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Proceedings of the

Roma Pain Days (#RPD5) Hybrid Congress

April 10-12, 2025

Congress Center
Shangri-La Hotel
Rome, Italy

Introduction

You are kindly invited to the **Roma Pain Days 2025 (#RPD5)**, a congress that is increasingly appreciated and has become a well-established cultural and educational tradition. After the success of the last edition, which attracted around 2000 participants, the **Fondazione Paolo Procacci** Executive Board has organized it again. The event is on April 10-12, 2025, at the new venue, the Shangri-La Hotel. As with previous editions, it will be a hybrid event, ensuring professional growth opportunities for colleagues who are unable to attend in person in Rome.

The scientific program will be truly intriguing. One of the Congress Center rooms will be fully dedicated to **"Meet-the-Expert"** (MtE) sessions. During these sessions, a Faculty Member will provide a presentation and engage participants in discussion to clarify complex concepts. This format will make the congress more interactive, allowing the audience to actively participate in disseminating updated scientific knowledge. The "Experts" involved will be leading figures recognized internationally for the impact of their research. The Scientific Program Committee (SPC) is confident that this initiative will be highly appreciated by both in-person and online participants. The Fondazione Paolo Procacci is delighted to offer an optimal platform for open discussion, enabling colleagues to engage with real experts and acquire knowledge to enhance their clinical skills.

As in previous editions, the auditorium will be partially dedicated to **sponsored sessions**. These sessions are vital for the ethical dissemination of essential messages related to improved therapy. The program promises to be engaging, as it has been in the past, and the organizers are confident in the scientific success of the congress.

Fondazione Paolo Procacci is grateful to all the Members of the Scientific Program Committee (SPC), the Local Organizing Committee (LOC), and the international network that supports this initiative, with special thanks to all our Sponsors. Their support makes the dissemination of new scientific advancements in Pain Medicine much easier.

We are excited to meet you, whether in person or online, at #RPD5.

Giustino Varrassi
*President of **Fondazione Paolo Procacci**, Rome, Italy*

Roma Pain Days APRIL [10-12, 2025]

THE IMPACT OF VIRTUAL REALITY (VR) ON PAIN MANAGEMENT IN THE EMERGENCY DEPARTMENT: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: In recent years, virtual reality (VR) has emerged as a practical distraction approach for pain relief, especially in children and adolescents. However, little is known about the efficacy of VR in the ED. Therefore, the current study investigated the effect of VR on pain management in adult and pediatric patients in the ED.

Methods: We comprehensively searched CENTRAL, Google Scholar, PubMed, and MEDLINE databases for all studies published until May 2024 and evaluated the efficacy of VR in reducing pain intensity among patients in the ED (Figure 1). A random-effects model meta-analysis was used to summarize mean differences (MD) and their corresponding 95% confidence intervals (CI). Moreover, methodological quality appraisal was conducted using the Newcastle Ottawa Scale for non-randomized studies and Cochrane's risk of bias tool for randomized trials (Figure 2).

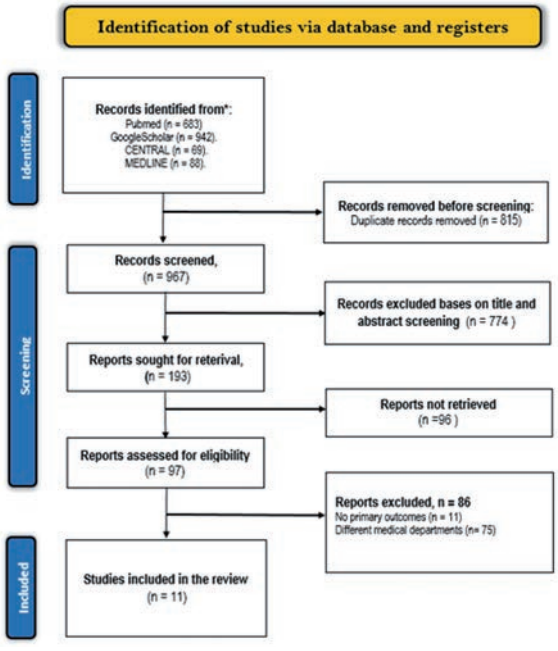

Figure 1.

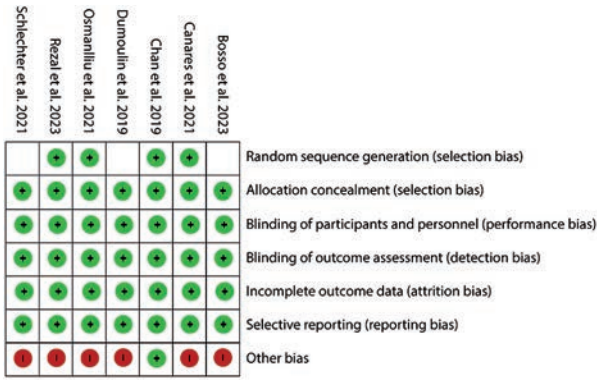

Figure 2.

Results: Eleven studies with 1322 patients were included in this review article. The pooled data from these studies demonstrated a significant reduction in pain scores with the use of VR (MD: -1.87; p<0.00001). Furthermore, subgroup analyses showed consistent pain reduction with the use of VR across adult and pediatric patients (MD: -1.76; p=0.01 and MD: -1.82; p=0.0006, respectively). Similarly, significant pain reduction was observed in patients undergoing needle-related procedures, minor medical procedures, and those with acute pain unrelated to medical procedures (MD: -1.82; p=0.0006, MD: -3.08; p=0.04, and MD: -1.02; p=0.009, respectively).

Conclusions: Overall, VR offers effective pain management in adults and pediatric patients with non-procedural acute pain and those undergoing painful procedures in the ED.

STUDY OF PAIN TYPES IN DIFFUSE CONNECTIVE TISSUE DISEASES

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Introduction: Patients with diffuse connective tissue diseases (DCTDs) frequently experience chronic pain syndrome. Identifying the type of pain can significantly influence treatment choices, not only for pain relief but also for the use of disease-modifying antirheumatic drugs (DMARDs). The aim - to investigate the prevalence of the three main types of chronic pain syndrome - nociceptive, neuropathic, and nociplastic in patients with DCTDs.

Methods: The study included 30 patients each with rheumatoid arthritis (RA), systemic lupus erythematosus (SLE), systemic sclerosis (SSc), and Sjögren's syndrome (SS), matched for age, sex, disease activity, and disease duration. Pain type assessment involved the following tools and methods: number of tender and swollen joints, disease activity scores, Pain assessment (SOCRATES), Pain questionnaire (Pain Detect), Widespread

Pain Index, Central Sensitization Inventory, Exclusion of overlapping pain conditions, musculoskeletal ultrasound examination, electroneuromyography, neurological consultation.
Results: Isolated nociceptive pain was confirmed in 16 of patients with RA, 7 with SLE, 9 with SSc, and 11 with SS. Neuropathic pain was diagnosed in 6 patients with RA, 4 with SLE, 6 with SSc, and 2 with SS. Nociplastic pain was observed in 4 patients with RA, 10 with SLE, 7 with SSc, and 6 with SS. Mixed pain was recorded in 4 patients with RA, 9 each with SLE and SSc, and 11 with SS.
Conclusions: The study highlights the presence of various pain types in patients with DCTDs, with significant prevalence of nociplastic and mixed pain. This underscores the need for comprehensive pain management strategies in these patients.

THERAPEUTIC POTENTIAL AND CHALLENGES OF CANNABIS IN CHRONIC NON-CANCER PAIN MANAGEMENT: A COMPREHENSIVE REVIEW

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Introduction: Chronic non-cancer pain (CNCP), defined as pain lasting beyond three months, adversely affects quality of life and poses significant challenges for effective management. Cannabis has emerged as a potential therapeutic option due to the analgesic properties of its active compounds, Delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD). However, its use is controversial due to associated psychoactive effects, dependency risks, and varying legal frameworks. This review aims to evaluate the role of cannabis in CNCP management, focusing on its mechanisms of action, therapeutic benefits, adverse effects, modes of administration, and patient-reported outcomes. The review also explores gaps in current knowledge and provides recommendations for future research and clinical practice.
Methods: A narrative review was conducted using a comprehensive literature search across databases, including PubMed, Scopus, and Embase. The review adhered to the Scale for the Assessment of Narrative Review Articles (SANRA) for methodological rigor, selecting peer-reviewed studies relevant to cannabis and CNCP management.
Results: THC acts primarily through CB1 receptor activation to block nociceptive stimuli, while CBD exhibits anti-inflammatory and antipsychotic effects. Inhalation methods provide rapid relief but pose respiratory risks, whereas oral administration avoids these risks but results in delayed effects. Short-term benefits include pain relief and reduced opioid usage, though evidence for long-term efficacy remains inconclusive. Adverse effects range from cognitive and psychomotor impairments to dependency and potential exacerbation of psychiatric conditions. Legalization in some jurisdictions correlates with reduced opioid-related mortality but raises challenges in regulation and clinical practice.
Conclusions: Cannabis demonstrates promise as an adjunctive treatment for CNCP, offering potential benefits in pain relief and quality of life improvement. However, risks of dependency, adverse effects, and inconsistent regulatory policies necessitate cautious implementation. Further high-quality, long-term clinical trials are essential to establish optimal dosing, safety profiles, and comprehensive guidelines for its use in CNCP management.

INTRANASAL SPHENOPALATINE GANGLION BLOCK AND DRUG-RESISTANT CLUSTER HEADACHE: TWO CASE REPORTS

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Introduction: Drug-resistant cluster headache is a serious and highly disabling condition considered as one of the worst pains known to man that significantly impacts patients' quality of life. Sphenopalatine ganglion (SPG) plays a pivotal role in cranial autonomic symptoms associated with headaches. Many mostly invasive approaches for ganglion stimulation have been described to reduce or eliminate this form of headache. The intranasal approach to SPG is a minimally invasive method, easy to perform, which has demonstrated benefits comparable to more invasive methods in stimulating the ganglion (Figure 1). We report the case of two patients with drug-resistant cluster headache who underwent intranasal blockade of the sphenopalatine ganglion.

Figure 1.

Methods: Two patients suffering from drug-resistant cluster headache received SPG block using the Tx360 nasal applicator in order to deliver 0.3 mL of ropivacaine 0.5% bilaterally once a week for three weeks. MIDAS, HIT-6 and CHIQ questionnaires were administered before and one month after the procedure.
Results: Before the procedure, MIDAS score were respectively 230 and 375, HIT-6 score were respectively 74 and 72, CHIQ score were respectively 37 and 35. One month after single treatment MIDAS score were 0, HIT-6 score were 38 and 36, respectively , CHIQ score were 0. These patients are still in follow up.
Conclusions: Transnasal blockade of the SPG may constitute

an easy, rapid, safe and efficient treatment of cluster headache. Further relative double-blind, randomized studies are required in order to draw solid conclusions.

SEXUALITY ASSESSMENT IN OVERWEIGHT AND OBESE WOMEN

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Introduction: Female sexuality is an essential part of overall health, influenced by various physiological, emotional, and psychological factors. Assessing sexual function in women is complex due to its links to other health elements. The study aimed to evaluate sexuality in overweight and obese women by comparing them to a control group of normal-weight women and to identify factors associated with sexual dysfunction (SD).
Methods: This case-control study was conducted at Taher Sfar University Hospital, Mahdia, from May to July 2023. It included 78 women: Forty-one were overweight or obese and thirty-seven had normal weight. Sexual function and quality of life were assessed using the Arabic version of the Female Sexual Function Index (FSFI) and the Impact of Weight on Quality of Life-Lite (IWQol-Lite) questionnaire.
Results: The study found that 48.78% of overweight and obese women had SD, with a mean FSFI score of 21.09, compared to 21.62% of normal-weight women, who had a mean FSFI score of 26.62. The IWQol-Lite score for overweight and obese women was 10.44. The analytical study revealed a statistically significant association between the ArFSFI total score and the age, BMI, urban origin, and level of education of these women ($p<0.001$). Also, women with no medical history, who had no children and were not menopausal ($p<0.001$), who had a better sexual QOL were those with the highest ArFSFI score.
Conclusions: Obesity negatively affects female sexual function. This highlights the importance of promoting healthy lifestyles to reduce obesity and improve sexual health outcomes for women.

SEXUAL QUALITY OF LIFE IN OVERWEIGHT AND OBESE WOMEN

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Introduction: Sexual satisfaction is influenced by physiological, emotional, and psychological factors in female sexuality, which is a crucial aspect of overall health and well-being. Obesity in women is associated with sexual dysfunction (SD), which affects quality of life (QoL). This study aims to assess sexual QoL in overweight and obese women compared to a control group and identify factors associated with sexual QoL.
Methods: A three-month case-control study was conducted at the Taher Sfar University Hospital in Mahdia. It involved overweight, obese, and control women. Sexual QoL was evaluated using the sexual domain of the Impact of Weight on Quality of Life-Lite (IWQol-Lite) questionnaire.
Results: Seventy-eight participants were included, of whom forty-one were overweight/obese and thirty-seven were normal weight. The average age of overweight/obese women was 46.1 years, with a BMI of 30.25 kg/m². The IWQol-Lite score for overweight/obese women was 10.44, with the most impacted component being "I feel uncomfortable with sexual activity because of my weight". The analytical study showed that women's age, BMI, urban origin, professional status, and level of education were associated with the "sexual life" section of the IWQol-Lite questionnaire ($p<0.001$). Also, women who had no medical history, who had no children ($p<0.001$), who were not yet menopausal ($p=0.003$), and who did not have a SD were those who had better sexual QOL.
Conclusions: Obesity significantly impacts sexual QoL. Healthcare professionals should be aware of this issue and offer tailored psychosexual counseling.

THE IMPACT OF MUSCULOSKELETAL DISORDERS ON QUALITY OF LIFE AMONG CAREGIVERS OF MOTOR-IMPAIRED PATIENTS

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Introduction: Caregivers appear to be at increased risk of musculoskeletal disorders (MSD), perhaps due to caregiving duties. This study aimed to evaluate the impact of MSD on the quality of life (QOL) among spousal caregivers of motor-impaired patients.
Methods: The study involved spousal caregivers with chronic motor disabilities. MSD were evaluated by the standardized Nordic Musculoskeletal (NMQ). Pain was evaluated according to the Visual Analog Scale (VAS). QOL and the level of burden were assessed according to the Short Form Health Survey (SF-36) and the Zarit scale (ZS); respectively.
Results:A total of 142 wife-caregivers were recruited with a mean age of 53.09±11.73. The average age of impaired patients was 58.77±11.35 years. The average duration of caregiver roles was 5.42±7.56 years and the average weekly time spent on caregiving was 35 hours/week. In our study, 101 (71,13%) wife-caregivers reported having experienced a MSD. Pain was severe (VAS>7) in 20% of cases. The majority of wives (83,3%) had a poor QOL (SF-36<66,7) with a mean score of 43.88±20.8 and 68,3% were classified as "high burden" caregivers (ZS>41).A significant association was observed between pain and functional status in impaired patients ($p<0,001$), number of weekly hours spent in caregiving ($p=0,023$), caregiving burden ($p< 0.001$), and poor QOL.
Conclusions: Findings suggest a high prevalence of pain and MSD among caregivers of motor-impaired patients leading to poor QOL.

SHORT-WAVE DIATHERMY IN LOW BACK PAIN TREATMENT: ARE THE QUICK RESULTS ALSO LONG-LASTING?

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Introduction: Low back pain (LBP) is a prevalent condition with significant socio-economic consequences. Short-wave diathermy (SWD) is a therapeutic modality commonly used for pain relief in musculoskeletal disorders, including LBP. While SWD has been reported to provide quick pain relief, the long-term effectiveness remains unclear. This study aims to evaluate the immediate and prolonged effects of SWD in the treatment of LBP.
Methods: A randomized controlled trial was conducted with 60 participants diagnosed with chronic LBP. The experimental group received SWD therapy, while the control group received placebo treatment for four weeks. Pain intensity, functional disability, and range of motion were assessed before, immediately after, and one-month post-treatment using standardized scales and physical assessments.
Results: The results indicated significant reduction in pain and improvement in functional mobility in the SWD group compared to the control group immediately after treatment. However, at one month follow-up, the benefits were largely diminished, with no significant differences observed between the two groups.
Conclusions: Short-wave diathermy provides effective short-term pain relief and functional improvement for individuals with low back pain, but these effects are not sustained in the long term. Further research is needed to explore adjunctive treatments or alternative therapies that may offer longer-lasting relief for chronic LBP.

LOW FREQUENCY ELECTRIC STIMULATION (INTERFERENTIAL THERAPY - IFT) IN LOW BACK PAIN: MUSCLE RESTART, LEADING TO A DECREASE IN PAIN DOMINANCE

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Introduction: Low back pain (LBP) is a common and disabling condition that affects millions globally. Interferential therapy (IFT), a form of low-frequency electrical stimulation, is increasingly used to manage LBP by targeting muscle function and pain modulation. The aim of this study is to assess the effects of IFT on muscle activation and pain dominance in individuals with chronic LBP.
Methods: This randomized controlled trial involved 50 participants with chronic LBP. The experimental group received IFT for 20 minutes, three times a week for four weeks, while the control group underwent a placebo treatment. Pain intensity was measured using the Visual Analog Scale (VAS), and muscle activation was assessed using electromyography (EMG) before and after treatment, as well as one-month post-treatment.
Results: The IFT group showed significant reductions in pain intensity and improvements in muscle activation compared to the control group. After the treatment period, participants in the IFT group demonstrated enhanced muscle function and a noticeable decrease in pain dominance. At the one-month follow-up, the pain reduction and muscle function improvement were still significantly better than in the control group.
Conclusions: Interferential therapy effectively aids in muscle activation and pain reduction in individuals with chronic low back pain. The treatment appears to lead to a decrease in pain dominance, promoting long-term improvements in pain management and muscle function. IFT can be considered a beneficial adjunctive therapy in the rehabilitation of LBP.

ULTRAVIOLET LIGHT THERAPY IN LOW BACK PAIN: ANALGESIC ANTI-INFLAMMATORY SUNBURN AS A MEDICAL PRESCRIPTION

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Introduction: Low back pain (LBP) is a prevalent and debilitating condition that often requires multiple forms of treatment. Ultraviolet (UV) light therapy has gained attention for its potential analgesic and anti-inflammatory effects. This study investigates the effectiveness of UV light therapy in managing LBP, assessing pain relief and inflammatory responses, with sunburn-like effects serving as a therapeutic mechanism.
Methods: A randomized controlled trial was conducted with 100 participants suffering from chronic LBP. Participants were assigned to two groups: one receiving UV light therapy (n=50) and the other a placebo (n=50). The UV therapy sessions were administered twice a week for four weeks. Pain was assessed using the Visual Analog Scale (VAS), and inflammatory markers such as C-reactive protein (CRP) were measured before and after treatment.
Results: The UV therapy group reported a significant reduction in pain, with a mean decrease in VAS scores from 7.5 to 3.2 ($p<0.01$), corresponding to a 57% reduction in pain intensity. Inflammatory markers showed a 45% reduction in CRP levels, from 12.5 mg/L to 6.9 mg/L ($p<0.05$) in the treatment group. In comparison, the placebo group experienced only a 10% decrease in VAS scores and a 5% reduction in CRP levels.
Conclusions: UV light therapy demonstrated a significant reduction in both pain (57%) and inflammation (45%) in individuals with chronic LBP. These results suggest UV light therapy as a promising non-invasive adjunct for LBP management. Further research is required to optimize treatment protocols and evaluate long-term effects.

REGIONAL *VERSUS* SYSTEMIC ANALGESIA FOR POSTOPERATIVE PAIN IN BRAIN TUMOR SURGERY

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Introduction: Postoperative pain is common in the first 24 hours after brain surgery and is often undertreated for the fear of masking neurosurgical pathology or depressing ventilation [1-3]. The aim of our study was to compare regional analgesia *versus* systemic analgesia and its effect on postoperative pain reduction in patients undergoing craniotomy for brain tumor surgery.
Methods: The study included 141 adult craniotomy patients that were randomly separated into three equal groups (Table 1). A group with scalp nerve blockade (B) and wound infiltration (I) received 0.25% bupivacaine combined with 1% lido-

caine and 1:200,000 epinephrine. 1g of Paracetamol and 2mg/kg Ketoprofen were administered intravenously after skin closure in a group with systemic analgesia (S). Pain intensity was evaluated after 1, 3, 6, and 24h postoperatively using a visual analogue scale. The amount of rescue analgesia and the duration for its first requirement were recorded.

Results: Significantly lower pain scores were observed in the group with a scalp nerve blockade compared to the group with systemic analgesia or wound infiltration after 24h, $p<0.05$. Regional anesthesia ensured a stable analgesic effect for all 24h (Table 2). Fewer rescue analgesics were required in group B and I compared to patients in group S, p=0.001. Data is presented in percentages in Figure 1.

Conclusions: The results of our study show that most patients experience pain in the early postsurgical hours. Scalp nerve blockade significantly reduced the incidence and severity of pain after a craniotomy and the amount of rescue analgesia used in this group of patients in the first 24 hours after craniotomy.

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Table 1.

Table 1. Patients' demographic characteristics

	Wound infiltration (n=47)	Scalp nerve blocade (n=47)	Systemic analgesia (n=47)
Male/female	13/34	15/32	16/31
Mean age (years)	59.1	56.1	56.4
Body Mass Index (kg/m2)	26.7	26.5	25.1
ASA class 1	4	3	3
ASA class 2	24	30	28
ASA class 3	19	14	16

Table 2.

Table 2. Median pain scores between the groups

Postoperative hours	VAS Median [25-75%], mm			
	I	B	S	[1]p
1	8.0[3.0-38.0]*	5.0[0-16.25]**	37.0[11.0-60.0]*,**,+,++	p<0.001;*,**p<0.05
3	5.0[2.0-22.0]*	8.0[3.0-20.0]**	16.0[5.0-40.0]*,**,+	p=0.015;*,**p<0.05
6	12.0[2.5-22.5]	8.5[1.75-16.0]**	16.0[4.25-32.5]**,++	p=0.068;** p<0.05
24	12.5[5.75-25.0]*	8.0[0-11.0]*,**	19.5[5.0-49.25]**	p=0.002;*,**p<0.05
[2]p	>0.05	>0.05	+p=0.02; ++p=0.009	

Data are median with interquartile range. [1]p - difference in pain scores between groups; [2]p - difference in pain scores in 24 hours.

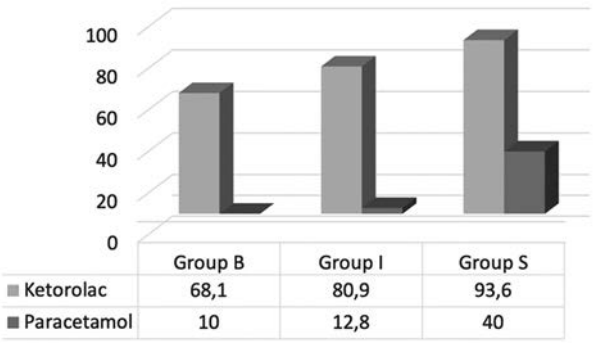

Figure 1. Postoperative analgesics requirements in study groups.

SUSTAINED RELIEF FROM LUMBAR RADICULAR PAIN BY COMBINED EPIDURAL PULSED RADIOFREQUENCY AND ADHESIOLYSIS

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Introduction: When used alone, pulsed radiofrequency (PRF) of dorsal root ganglia (DRG) or epidural adhesiolysis (EA) produced partial relief from lumbar radicular pain (LRP). The aim of this prospective study was to evaluate the LRP relief efficacy of combined PRF and EA.

Methods: One hundred-six consenting patients (age 64.5±12.2) 52 female e 54 male underwent PRF and EA for chronic, intense LRP, unresponsive to conventional pharmacological treatments and epidural steroids. A multifunctional epidural electrocatheter (Pulstrode, Bioampere Research, Padua, Italy) was fluoroscopically guided through the sacral hjatus to the target DRG. After having obtained an overlap between electrically induced metameric paresthesias and pain (sensory threshold 0.2 - 0.5 V) a bipolar PRF was applied for 300 seconds on the target and on adjacent DRGs (2 Hz, temperature <42°C, target current intensity 100 mA, average voltage 70V). Then, EA was performed with 20 mg Triamcinolone and Ropivacaine 0,1% 10 mL solution injected at every stimulation sites.

Results: Out of 103 patients who completed the follow-up, 25 (24.3%) had a bad outcome (Pain Relief <50% and a reduction of less than 3 points on the NRS scale). PRF and EA reduced pain intensity on a 0-10 Numerical Rating Scale (from 8.0±0.8 at pretreatment to 3.2±2.3 and 3.2±2.7 at post-treatment month 6 and 12, $p<0.001$) and improved the functional status by the Oswestry Disability Index (from 46±26.6 at pretreatment to 25.0±12.6 and 24±16.5 at post-treatment month 6 and 12, $p<0.001$). Patients with previous spinal surgery, multilevel stenosis, bilateral radiculopathy had a higher percentage of failure than the average of all patients. Less important was the influence of age on the outcome. The only complication was intraoperative pain detected in 32 patients (31%). Five (4.7%) patients did not complete the procedure due to intolerable pain.

Conclusions: Combined epidural PRF and EA provided a fast and sustained improvement of LRP and function. More serious and extensive anatomical alterations and previous surgery negatively affect the result in a more important way than age.

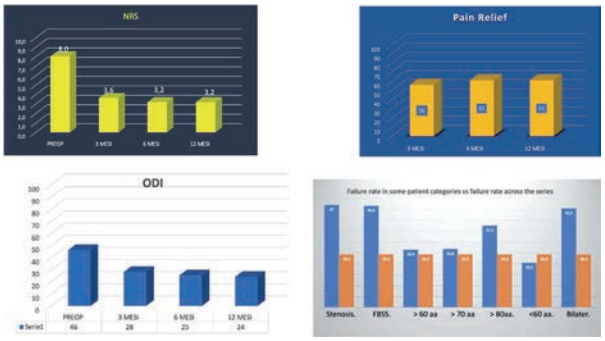

Figure 1.

BIPOLAR PULSED RADIOFREQUENCY AT MULTIPLE DORSAL ROOT GANGLIA ENHANCES LONG TERM RELIEF FROM LUMBAR RADICULAR PAIN COMPARED WITH MONOPOLAR PULSED RADIOFREQUENCY AT SINGLE DORSAL ROOT GANGLIA

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Introduction: Pulsed radiofrequency (PRF) is usually performed at a single, target dorsal root ganglion (DRG) with a single-pole current with a fixed voltage at 45 V. However, in a large subset of patients, unilateral lumbar radicular pain (LRP) is contributed by compression or abnormalities of adjacent nerve roots. The aim of this study was to evaluate the efficacy of high Voltage-Bipolar-PRF at multiple DRGs *versus* Fixed-Voltage PRF at single DRG.
Methods: Seventy patients with chronic LRP unresponsive to conventional treatments, were randomized in two groups to undergo PRF; Group 1 Fixed Voltage Monopolar-PRF at 45 V and Group 2: Bipolar-PRF at variable Voltage and target current intensity 100 mA. In both groups a multifunctional epidural catheter (Pulstrode, Bioampere Research Padua, Italy) was guided in the epidural space through the sacral hiatus to the target DRG in Group 1 and also at adjacent DRGs in Group 2. After having obtained an overlap between electrically induced metameric paresthesia and pain (sensory threshold 0.2 - 0.5 V) PRF was applied either only on target DRG in Group 1 (stimulation time 300 sec, 2Hz Monopolar-PRF at 45 V) or also on adjacent DRGs in Group 2 (stimulation time 300 sec, 2Hz; target current intensity 100 mA and temperature <42°C).
Results: In comparison to single DRG PRF, PRF at multiple DRGs yielded to larger improvements of LRP and LRP-related disability (0-10 Numerical Rating Scale: from 8.2±0.8 and 7.9±1.1 at pretreatment to 4.6±2.6 and 3.4±2.1 at post-treatment month 6 and to 6.1±2.2 and 3.6±2.0 at post-treatment month 12; Oswestry Disability Index: from 50.4±4.7 and 51.7±6.4 at pretreatment to 37.4±4.2 and 19.4±3.9 at post-treatment month 6 and to 42.4±5.3 and 18.3±4.5 at post-treatment month 12.
Conclusions: Multiple DRG Bipolar PRF at high voltage produced higher and more long term pain relief and functional improvement than single DRG Monopolar PRF at fixed voltage.

Table 1.

	Group 1	Group 2	p-value
Patients' number	35	35	ns
Average voltage (V)	42 8	72±14	<0.001
Patients with pain relief >50% at 1 year	16 (46)	26 (74)	0.04
NRS at 1 year	6.1±2.2	3.6±2.0	<0.001
Oswestry score at 1 year	42.4±5.3%	18.3±4.5%	<0.001

PULSED RADIOFREQUENCY ON DORSAL ROOT GANGLIA IN LUMBAR RADICULAR PAIN IMPROVES THE EFFECTIVENESS OF EPIDURAL ADHESIOLYSIS: A RANDOMIZED DOUBLE-BLIND STUDY

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Introduction: Epidural adhesiolysis (EA) and Pulsed Radiofrequency (PRF) on Dorsal Root Ganglion (DRG) are usually performed in the treatment of Lumbar Radicular Pain (LRP). However, while the use of EA is supported by good evidence, the advantage of also performing PRF on the DRG is rather uncertain. The aim of this study was to evaluate the efficacy of EA + PRF at multiple DRGs *versus* EA + Sham stimulation in LRP.
Methods: Fifty-eight patients with chronic single side LRP unresponsive to conventional treatments, was randomized in two groups: PRF-GROUP 1: EA+PRF and Sham-GROUP 2: EA + Sham. Nine patients have not completed 12-month follow-up. A multifunctional epidural electrocatheter (Pulstrode, Bioampere Research, Padua, Italy) was fluoroscopically guided through sacral hjatus to DRGs in lumbar foramina. After having obtained an overlap between electrically induced metameric paresthesia and pain (sensory threshold 0.2 - 0.5 V), in PRF-GROUP 1 (25 patients) an EA and BIPOLAR-PRF stimulation procedure were performed on the target DRG and adjacent DRG (stimulation time 300 sec, 2Hz; target current intensity 100 mA and temperature <42°C). In Sham-Group 2 (24 patients), EA was paired with sham stimulation on the target DRG. Follow-up at 3, 6, 12 months with NRS Scale, Oswestry Index and Pain Relief was performed by blind examiners.
Results: In PRF-Group 1, five patients (20%) had a negative outcome (pain relief <50% and a reduction of less than 3 points on the NRS scale) compared to nine patients (37,5%) in Sham-Group 2 (p<0.001). In PRF-Group 1 there is a constant and more important reduction in the NRS Scale, in the pain relief and in the ODI-Ratio. The difference in outcome is greater after 12 months than after 3-6 months. In Group 1 NRS decrease from 7.5±0.8 at pretreatment to 2.9±1.8 and 2.7±2.0 at post-treatment month3 and 12; in Sham-Group 2 NRS decrease from 7.9±0.9 at pretreatment to 3.8±2.3 and 4.8±2.7 at post-treatment month 3 and 12 (p<0.001).
Conclusions: The PRF of the DRG seems to improve the effectiveness of EA and prolong the relief of pain over time.

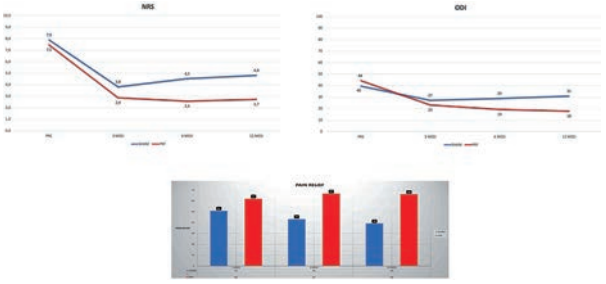

Figure 1.

A CASE OF SEVERE INTRACRANIAL HYPOTENSION WITH ATYPICAL SYMPTOMS SUCCESSFUL TREATED WITH A SINGLE CERVICAL EPIDURAL BLOOD PATCH

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Introduction: Spontaneous intracranial hypotension (SIH) is associated with cerebrospinal fluid (CSF) leakage and presents with orthostatic headaches. Cases with atypical features and no leak evidence present diagnostic and management challenges.

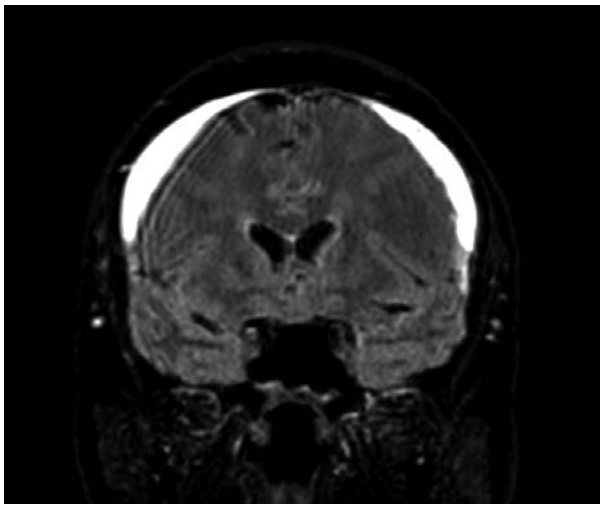

Figure 1. Coronal T2-FLAIR MRI scan showing bilateral subdural collections.

Methods: A 62-year-old male was admitted with orthostatic headache associated with tinnitus, dysarthria, and confusion, all of which promptly improved in the supine position. The patient reported an accidental fall with minor facial trauma two weeks before the onset of symptoms. Initial cranial and spinal MRI showed bilateral subdural collections (Figure 1), brainstem compression, and partial herniation of the cerebellar tonsils, suggestive of cerebral hypotension without any spinal leak. The neurosurgeon suggested an epidural blood patch. In our pain clinic, a lumbar epidural blood patch (EBP) with 20 ml of autologous blood was performed at L2L3, with a C arm X-ray to verify the correct administration in the epidural space, but it did not improve the symptoms. A second MRI performed five days later showed no radiological improvement, resulting in a second indication of EBP. Although bilateral myelography revealed no evidence of an active CSF leak, and considering the reported facial trauma, a cervical distraction was suspected, and a 10 ml cervical blood patch was performed (Figure 2) with full symptom resolution.

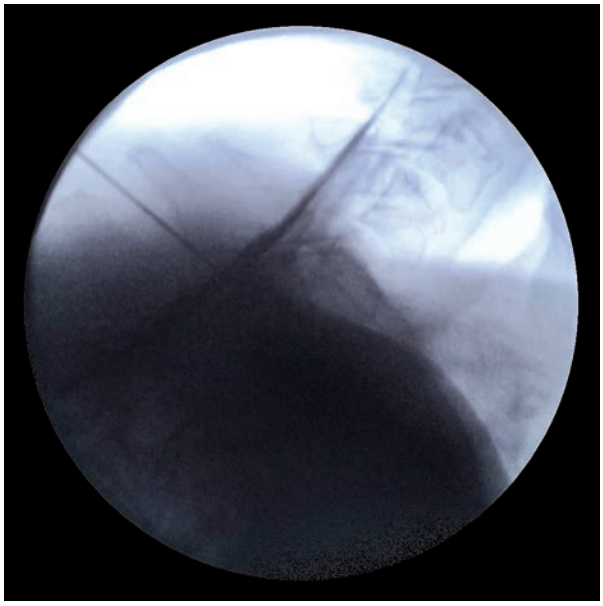

Figure 2. Fluoroscopic image demonstrating the epidural blood patch (EBP) procedure. Contrast medium outlines the spread of autologous blood within the epidural space, ensuring accurate placement.

Results: The cervical EBP resulted in complete symptom regression, supporting the theory of post-traumatic intracranial hypotension. No symptoms recurred at 3-month follow-up.
Conclusions: This case highlights the diagnostic complexity of SIH, especially in cases with atypical neurological symptoms and no radiologically detectable leak. Trauma may contribute to SIH by reducing CSF volume, leading to brain sagging and subdural hematoma formation.

A NOVEL ULTRASOUND-GUIDED PERINEURAL DEXTROSE INJECTION FOR PLANTAR FASCIITIS: A CASE SERIES

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Introduction: Treatment options of plantar fasciitis are often unsatisfactory. We evaluated an unreported treatment approach: the efficacy and patient-reported outcomes of ultrasound-guided perineural dextrose 5% injection for this condition.
Cases: Two patients - a 52-year-old woman and a 60-year-old overweight man - presented with left heel pain lasting over three months. Both had previously tried analgesics and other treatments, including a landmark-guided steroid injection for the woman and acupuncture at heel for the man, without sustained improvement. They experienced significant discomfort with prior interventions. Plain radiography revealed plantar calcaneal enthesophytes (Figure 1 a,b), while ultrasound confirmed plantar fasciitis through increased thickness of the plantar fascia, disruption of the compact fibular pattern, and increased hypoechogenicity (Figure 2 a,b). Seeking a less painful and more durable treatment, both patients underwent a three-milliliter out-of-plane ultrasound-guided dextrose 5% injection, using a 27-gauge half-inch needle, perineural to the tibial nerve, posterior to medial malleolus (Figure 3 a,b). Two sessions were conducted, one week apart, resulting in a significant pain reduction, with visual analog scale scores improving from 6/10 to 1/10 for the woman and from 7/10 to 1/10 for the man. Both patients reported greater satisfaction due to reduced pain during the injection and one-month follow-up indicated no recurrence of pain.

Figure 1. Plain X-ray in woman (a) and man (b).

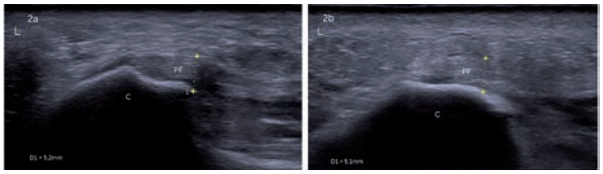

Figure 2. Ultrasound of left plantar fascia in woman (a) and man (b). L, left; C, calcaneus; PF, plantar fascia.

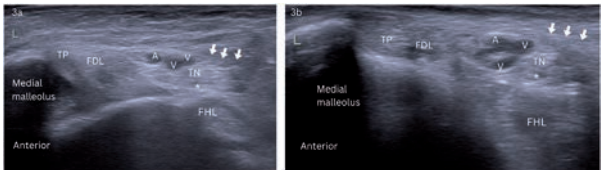

Figure 3. Out-of-plane ultrasound-guided dextrose 5% injection perineural to tibial nerve in woman (a) and man (b). L, left; TP, tibialis posterior; FDL, flexor digitorum longus; FHL, flexor hallucis longus; A, artery; V, vein; TN, tibialis nerve; *, perineural dextrose 5% injectate; arrow, flexor retinaculum.

Conclusions: Ultrasound-guided perineural dextrose 5% injection appears to be an effective and less painful treatment for plantar fasciitis. Larger studies with longer follow-up are necessary to further evaluate its efficacy and safety.

ULTRASOUND GUIDED OXYGEN OZONE THERAPY IN THE TREATMENT OF FROZEN SHOULDER: A CASE REPORT

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Introduction: Frozen shoulder is an inflammatory condition causing pain, reduced range of motion (ROM), and limitations in daily activities. This study aims to evaluate the effectiveness of ultrasound-guided oxygen-ozone therapy.
Methods: A 52-year-old woman with type 2 diabetes and hypercholesterolemia, suffered from left frozen shoulder for two months. She was treated with oral anti-inflammatory drugs, Tecar therapy, corticosteroid injections, hyaluronic acid injections, and ongoing rehabilitation with minimal improvement. After ultrasound assessment to rule out other conditions, she received a single injection of 20 ml of oxygen-ozone at 20 mcg/ml into the left glenohumeral joint. She completed 3 weeks of physiotherapy and was evaluated at three time points: T0 (pre-injection), T1 (post-injection), T2 (1 week), and T3 (4 weeks). ROM and pain were assessed using the NRS (Numeric Rating Scale) and SPADI (Shoulder Pain and Disability Index).
Results: At T0, the patient had significant ROM limitation (2/3 reduced) and pain (NRS=8, SPADI=129). At T1, ROM improved with about 1/3 limitation (NRS=7). At T2, ROM further improved with 1/4 limitation and significantly reduced pain (NRS=2-3, SPADI=29). At T3, ROM was limited only in extreme ranges with minimal pain (NRS=1, SPADI=5) (Figures 1 and 2).

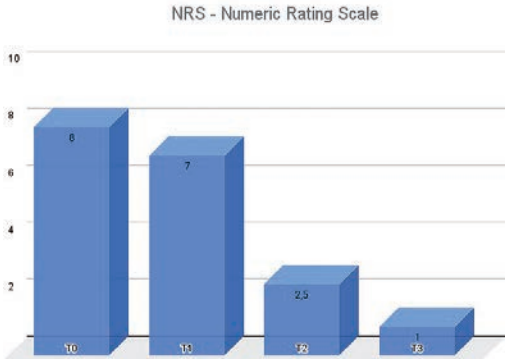

Figure 1.

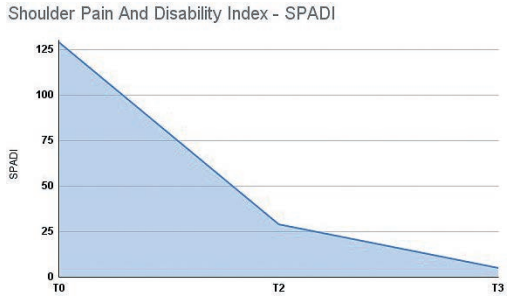

Figure 2.

Conclusions: Oxygen-ozone injection combined with physiotherapy appears effective in reducing symptoms and improving joint function in frozen shoulder.

HYALURONIC ACID: UNLOCKING ITS FULL POTENTIAL IN MEDICAL APPLICATIONS

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Hyaluronic acid (HA) is a naturally occurring polysaccharide with unique physicochemical properties, making it essential for various physiological and pathological processes. Its major therapeutic applications are in rheumatic diseases such as osteoarthritis and rheumatoid arthritis, as well as in ophthalmology particularly for dry eye disease. Clinical trials have demonstrated HA effectiveness in pain management and joint protection, highlighting its role in potentially reducing reliance on non-steroidal anti-inflammatory drugs (NSAIDs). Additionally, HA-based drug delivery systems enhance bioavailability, prolong drug retention, and enable targeted delivery, improving NSAID efficacy. Growing interest also surrounds HA potential in neuropathic pain management, though further research is needed. As HA applications continue to expand, a comprehensive understanding of its medical uses can serve as a guideline for clinicians, summarizing current findings and highlighting future research directions to optimize HA-based therapies in modern medicine.

ADVANCING PREVENTIVE MEDICINE: THE INTEGRATION OF NUTRACEUTICALS INTO CHRONIC PAIN MANAGEMENT

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Nutraceuticals supplements into clinical practice represents a promising approach in the management of chronic diseases, including chronic pain. Recent years have seen a surge in demand for nutraceuticals, positioning them as key contributors to modern and future healthcare. In this research we will analyze the current landscape of potential nutraceutical applications in chronic pain management and provide a classification of these substances along with their clinical applications. We will highlight their potential to shape innovative research directions and address pharmacological challenges in clinical use. Our aim is to provide evidence-based insights into the use of nutraceuticals as adjunctive therapies to improve patient outcomes and advance the field of preventive medicine.

CLINICAL OUTCOME OF DELTA-PEID FOR HIGHLY MIGRATED LUMBAR DISC HERNIATION: A CASE-MATCHED STUDY

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Introduction: This study aims to investigate the safety and feasibility of large-channel percutaneous endoscopic interlaminar discectomy (delta-PEID) in treating highly migrated-lumbar disc herniation (HM-LDH), and to compare the clinical outcome between delta-PEID and fenestration discectomy for the treatment of HM-LDH.
Methods: Patients who had undergone delta-PEID (group E) and fenestration discectomy (group F) for HM-LDH from January 2021 to July 2023 were enrolled. Radiological assessments, operation time, blood loss, length of stay, visual analog scale (VAS), Oswestry Disability Index (ODI), European Quality of Life-5 Dimensions (EQ-5D), and complications were evaluated.
Results: A total of 103 patients were included in this study, with 51 in group E and 52 in group F. At baseline, no significant differences were observed between the two groups in terms of age, sex, VAS, ODI and EQ-5D. The blood loss (19.8±7.6 ml *vs* 101.7±62.0 ml, p=0.004) and length of stay (2.5±0.7days *vs* 5.2±2.3days, p<0.05) were significantly lower in group E than in group F. Postoperatively, both groups showed significant improvement in VAS, ODI, and EQ-5D scores. There was a significant difference in self-care and usual activities of EQ-5D between the two groups. During 2-years of follow-up, each group has a case receiving reoperation due to recurrence of disc herniation. No neurological deficit was found in either group.
Conclusions: With both surgical techniques achieving favorable clinical outcomes for the treatment of HM-LDH, delta-PEID showed advantages in less intraoperative blood loss, a shorter postoperative length of stay, as well as a better quality of life postoperatively.

ANXIETY AND PAIN MANAGEMENT IN BURN TRAUMA INJURY PATIENTS

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Introduction: Pain management with both pharmacological and non-pharmacological approaches is important in the treatment of burn trauma.
Methods: Data collection took place at the adult part of Burn Department of the University Hospital of Kralovske Vinohrady from 2018 to 2021 year at the end of hospitalization (average days M=24.3, SD 35.1) after the approval of the ethics committee. Cognitive deficit, inability to understand Czech and severe psychiatric comorbidities were exclusion criteria. M.I.N.I. 6.000 neuropsychiatric interview, modul Generalised anxiety, was used to measure anxiety, VAS was used to measure pain intensity (VAS/I) and pain unpleasantness (VAS/U) and BSHS-B to measure burn heath related quality of live.
Results: N=292 patients with burns, TBSA% (M=9.8, SD=12.5, average age=46.65, SD 12.1) were included in the research study (70% of men). Patients who met generalized anxiety disorder (GAD) significantly differed in pain intensity (VAS/I M=4.8, SD 2.4, p=0.0037) and pain unpleasantness (VAS/U M=5.1, SD=2.9) from patients who did not meet GAD criteria (VAS/I M=1.4, SD 2.5, VAS/U M=2.8, SD 2.9, p=0.0107). Higher level of pain unpleasantness VAS/U predicts a lower value of BSHS-B quality of life (B=-0.14, SE=0.06, p=0.0276) in this group of patients.
Conclusions: As part of comprehensive care for patients with burn trauma, it is appropriate to manage anxiety and pain by psychotherapy.

ANESTHESIOLOGISTS' ATTITUDES TOWARDS ELEMENTS OF MULTIMODAL POSTOPERATIVE ANALGESIA

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Introduction: Multimodal analgesia is established method of postoperative pain management but physicians' individual attitudes are very important for implementation of it [1,2]. Aim of the study was to assess opinions and practices of anaesthesiologists in Lithuanian tertiary hospital on the use of systemic non-opioid analgesics, adjuvants, and regional analgesia for the relief of postoperative pain.
Methods: An anonymous questionnaire survey with bioethical approval (No. 2025-BEC2-0216) was distributed to all certified anaesthesiologists working at the Hospital of LUHS in February 2025. 18 questions included demographics and subjective opinions on the effectiveness and use of multimodal analgesia. Descriptive statistics and chi-square (χ^2) were used for analysis (statistical significance if p<0.05).
Results: The survey yielded 47 completed questionaires (response rate - 65%). 70,2% of respondents reported post-op-

erative pain management challenges in less than 20% of patients. 85,1% recognized epidural analgesia as highly effective, 66% used it in less than 25% of eligible patients. Peripheral nerve blocks were more frequently used - 75% applying them to over 76% of eligible patients. Both paracetamol and NSAIDs were widely considered effective for reducing overall opioid requirements ($p<0.001$) and prescribed to 76-100% of patients. Practitioners who believed that dexamethasone did not reduce opioid requirements were likely to hold the same view regarding magnesium sulphate, and vice versa ($p<0.001$). Magnesium sulphate, intravenous lidocaine and ketamine were administered to less than 25% of patients.

Conclusions: Most anaesthesiologists recognize the effectiveness of multimodal analgesia methods, such as epidural analgesia and peripheral nerve blocks, their use remains limited in clinical practice. While paracetamol and NSAIDs are widely prescribed to reduce opioid requirements, analgesic adjuvants are used infrequently.

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TRP-CHANNELS AND MIGRAINE: TRPM8 AND TRPV1 POLYMORPHISMS AS A NEW PREDICTING MARKER AND A PROMISING THERAPEUTIC TARGET

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Introduction: Migraine is a common neurological disorder that significantly impairs patients' quality of life [1]. Recent advances in understanding the role of the Transient Receptor Potential (TRP) channels family, in the pathogenesis of migraine have provided new insights into potential therapeutic approaches [2]. Genetic variations in TRP channel genes may significantly influence a person's susceptibility to migraine and the severity of its symptoms [3]. We conducted an analysis of current research on the role of TRP channel polymorphisms in migraine pathogenesis, aiming to evaluate their impact on the clinical phenotype of the disease and explore their potential therapeutic implications.

Methods: The narrative review includes the results of studies published in PubMed, Web of Science, and Scopus databases that focus on the study of genetic variations in TRP channels and their role in migraine. We included original research articles, meta-analyses, and systematic reviews for the period 2012-2024.

Results: A significant association has been identified between certain polymorphisms of TRP channels (especially rs10166942 [4], rs7577262 [5] and rs17862920 [6] in TRPM8, and rs222741 in TRPV1[7]) and the risk of migraine. The correlation of genetic variants with various clinical characteristics of the disease [8], including the frequency of attacks, the presence of aura and comorbid disorders [7], has been established.

Conclusions: TRP channel gene polymorphisms play a significant role in the pathogenesis of migraine and represent promising biomarkers for predicting the clinical course of the disease and personalizing treatment [9].

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THE GREEK REGISTRY ON CHRONIC PAIN AND PALLIATIVE CARE: OBJECTIVES AND METHODS

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Introduction: Chronic pain is a prevalent medical condition in the European Union (1), associated with a significant diagnostic odyssey (2), and the establishment of patient registries is increasingly important for research and clinical care. The Hellenic Society of Pain Management and Palliative Care developed Greece's first Neuropathic Pain registry (3) and now plans to develop a new registry focused on chronic pain and palliative care, aiming to enhance patient management, data collection, and research in Greece.

Methods: The new registry will be a prospective, observational database collecting real-world patient data, including adults diagnosed with chronic pain (neuropathic, nociceptive, mixed pain), as well as patients receiving palliative care. Data will be collected from multiple centers across Greece, covering demographic information, clinical characteristics, pain assessment scores, treatment strategies, and patient-reported outcomes. Standardized questionnaires and validated scales will ensure data consistency. Diagnoses will be classified using ICD-11 codes for standardized disease categorization and international comparability. Data analysis will include descriptive statistics, comparative analyses between pain subgroups, and longitudinal assessments of treatment responses.
Results: The registry is expected to enhance standardized classification of chronic pain and palliative care, facilitate precise epidemiological assessment, and provide insights into pain management effectiveness. It will also help identify trends in pain conditions across diverse patient populations, supporting personalized treatment strategies and healthcare policy planning.
Conclusions: The development of this registry, led by The Hellenic Society of Pain Management and Palliative Care, marks a significant advancement in understanding and managing chronic pain and palliative care in Greece.

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FU'S SUBCUTANEOUS NEEDLING *VERSUS* MASSAGE FOR LATERAL EPICONDYLITIS: A RANDOMIZED CONTROLLED CLINICAL TRIAL

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Introduction: Lateral epicondylitis (LE) is the most common cause of elbow pain and dysfunction; however, its optimal treatment strategy remains controversial. This study aims to compare the short-term and intermediate therapeutic outcomes of FSN(Fu's subcutaneous needling) therapy *versus* massage therapy in treatment of LE.
Methods: A total of 48 LE patients recruited from Yongchuan Hospital of Chongqing Medical University were randomly assigned to either the FSN group or the massage group. The primary outcome measures included elbow joint function assessed by DASH questionnaire, and various pain conditions(including resting pain, activity-induced pain, and tenderness) measured by the VAS system. These indicators were evaluated at 1st, 7th, 15th day post-treatment, as well as three- and six-months post-treatment.
Results: Our analysis revealed that, relative to their respective baseline data, both treatment regimens demonstrated comparable positive outcomes across all prognostic indicators at various follow-up time points. Compared with the massage group, the FSN group exhibited more pronounced improvements in resting pain, activity-related pain, and tenderness at multiple follow-up intervals, as well as a lower DASH score on the 15th day post-treatment. However, no statistically significant differences were observed in DASH scores between the two groups at 3- and 6-months post-treatment.
Conclusions: Our research findings indicate that FSN therapy is significantly more effective than massage therapy in rapidly alleviating various pain conditions with IE. However, further studies with larger sample sizes are necessary to confirm the long-term efficacy of FSN therapy.

SPINAL CORD STIMULATION FOR PERSISTENT SPINAL PAIN SYNDROME: PREDICTING CLINICALLY MEANINGFUL OPIOID REDUCTION OVER TWO YEARS

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Introduction: Spinal cord stimulation (SCS) is an effective therapy for managing pain in persistent spinal pain syndrome (PSPS) and offers a potential strategy to reduce opioid dependence in chronic pain management. This study evaluates the impact of SCS on opioid consumption, using the minimal clinically important difference (MCID) of a ≥17% reduction in opioid use over two years.
Methods: A retrospective analysis was conducted on 126 patients with PSPS type 2 who underwent SCS implantation. Opioid consumption, measured in morphine milligram equivalents (MME) per day, was assessed pre-implantation and two years post-implantation. MCID achievers were classified as successful responders. Logistic regression, receiver operating characteristic (ROC) curve analysis, and non-linear regression models were applied to identify predictors of opioid reduction.
Results: The median baseline opioid dose was 9 MME/day, with an overall reduction of -12.4% (range: -70% to +12%). MCID was achieved in 46% of patients, and 14.3% discontinued opioid use entirely. High SCS responders (>80% NRS reduction) were significantly more likely to achieve opioid reduction (OR: 2.71; p=0.002). Baseline opioid use strongly predicted post-SCS opioid reduction (OR: 0.71, 95% CI: 0.63–0.80, p<0.001). ROC analysis showed excellent predictive performance (AUC: 0.9518). A pre-SCS MME threshold of 10.5 mg/day was identified as a reliable cutoff for opioid MCID.
Conclusions: SCS significantly reduces opioid consumption in PSPS type 2 patients, with nearly half achieving meaningful reductions and some discontinuing opioids entirely. Baseline opioid use is a key predictor of opioid reduction, reinforcing SCS as a critical strategy for minimizing opioid dependence in chronic pain management.

NEUROPATHIC PAIN: A BIBLIOMETRIC REVIEW OF RESEARCH PROGRESS, INFLUENTIAL CONTRIBUTIONS, AND FUTURE PERSPECTIVES

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Introduction: Neuropathic pain is a chronic and debilitating condition with complex pathophysiology, often leading to significant impairment in quality of life. Despite advancements in understanding its underlying mechanisms, effective treatment remains challenging due to heterogeneous responses to therapy. This bibliometric analysis aims to evaluate research trends, influential contributors, and existing gaps in neuropathic pain literature, providing insights to guide future studies and improve clinical management strategies.
Methods: A bibliometric analysis was conducted using the Web of Science Core Collection (WoSCC) database. Key bibliometric indicators, including publication trends, citation networks, co-authorship patterns, and keyword co-occurrence, were assessed. Statistical modeling incorporated Average Annual Percentage Change (APC) calculations and trend forecasting using an Auto Regressive Integrated Moving Average (ARIMA) model.
Results: A total of 9,974 studies published between 2005 and 2024 were analyzed. Research output peaked between 2021 and 2022, followed by a slight decline, with predictive models forecasting a steady increase in publications from 2025 to 2030. Most studies appeared in high-impact Q1 journals, reflecting the prominence of neuropathic pain research. Co-authorship mapping revealed strong research networks in the USA and China, while smaller countries remained underrepresented. Keyword clustering identified major themes such as «chronic pain», «molecular mechanisms» and «clinical management», but highlighted gaps in personalized therapeutic approaches and non-pharmacological interventions.
Conclusions: This bibliometric review underscores the ongoing need for expanded research to bridge gaps in the diagnosis, treatment, and management of neuropathic pain. Strengthening global collaboration and fostering interdisciplinary research will be essential in driving advancements in this field.

ANALYZING GLOBAL WEB SEARCH TRENDS IN FIBROMYALGIA: INSIGHTS AND MACHINE LEARNING FORECASTING

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Introduction: Fibromyalgia (FM) is a chronic pain disorder characterized by widespread musculoskeletal pain, fatigue, and cognitive impairment. With the increasing use of the internet for health information, online search behavior has become a valuable indicator of public interest in FM. This study examines global trends in FM-related searches, evaluates temporal patterns, and applies machine learning models to forecast future search interest.
Methods: Google Trends data (2020-2024) were analyzed across 16 countries, including Argentina, Brazil, Canada, China, France, Germany, Greece, Italy, Mexico, Spain, the UK, the USA, and Venezuela. Time-series analysis, linear regression, and the Mann-Kendall test assessed monotonic trends, while seasonal decomposition identified periodic variations. An Auto-Regressive Integrated Moving Average (ARIMA) model projected search trends for 2025. Machine learning models, including Random Forest (RF) and Extreme Gradient Boosting (XGBoost), were used to predict search patterns, with performance evaluated via R^2, RMSE, MAE, and MBE metrics. Feature importance was assessed using SHAP values.
Results: Search interest varied significantly across countries, with the highest engagement in China, the UK, the USA, and Canada. Brazil and Italy showed increasing trends, while Argentina and the USA exhibited declines. ARIMA models predicted stable or rising trends in Brazil, Canada, and Mexico, with slight declines in Germany and Venezuela. RF outperformed XGBoost, achieving an R^2 of 0.92 (training) and 0.56 (testing), with short-term search history emerging as the strongest predictor.
Conclusions: Understanding online health-seeking behavior is crucial for improving FM awareness. Targeted digital campaigns, enhanced public health education, and collaboration with digital platforms could ensure greater accessibility to reliable FM-related information.

WHAT DETERMINES THE BEHAVIOR OF CONSUMERS TAKING SUPPLEMENTS AND OTC DRUGS

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Introduction: Dietary supplements and OTC (over-the-counter) drugs are widely used pharmaceuticals due to their accessibility and the growing trend of self-medication. This study aimed to investigate the extent of OTC drug and supplement use, as well as the motivations behind consumer behavior.
Methods: A total of 768 participants were surveyed, with 75% being women. The questionnaire included questions on con-

sumer habits and sociodemographic characteristics. The results indicate that the primary sources of information about supplements and OTC drugs are personal experience (37%) and discussions with pharmacists (30%), whereas only 10% of respondents obtain information from a doctor. Additionally, only 12.5% stated that their doctor always explains how to take medications.

Results: More than half of the respondents self-medicate, often choosing OTC drugs or supplements without medical consultation. This practice is particularly common among individuals with higher education, who tend to rely less on medical authorities. The most frequently used supplements include vitamins and minerals (37%), immune boosters (13%), and products for skin, hair, and nails (10%). However, many consumers remain unaware of the potential interactions between supplements and prescription medications, posing a risk to patient safety.

Conclusions: The COVID-19 pandemic has significantly increased interest in dietary supplements, as evidenced by a rise in online searches related to vitamins and immunity-boosting substances. This highlights the necessity for better consumer education on the safety and regulation of dietary supplements. The findings underscore the need for increased oversight of the supplement industry and improved awareness among both consumers and healthcare professionals. Enhancing regulations and promoting informed decision-making may reduce the risks associated with the unsupervised use of OTC drugs and dietary supplements.

PAIN IN OSTEOARTHRITIS – CASE REPORT

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Introduction: Osteoarthritis is a common non-oncological cause of chronic pain. Due to its prevalence and lack of effective causal treatment, it remains a challenge in pain medicine. This report presents a 51-year-old female diagnosed with lumbar degenerative disease in early adulthood. Despite prolonged treatment at a Pain Management Clinic, she suffered from severe pain (NRS 9) with secondary neurological complications, including muscle atrophy, bladder dysfunction, and depressive mood disorders. Her treatment included opioid analgesics, NSAIDs, co-analgesics, physiotherapy, and neurosurgical interventions.

Case report: The patient underwent multiple procedures, including L4-L5 and L5-S1 stabilization, decompression, fenestration, microdiscectomy, and transforaminal lumbar interbody fusion (TLIF). In June 2024, she received a two-stage spinal cord stimulator (SCS) implantation, yet persistent pain remained a challenge. She reported the best relief with increasing doses of oxycodone. The addition of cannabinoids stabilized opioid requirements. Her current regimen consists of 110 mg oxycodone every 12 hours, 5-10 mg fast-acting oxycodone for breakthrough pain, 1 mg alprazolam in the evening, and 200 mg cannabis flos THC 22% + CBD 1% before bedtime. Opioid dose escalation leads to altered consciousness, while dose reduction, even by 10%, results in severe pain near shock levels.

Conclusions: This case exemplifies the difficulties in treating advanced degenerative spinal disease despite multidisciplinary efforts. It underscores the need to explore alternative pain management strategies, including continuous intravenous opioid infusion, for non-terminal patients.

PREDICTING THE EFFICACY OF PAIN MANAGEMENT STRATEGIES IN CANCER PATIENTS USING MACHINE LEARNING ALGORITHMS

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Introduction: Pain management in oncology remains a significant clinical challenge due to individual variations in pain perception and treatment response. Conventional approaches, such as the WHO analgesic ladder, often fail to provide optimal pain relief for all patients. Recent advancements in artificial intelligence (AI) offer a promising avenue for developing personalized pain management strategies. This study aims to evaluate the efficacy of machine learning algorithms in predicting treatment response in cancer-related pain management.

Methods: This retrospective study analyzes clinical data from 300 cancer patients receiving pain treatment (opioids, adjuvant analgesics, interventional techniques). Patient characteristics, including age, sex, cancer type, pain intensity before and after treatment, and drug regimens, were used as input variables for predictive modeling. Machine learning techniques, including logistic regression, decision trees, artificial neural networks, XGBoost, and random forest models, were trained and validated. Model performance was assessed using accuracy, sensitivity, specificity, and AUC-ROC scores.

Results: We expect that machine learning models will outperform traditional clinical decision-making approaches in predicting individual patient responses to pain management strategies. The most accurate models will help identify patient subgroups requiring treatment adjustments to achieve optimal pain relief.

Conclusions: Implementing AI-driven predictive models in oncology pain management may enhance treatment personalization, improve pain control, and optimize healthcare resource allocation. This study provides a foundation for integrating AI-based decision support systems into clinical practice to refine pain management protocols for cancer patients.

THE IMPACT OF CANNABINOID THERAPY ON CHRONIC PAIN CONTROL IN PALLIATIVE CARE PATIENTS - A RETROSPECTIVE STUDY

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Introduction: Chronic pain significantly affects the quality of life of palliative care patients, often necessitating high-dose opioid therapy, which is associated with severe side effects and diminishing efficacy over time. Cannabinoids have emerged as a potential alternative or adjunctive therapy for pain management in palliative settings, yet clinical evidence remains inconclusive. This study aims to evaluate the effectiveness of cannabinoid therapy in reducing chronic pain intensity and opioid consumption among palliative care patients.
Methods: This retrospective study analyzes medical records of 274 palliative care patients receiving cannabinoid-based treatments in addition to standard pain management. The primary outcome measures include changes in pain intensity (measured on the Numeric Rating Scale [NRS]) and opioid dose reduction over a four-week period. Secondary outcomes assess patient-reported improvements in sleep quality, mood, and functional status. Statistical analysis includes paired *t*-tests, ANOVA, and regression modeling to determine the correlation between cannabinoid therapy and pain relief.
Results: Preliminary data suggest that the addition of cannabinoids to standard pain management regimens results in a significant reduction in NRS pain scores and opioid dosage, with minimal adverse effects. Subgroup analysis may reveal variations in response based on age, cancer type, and prior opioid exposure.
Conclusions: Cannabinoid therapy may serve as a valuable adjunct in chronic pain management for palliative care patients, reducing reliance on opioids while improving overall patient well-being. These findings highlight the need for further randomized controlled trials to validate the role of cannabinoids in palliative pain management.

DOES EPIDURAL INFUSION AFTER EPIDURAL ADHESIOLYSIS AND RADIOFREQUENCY OF THE LUMBAR DORSAL ROOT GANGLION IMPROVE SHORT- AND MEDIUM-TERM OUTCOMES?

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Introduction: Epidural lysis of adhesions (LOA) (1) and radiofrequency of the spinal root ganglion (PRFG) (2) are commonly used in the treatment of lumbar radiculopathy caused by inflammation or other irritation of the nerve root at its origin. Post-procedural peridural infusion of anesthetic and steroid (PPIAS) could enhance outcomes in the short and medium term (1 week /to 1 month). The aim of this study is to evaluate how PPIAS influences short- and medium-term outcomes.
Methods: 10 patients (Table 1) underwent a combined LOA+PRFG procedure using a multifunctional device enabled for PPIAS (AlfaMed Voyager®) (Figure 1) 5 patients (Group A) received PPIAS for 24 hours (Figure 2), while in the other 5 patients (Group B), the device was removed immediately to allow early resumption of previous antiplatelet treatment.
Results: All patients completed the expected follow-up. At 1 week, the NRS score was reduced by 70% in Group A and 50% in Group B (p=0.00057). However, at 1 month, there were no significant differences between the groups (45% *vs* 44%, respectively).

Conclusions: In our patients, the NRS score was significantly better in Group A in the short term. Although this difference did not affect medium-term outcomes, it may facilitate post-procedural recovery and allow an earlier start of post-LOA+PRFG rehabilitation without unfavorable events. The use of a certified device that enables PPIAS provides an additional opportunity for managing patients with difficult-to-treat radicular pain.

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Table 1.

patient n°	sex	age	NRS base	APT (s/n)	Group
1	F	75	8	S	B
2	F	68	9	N	A
3	M	66	7	N	A
4	F	59	7	N	A
5	M	60	9	S	B
6	F	59	8	S	B
7	F	63	7	S	B
8	M	58	7	N	A
9	M	61	8	S	B
10	F	59	7	N	A

NRS	GROUP A+B	GROUP A	GROUP B	P VALUE
NRS T0	7,7	8	7.4	
T 1 WEEK R	60%	70%	50%	0,00057
T 1 MOUNTH R	44.5%	45%	44%	>0.5

NRS= numeric pain rating scale; NTRST=; NRS basic value; T1WR = percent of reduction NRS at

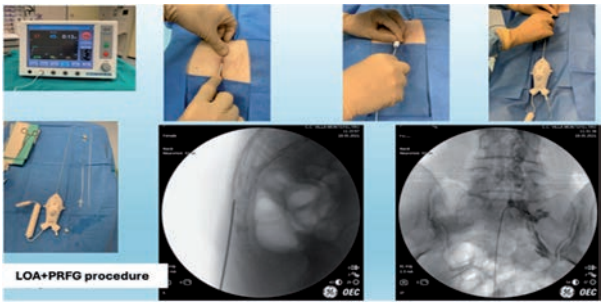

Figure 1.

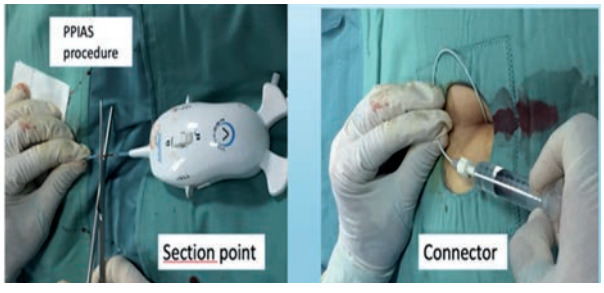

Figure 2.

MicroRNAs IN MIGRAINE PATHOGENESIS: FROM EPIGENETIC REGULATION TO THERAPEUTIC TARGETS

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Introduction: The pathogenesis of migraine is characterized by intricate molecular, genetic and epigenetic mechanisms. MicroRNAs (miRNAs) have been identified as pivotal regulators of gene expression in neurological disorders including migraine. The objective of the present study is to analyse the role of specific miRNAs in the pathophysiology of migraine and to evaluate their potential as therapeutic targets.
Methods: A comprehensive analysis of studies published in PubMed, Web of Science, and Scopus (2015-2025) was conducted, focusing on the expression profiles of microRNAs in migraine and their functional significance in disease mechanisms.
Results: Key microRNAs have been identified, with distinct roles in the pathogenesis of migraine. For instance, miR-133a suppresses NOS3, contributing to endothelial dysfunction; miR-214 regulates CACNA1A in hereditary migraine; miR-30a demonstrates protective effects through CGRP inhibition; miR-124 stabilizes neuronal membranes via SCN1A and GLT-1 regulation; and miR-132 influences cortical spreading depression through neuronal excitability modulation.
Conclusions: MiRNAs represent a promising therapeutic target in migraine, with their differential expression patterns suggesting potential applications in diagnostic panels and personalized therapy approaches.

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CLUSTER HEADACHE AND MIGRAINE: A COMMON FUTURE IN CGRP-TARGETED THERAPY?

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Introduction: Cluster headache and migraine are the most disabling primary headaches. The role of CGRP has been proven in the pathogenesis of both diseases, however, the importance of CGRP-targeted therapy in cluster headache remains less significant than in migraine. The search for «CGRP-positive» cluster headache can help make a breakthrough in the treatment of cluster headache and improve the quality of life of such patients.
Methods: A comprehensive analysis of studies published in PubMed, Web of Science and Scopus (2015-2025) was conducted, focusing on CGRP levels and CGRP-targeted therapy of cluster headache. Keywords used in the original review: CGRP, cluster headache, therapy, monoclonal antibody. Exclusion criteria included lack of full-text articles.
Results: The level of CGRP increases with spontaneous and provoked attacks of not only migraines, but also cluster headaches. Subcutaneous and intranasal sumatriptan, zolmitriptan has a strong recommendation for cluster headache, however genetic variants can play a role in treatment response. Monoclonal antibodies, in particular galcanezumab, have been recommended only in episodic cluster headache. Nevertheless, the study of tear fluid showed a significant increase in CGRP levels compared with placebo, not only in episodic, but also in chronic cluster headache. Some studies indicate the effectiveness of monoclonal antibodies in refractory chronic cluster headache.
Conclusions: CGRP is a potential target for both acute and preventive cluster headache therapy. It is necessary to finalize research designs, further study of CGRP-targeted therapy of cluster headache based on genetic variations and possibly expand the scope of use of hepants not only for patients with migraine.

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PAIN-RELATED FEAR IN CHILDREN DURING COVID-19 VACCINATION

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Introduction: Covid-19 vaccine is worldwide public health strategy against SARS-CoV-2. Pain-related fear in children can negatively affect experience and vaccine acceptance.
Methods: Data collection from May 2023 to February 2024 took place in the Vaccination Center of Motol University Hospital and Thomayer University Hospital in Prague after approval of ethical committee. Inclusive criteria for data collection were the child's age 5-18, signed informed parental consent and understanding of the Czech language. The following methods were used: anamnestic data, Wong-Baker Faces Pain Rating Scale (WBFPRS, Wong and Baker, 1988) and Children's Fear Scale (McMurtry *et al.*, 2011).

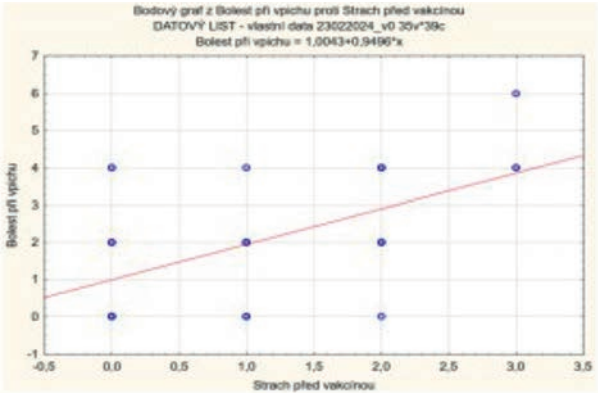

Figure 1. Intensity of procedural pain and fear before vaccination p<0.05.

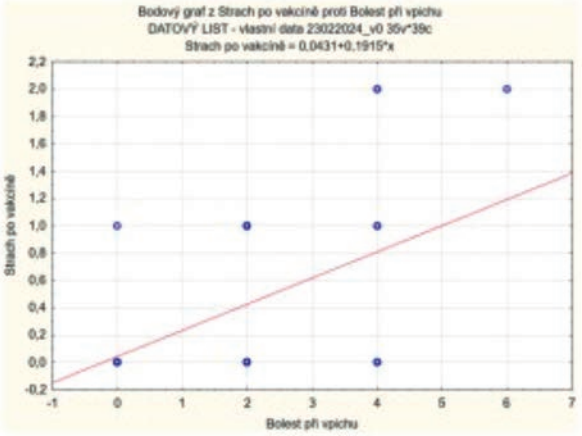

Figure 2. Intensity of procedural pain and fear after vaccination p<0.05.

Results: N=39 children (average age M=9.8, SD 2.8, from 5 to 17 years, 56% boys) were examined. We found a relationship between the level of fear related to vaccination (SARS-CoV-2) and intensity of pain during injection (p_s <0.05). Increased levels of fear before vaccination were related to increased intensity of pain during injection and fear after vaccination (Figures 1 and 2). The results also show that boys (p<0.05) and children under 10 years had a higher intensity of pain during vaccination (p<0.05). Fear of vaccination decreased with the number of vaccination doses of the children in the past (p<0.05) and with the number of vaccination doses of the children's parents (p<0.05).
Conclusions: It is important to prevent and manage pain-related fear with pharmacological and non-pharmacological approaches. Cognitive-behavioral therapy is evidence-based for managing procedural pain and fear in children.

KETAMINE FOR REFRACTORY BRACHIAL PLEXOPATHY: TRANSFORMING NEURAL INJURIES TO NEURAL RESET

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Background: Neuropathic pain (NeuP) is a debilitating condition affecting millions of people globally with decreased quality of life and substantial economic burden. Managing refractory NeuP poses a significant clinical challenge as it is often resistant to conventional treatment. Intravenous ketamine, an N-methyl-D-aspartate (NMDA) receptor antagonist, has shown promise in treating refractory NeuP by reducing central sensitization and modulating pain pathways. We present two cases of Parsonage Turner Syndrome (PTS) and phantom limb pain (PLP) successfully managed with intravenous ketamine infusion.
Methods: The first case involves a 42 year old woman who developed severe pain over left upper limb post COVID -19 vaccination accompanied by sensory symptoms. MRI of the brachial plexus revealed C5-C8 nerve root engorgement consistent with brachial neuritis or PTS. Second case is a 34 year old gentleman with right traumatic brachial plexus injury who failed multimodal pain treatment and subsequent trans-humeral amputation, further worsened his phantom limb pain. Both patients underwent low-dose intravenous ketamine infusions. Pain intensity was assessed using the Numerical Rating Scale (NRS). Adverse effects were also recorded.
Results: Both patients experienced significant pain reduction of more than >50%. The PTS patient's NRS decreased from 8 to 3 while the male patient's pain reduced from 10 to 0. Side effects were minimal, including transient dissociation and dizziness which resolved spontaneously.
Conclusions: Ketamine was highly effective in reducing refractory NeuP in these challenging cases and to our knowledge, this is the first PTS case to use ketamine. Further studies are warranted to establish its long-term efficacy and optimal dosing protocols.

THE CHARACTERISTICS OF MUSCULOSKELETAL PAIN IN PATIENTS ADMITTED TO THE GENERAL REHABILITATION WARD

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Introduction: Chronic Musculoskeletal Pain (CMP) significantly affects patients' functionality and quality of life, representing a challenge for healthcare systems.
Aim of the study: To estimate the relationship between pain intensity, its localization, the level of catastrophizing, and quality of life in patients admitted to a general rehabilitation unit.
Methods: The study included 74 patients with CMP. Pain intensity was assessed using the Visual Analog Scale (VAS), pain localization through the Nordic Musculoskeletal Pain Questionnaire, the level of pain catastrophizing using the Pain Catastrophizing Scale, and quality of life through the EQ-5D-5L questionnaire. Statistical analysis was performed using Pearson's correlation coefficient in SPSS v.26.
Results: The mean pain intensity (VAS) was 5.80±1.84, with 25% of patients presenting more than four affected regions, the most common being the lumbar region (58%), cervical region (34%), and knees (27%). The mean EQ-5D-5L score was 0.42±0.18. Pearson's correlation between VAS and EQ-5D-5L was r=-0.97, p<0.001, indicating a strong inverse relationship: patients with more intense pain had significantly lower quality of life. Additionally, a positive correlation was observed between the level of catastrophizing and pain intensity (r=0.82, p<0.001), suggesting that patients who perceive pain in a catastrophic manner had higher VAS scores.
Conclusions: The results showed that the intensity of the pain and the number of locations directly influenced the inpatients' quality of life. The results highlight the negative impact of CMP on quality of life. This suggests the importance of personalized therapeutic and rehabilitation strategies, including complementary psychological interventions for pain management.

PSYCHOSOCIAL AND NOCIPLASTIC MECHANISMS OF PERSISTENT IDIOPATHIC FACIAL PAIN: CATASTROPHIZING AND ITS NEGATIVE CORRELATION WITH TOP-DOWN PAIN MODULATION

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Introduction: Persistent Idiopathic Facial Pain (PIFP) is a chronic primary orofacial pain affecting 0.03% of the population, mainly women aged 30-60. Its pathophysiology is unclear but may involve an exaggerated response to mild injury, worsened by emotional stress. Nociplastic pain, driven by altered nociception (central and peripheral sensitization), is a proposed pathophysiological hypothesis.
Methods: 20 PIFP patients (PIFPs) and 21 healthy controls (HCs) were enrolled to assess cognitive functions, mood disturbances, catastrophizing, quality of life, and psychopathological profiles. A Conditioned Pain Modulation (CPM) paradigm has been used to measure the Diffuse Noxious Inhibitory Control (DNIC) which has been shown in the literature to correlate with the nociplastic clinical profile. Finally, we explored the relationship between DNIC and cognitive-behavioral factors.
Results: PIFPs showed greater subjective cognitive impairment, mood disturbances, catastrophizing, helplessness, and rumination compared to HCs (all p<0.05). They also had worse social networks, higher alexithymia scores and poorer quality of life (all p<0.05). Personality profiles indicated higher feelings of worthlessness and borderline traits (p<0.05). The CPM results revealed significantly reduced pain modulation in PIFPs, correlating negatively with catastrophizing (ρ=-0.557, p=0.013) and helplessness (ρ=-0.494, p=0.032).
Conclusions: The study supports the nociplastic pain hypothesis for PIFPs, highlighting the influence of cognitive-emotional factors on pain. The reduced pain modulation (CPM effect) further emphasizes the role of psychological factors in pain perception, suggesting that non-pharmacological therapies could enhance pain management and outcomes.

COMBINATION OF HIGH-INTENSITY LASER AND LOW FREQUENCY PULSED ELECTROMAGNETIC FIELD THERAPY IN NECK PAIN. CLINICAL CONCLUSIONS

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Introduction: Neck pain is a common musculoskeletal disorder that significantly impacts quality of life. Traditional treatments often provide limited relief, leading to exploration of alternative therapies. This study evaluates the combined effects of high-intensity laser therapy (HILT) and low-frequency pulsed electromagnetic field (PEMF) therapy in managing neck pain, focusing on pain reduction, mobility improvement, and patient outcomes.
Methods: A total of 80 participants with chronic neck pain were randomly assigned to two groups: one received combined HILT and PEMF therapy (n=40), while the other received a placebo treatment (n=40). The treatment protocol involved 12 sessions over a 4-week period. Pain intensity was measured using the Visual Analog Scale (VAS), while range of motion (ROM) and functional improvement were assessed through the Neck Disability Index (NDI). Data were collected pre-treatment and post-treatment.
Results: The combination therapy group showed a significant reduction in VAS scores, with pain decreasing by 65% (from 7.8 to 2.7, p<0.01). ROM improved by 30%, and NDI scores decreased by 40%, indicating functional improvement. The placebo group showed only a 20% reduction in VAS scores and no significant change in ROM or NDI scores.
Conclusions: Combined high-intensity laser and low-frequency pulsed electromagnetic field therapy significantly improved pain, mobility, and functionality in patients with chronic neck pain, with a 65% pain reduction and 30% improvement in ROM. This combination therapy shows promise as an effective treatment modality for neck pain, warranting further investigation into long-term effects and optimal treatment protocols.

INFRARED LIGHT (LASER) THERAPY IN ACUTE NECK PAIN OF DIFFERENT ETIOLOGY

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Introduction: Acute neck pain (ANP) is a common condition with multiple etiologies, including musculoskeletal strain, cervical disc issues, and whiplash injuries. Infrared light (laser) therapy has emerged as a potential non-invasive treatment for pain relief and tissue healing. This study aimed to assess the efficacy of infrared laser therapy in patients with acute neck pain of different etiologies.
Methods: A randomized controlled trial was conducted with 120 participants, aged 18-65 years, suffering from ANP. The participants were divided into two groups: the treatment group (n=60) received infrared laser therapy (wavelength 810 nm, 5 J/cm²) for 10 sessions over 2 weeks, while the control group (n=60) received a placebo treatment. Pain intensity, functional disability, and range of motion were assessed before treatment, at 1 week, and at 4 weeks post-treatment using the Visual Analog Scale (VAS), Neck Disability Index (NDI), and cervical range of motion (ROM) measurements.
Results: The treatment group showed a significant reduction in pain intensity (VAS score decreased by 45%, $p<0.01$) and disability (NDI score improved by 40%, $p<0.01$) compared to the control group. Additionally, the range of motion improved by 30% in the treatment group ($p<0.05$). No significant adverse effects were reported.
Conclusions: Infrared laser therapy significantly reduces pain and disability in patients with acute ANP of different etiologies. It also improves cervical range of motion, making it a promising treatment modality for acute neck pain management. Further studies with larger sample sizes and longer follow-up periods are recommended to confirm these findings.

LOW FREQUENCY ELECTRIC STIMULATION (INTERFERENTIAL THERAPY - IFT) IN KNEE OSTEOARTHRITIS

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Introduction: Knee osteoarthritis (OA) is a leading cause of pain and disability in older adults, with limited effective non-invasive treatment options. Low-frequency electrical stimulation, specifically interferential therapy (IFT), has been proposed as a potential treatment for alleviating symptoms of knee OA. This study aimed to evaluate the effectiveness of IFT in reducing pain and improving functionality in patients with knee osteoarthritis.
Methods: A randomized controlled trial was conducted with 100 participants (aged 50-75 years) diagnosed with knee OA. Participants were randomly assigned to the IFT treatment group (n=50), receiving IFT for 20 minutes, 3 times a week for 4 weeks, or a control group (n=50), receiving a placebo treatment. Pain levels, knee function, and quality of life were assessed using the Visual Analog Scale (VAS), Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), and the SF-36 Health Survey at baseline, after 4 weeks, and 8 weeks post-treatment.
Results: The IFT group showed a significant reduction in pain (VAS score decreased by 40%, $p<0.01$) and improvement in knee function (WOMAC score improved by 35%, $p<0.01$) compared to the control group. Additionally, the IFT group had a 25% improvement in quality of life (SF-36 score, $p<0.05$).
Conclusions: Interferential therapy significantly reduces pain and improves knee function and quality of life in patients with knee osteoarthritis. IFT can be considered a safe and effective adjunct treatment for managing knee OA symptoms. Further studies with larger cohorts and long-term follow-up are recommended.

GENICULAR ARTERY EMBOLIZATION: 1 YEAR EXPERIENCE AND RESULTS USING REABSORBABLE STARCH MICROSPHERES FOR KNEE PAIN TREATMENT DUE TO CHRONIC OSTEOARTRITIS

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Introduction: Genicular arteries embolization (GAE) is a recently developed technique for the treatment for chronic knee pain due to osteoarthritis. It's demonstrated by many authors as a safe and effective method of pain relief using different embolic materials. In this study we evaluate the use of EmboCept® S 50 µm reabsorbable microspheres with a focus on duration of pain relief and articulation functional improvement.
Methods: Patients inclusion criteria were moderate to severe osteoarthritis (Kellgren and Lawrence classification, WORMS and VAS score, non-response to other therapies. Patients 20 (12 Females (60%), 8 Males (40%) median age: 70.2±9.4 years (range 53-85), knees number 24 (14 left, 10 right), follow-up range 1 to 12 months. The Western Ontario and McMaster Universities Arthritis Index (WOMAC) score shows a rapid decrease in 48 hours, reaches a minimum at 1 month, with a slight worsening at 4 months, and stabilized at 6 and 12 months. The Visual Analogue Scale (VAS) score follows a similar pattern.
Results: Clinical success (≥50% of symptoms reduction) at 48 hours 91.6% (22 knees), at 1 month 83.3% (20 knees), at 4,6,12 months 66.6% (16 knees). Significant reduction in pain (VAS: -65.3% at 1 month, 53.4% at 4,6,12 months) Substantial functional improvement (WOMAC: -63.4% at 1 month, -43.8% at 4,6,12 months). Peak efficacy at 1 month with success rate of 83.3%.
Conclusions: The improvement is statistically significant at all timepoints. K-L grade is the most important predictor of outcome. Higher baseline WOMAC predicts greater improvement. Patients with K-L grade 2-3 show better results *vs* grade 4.

INTRA-ARTERIAL EMBOLIZATION FOR TREATMENT OF CHRONIC TROCHANTERIC AND HIP ARTICULATION PAIN

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Introduction: Articular intra-arterial embolization is a recently developed technique that demonstrated already as a safe and effective method for pain treatment in chronic osteoarthritis. The aim of this study is to evaluate the safety and effec-

tiveness of intra-arterial embolization for treatment of chronic trochanteric and hip pain due to osteoarthritis.

Materials: A cohort of seven patients, with a median age of 64 years (range 45-84 years) has been enrolled by IR's in a single- center, single arm, prospective study. Inclusion criteria were pain symptoms unresponsive to conservative treatments, osteoarthritis according to Kellgren-Lawrence grading system (grade 1 to 3), clear signs of osteoarthritis, Hip articulation bursitis on MRI examination, VAS>5. The embolization of ascendent branches of lateral femoral circumflex artery and articular branches of medial circumflex femoral artery was performed using degradable starch microspheres EmboCept S 50 mk. Technical success achieved in 100% of patients. No complications were reported.

Results: Outcome assessed adopting WOMAC and VAS scale at baseline, 48 hours, 1, 4, 6 months. Embolization resulted in significant pain reduction right after procedure. At 48 hours VAS improved from 8.0±1.2 to 1.5±1.0. WOMAC score showed improvement in joint function, quality of life, reduction in stiffness and physical dysfunction. The improvements were sustained over the time at 1, 4 and 6 months.

Conclusions: Intra-arterial embolization seems to be a promising treatment for chronic trochanteric and hip pain related to osteoarthritis in selected patients. The offers a safe and effective option, particularly for those patients who seek to avoid surgery or are not candidable for surgical treatment. However, additional research is required to confirm its lasting effects and optimize criteria for selecting patients.

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