objectives: Neuropathic pain is common after neural injury but often difficult to effectively treat. Scrambler therapy is a novel therapeutic modality which treats pain via noninvasive cutaneous electric stimulation by providing “non-pain” information. This study was performed to investigate the effect of Scrambler therapy for the treatment of chronic neuropathic pain.

Methods: Eligible patients had neuropathic pain symptoms of ≥ 3 -month duration with pain rated as 4 or more on a visual analogue scale (VAS) during the prior week. Patients were treated with Scrambler therapy to the affected area(s) for up to ten daily 30-min sessions. Symptoms were monitored using a VAS ranging from 0 to 10, before and after each treatment session. Primary outcome measure was change in VAS scores at one week; secondary outcome measure was change in VAS scores at two weeks.

Results: Six patients were enrolled. Four patients had spinal cord injury, 1 patient had intracerebral hemorrhage and 1 patient suffered brachial plexus injury. Treatment session 1 to 6, the difference in VAS between before and after therapy was significant ($p < 0.05$, paired t test), but treatment session 7 to 10, the difference in VAS between before and after therapy was not significant ($p > 0.05$, paired t test). At one week, the mean VAS score was reduced from 6.0 to 4.1 (32%) ($p = 0.037$, paired t test). At two weeks, the mean VAS score was reduced from 6.0 to 4.8 (20%) but not significant ($p = 0.058$, paired t test). No undesirable side effects were observed during this study.

Conclusion: Preliminary data support that Scrambler therapy may reduce chronic neuropathic pain immediately during short-term (about 1 week), but did not reduce pain immediately after 1 week of therapy. Pain reduction effect of Scrambler therapy did not persist beyond 1 or 2 weeks. Further randomized sham controlled research is warranted.

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Subclinical atherosclerosis and peripheral vascular disease in systemic sclerosis patients: Relation to potential risk factors

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Objective: To measure the extent of subclinical atherosclerosis in patients with systemic sclerosis, and to evaluate any potential vascular risk factors including blood sugar, blood pressure, adverse lipid profile, and steroids and other medications usage.

Methods: Thirty systemic sclerosis (SSc) patients and twenty healthy individuals were included as a control in this study. Non-invasive vascular tests including; carotid duplex scanning measuring internal and common carotid arteries intima-media thickness (IMT), and ankle brachial pressure index (ABPI) were performed. Traditional vascular risk factors as blood pressure, blood sugar, lipid profiles, steroids usage and other immunosuppressive medications were assessed.

Results: Mean IMT of carotid arteries was higher in SSc patients when compared with control group. Carotid plaques were found in 4 SSc patients. Mean IMT was correlated positively with patients' age, disease duration, systolic blood pressure, and dyslipidemia. ABPI was significantly lower in SSc patients when compared with controls. No difference was found between limited and diffuse disease subtypes in mean IMT, nor in mean ABPI. There was not any positive correlation between mean IMT and cumulative steroid dose or any other immunosuppressive intake.

Conclusion: Increased risk of subclinical vascular disease in SSc patients. Systolic blood pressure, adverse lipid profile, long disease duration and older age of patients were of the potential risk factors in SSc.

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Low back pain & the value proposition

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Low back pain is one of the most common health complaints, affecting eight out of ten people at some time in their lives. Further, LBP is identified as the number-one cause of disability worldwide. LBP is not only prevalent, but it has enormous economic consequences and current management practices have led to rising costs without evidence of improvement in the quality of care. A novel consideration to address this issue is the so-called value proposition where value is defined as health outcomes that matter to patients divided by cost of delivering these outcomes. Based on this concept, the most powerful strategy to reduce cost is improving patient-centered outcomes which can be realized with integrated practice units or coordinated team care. This strategy supports the creation of value by caring for a patient's condition over the full cycle of care, rather than by a single hospital stay, care site, specialty, or intervention. This can be achieved by tracking valid outcome measures that assess multi-dimensional outcomes that matter most to patients. In this model, collaboration of care between disciplines plays a role managing appropriate cases based on clinical needs and patient preferences. Adoption of the value proposition and organization around coordinated team-based care is an integral step for improving clinical outcomes and managing the cost of care.

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Combined effect of baclofen and acamprosate in experimental models of peripheral neuropathic pain in wistar rats

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Background & Aim: Neuropathic pain (NP) is defined as pain associated with damage or permanent alteration of the peripheral or central nervous system. Current drug treatment for the management of neuropathic pain associated with various adverse effects. The present study was designed to investigate the combined effect of acamprosate and baclofen in experimental model of peripheral neuropathic pain in wistar rats.

Material & Methods: Neuropathic pain was induced by chronic constriction injured (CCI) of sciatic nerve in rats. Acamprosate (100 and 200 mg/kg p.o) and baclofen (10 and 20 mg/kg p.o) was given in diverse groups for 14 days starting on 7th day post sciatic nerve ligation. Further combination of acamprosate (100 mg/kg p.o) and baclofen (10 mg/kg p.o) was also given to one group. On 1st, 3rd, 7th, 14th and 21st day behavioral parameters like mechanical allodynia and thermal hyperalgesia were assessed. Then animals were sacrificed on 22nd day and biochemical parameters (GSH, LPO, catalase, nitrite, SOD) were assessed.

Results: Ligation of sciatic nerve significantly induced mechanical allodynia and thermal hyperalgesia with increase in oxidative stress (increase in LPO and nitrite) and decline of anti-oxidant enzyme levels (catalase, SOD, GSH) in sciatic nerve homogenate. Acamprosate (100 and 200 mg/kg p.o) and baclofen (10 and 20 mg/kg p.o) attenuated all the behavioural and biochemical parameters alone and/or combination.

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The effect of standard pain assessment on pain and analgesic consumption amount in patients undergoing arthroscopic shoulder surgery

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Pain assessment has a key role in relief of the postoperative pain. In this study, we aimed to examine the effect of the standard pain assessment protocol (SPAP), which we developed based on acute pain guidelines, on pain level, and analgesic consumption. The study population consisted of a total of 101 patients who had arthroscopic shoulder surgery. The routine pain assessment was administered to the control group, while the SPAP was administered to the study group. The routine pain therapy of the clinic was administered to the subjects from both groups based on the pain assessment. Throughout the study, pain was assessed nearly two times more in the study group ($p < 0.001$) and the mean pain levels were lower at 8th-11th hours in the study group ($p < 0.001$). Pain assessment was not performed after 12th hour despite the severe pain in the control group, and, therefore, analgesia was administered at irregular intervals or was not administered at all. However, the hours of analgesic administration were found to be more regular according to the pain levels of the patients in the study group. In conclusion, the SPAP reduced the pain level by providing regular analgesia when used in combination with regular pain assessment. This article highlights the appropriate assessment for patients with surgical pain. In majority of literature on the subject, the authors emphasize the importance of standard pain assessment protocol to provide adequate pain relief.

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Inhibition effects of P2X receptor antagonists on ecto-nucleotidases responsible for tuning pain to analgesia in the nociceptive pathway

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Purinergic signaling is involved in pain generation and modulation in the nociceptive sensory nervous system. Adenosine triphosphate (ATP) induces pain via activation of ionotropic P2X receptors, while adenosine mediates anti-nociception via activation of metabotropic P1 receptors. ATP and adenosine signaling are modulated by functional activity of ecto-nucleotidases, which are the dominant enzymes responsible for extracellular ATP degradation and adenosine generation. Our previous work had demonstrated expression of ecto-nucleotidase NTPDase3 and CD73 in the trigeminal ganglia nociceptive neurons. In addition, we detected functional ecto-ATPase and ecto-AMPase activity within the trigeminal nociceptive pathway. These results indicate that NTPDase3 and/or CD73 may provide alternative targets for drug development for controlling dental orofacial pain. In this work, we tested if purinergic receptor blockers affect ecto-nucleotidase activities detected in trigeminal nociceptive nerves. Using enzymatic histochemistry, we found that an NTPDase3 inhibitor (PSB-06126) reduced ATP degradation in trigeminal ganglion neurons and their brainstem projections. We also found that a CD73 inhibitor (adenosine 5'-(α,β -methylene) diphosphate) reduced adenosine generation in trigeminal ganglion neurons and their brainstem projections. Furthermore, we confirmed that both PSB-06126 and adenosine 5'-(α,β -methylene) diphosphate reduced ATP degradation and adenosine generation, respectively, in the outermost layer of the trigeminal sub-nucleus caudalis in the brain stem, which corresponds to the spinal cord dorsal horn nociceptive region. Effects of P2X receptor blockers (A740003, A804598, NF110) on ecto-nucleotidase activities within the trigeminal nociceptive pathway were also detected. Our results provide evidence to support the existence of ecto-nucleotidase NTPDase3 and CD73 activities within the trigeminal nociceptive pathway. Our results also highlight the potential role of agents that affect the purinergic signaling in pain signal generation and modulation by manipulation of ecto-nucleotidase activities within the trigeminal nociceptive pathway.

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