

muscle strength, ultrasound could be a useful tool for assessing disease severity and monitoring disease progression in patients with PPS.

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CO18-003-e

### Botulinum toxin for the treatment of arthropathies

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**Keywords:** Intra-articular botulinum toxin; Pain; Stiffness; Mechanical and inflammatory arthropathies

**Introduction.**– Botulinum toxin (BTX) has long been used for the treatment of spasticity. Currently, its indications have been enlarged to the musculoskeletal system and particularly to the management of osteo-arthropathies.

**Objectives.**– Describe the effects of intramuscular and intra-articular BoNT-A in painful arthropathies in PRM.

**Method.**– Literature review.

**Results.**– Literature data report that *intramuscular* injection of BoNT-A may represent an alternative for the management of reactive periarticular muscle contractures after joint replacement surgery or of agonist/antagonist muscle imbalance. The literature also reports some controlled randomized studies showing the higher analgesic effect of BoNT-A *intra-articular* injections compared to corticosteroids in chronic knee pain, chronic shoulder joint pain due to osteo-articular conditions or rheumatoid arthritis, sacroiliac joint pain and refractory pain after knee arthroplasty.

The effects of BoNT-A *intra-articular* injection have been investigated in animal models and suggests that BoNT-A slows may have a chondroprotective effect by limiting the alterations of the cartilage structures associated to analgesic effects through inhibition of pain mediators.

**Conclusions.**– BoNT-A represents an interesting therapeutic alternative both for intramuscular injection in case of periarticular muscle contractures and for intra-articular injection, although its *intra-articular* effects need to be better defined by further studies.

**Further reading**

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### Botulinum toxin type a in palmar hyperhidrosis: The role of iontophoresis

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**Keywords:** Hyperhidrosis; Botulinum toxin type A; Iontophoresis

**Introduction.**– Palmar hyperhidrosis is a disease that has substantial impact upon affective, workplace and social relationships. This study aims to review the existing evidences about the effectiveness of botulinum toxin in the treatment of palmar hyperhidrosis and the role of iontophoresis as a drug delivery method.

**Material and methods.**– The expression “botulinum toxin” AND “palmar hyperhidrosis” AND “iontophoresis” was searched on PubMed, Cochrane and PEDro databases. Articles were chosen for full text reading by abstract evaluation.

**Results.**– Botulinum toxin type A is a valid treatment option in patients with severe sweating who have not responded to topical treatments. Benefits of using botulinum toxin type A to inhibit palmar hyperhidrosis were documented in several studies, however palmar injections are very painful. Previous studies demonstrate that botulinum toxin type A can be effectively delivered to the palms by iontophoresis.

**Discussion.**– Palmar hyperhidrosis can limit the patients’ quality of life. Botulinum toxin type A iontophoresis is a non-invasive, inexpensive, safe and

effective treatment option for palmar hyperhidrosis. Considering the established evidences, it is important to revise this unlabeled use.

**Further reading**

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### Efficacy of transcutaneous electrical nerve stimulation (TENS) and kinesiotaping in patients with lateral epicondylitis

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**Keywords:** Lateral epicondylitis; Tennis elbow; Transcutaneous electrical nerve stimulation; Kinesiotaping

**Introduction.**– The aim of this study was to determine and compare the efficacy of TENS and kinesiotaping in lateral epicondylitis (LE).

**Methods.**– In this prospective-randomised, assessor blinded controlled trial, seventy eight patients were enrolled. Patients were allocated into 4 treatment groups: Group 1 received TENS and kinesiotaping (KT), group 2 received TENS + sham KT, group 3 received sham TENS + KT and group 4 received sham TENS + sham KT. TENS was applied for 10 sessions and KT for 4 times in 10 days. Outcome measures were pain-free grip strength, pressure pain threshold, pain severity and patient rated tennis elbow evaluation for functional status. Patients were assessed at randomization, on day 10 and at 12th week of follow-up.

**Results.**– On day 10, TENS, KT combination treatments were statistically superior to sham group ( $P < 0.05$ ). At week 12, all groups had statistically significant improvements compared to pre-treatment, however there were no significant differences among groups.

**Discussion.**– To our knowledge, this is the first study that evaluates TENS and KT in LE. In this study we found that KT alone or in combination with TENS was not superior to TENS, sham TENS or sham KT. Further research is needed to confirm these results.

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### Association between alendronate, serum alkaline phosphatase level, and heterotopic ossification in individuals with spinal cord injury

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**Introduction.**– Only sparse evidence exists regarding the effectiveness of oral alendronate in the prevention of heterotopic ossification in patients with spinal cord injury. The objective is to investigate the protective effect of oral alendronate intake on the appearance of heterotopic ossification (HO) in patients with spinal cord injury (SCI).



**Methods.**— The incidence of heterotopic ossification during rehabilitation was compared between SCI patients receiving oral alendronate ( $n = 125$ ) and SCI patients not receiving oral alendronate ( $n = 174$ ) in a retrospective database review. The association between heterotopic ossification and/or alendronate intake with HO risk factors and biochemical markers of bone metabolism were also explored.

**Results.**— HO developed in 19 male patients (6.35%), however there was no significant difference in the incidence of HO in patients receiving oral alendronate or not. Significant correlation was found between abnormal serum alkaline phosphatase levels and HO appearance ( $P < 0.001$ ) as well as normal serum alkaline phosphatase and alendronate intake ( $P < 0.05$ ).

**Discussion.**— Even though there was no direct prevention of heterotopic ossification in SCI patients by oral alendronate intake, abnormal serum alkaline phosphatase was found more frequently in patients with HO development and without oral alendronate intake. This evidence suggests that alendronate may play a role in preventing HO.

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### NSAIDs use on musculoskeletal disease in the elderly and cardiovascular risk

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**Keywords:** Nonsteroidal anti-inflammatory agents; Musculoskeletal disease; Cardiovascular risk; Aged

**Introduction.**— NSAIDs are very prescribed drugs, used mainly as painkillers in musculoskeletal disease. They have important contraindications, standing out their cardiovascular risk. Current evidence suggests that there is no cardiovascularly safe NSAID, being naproxen the least harmful. Their careful use is important in the elderly, since cardiovascular disease is one of their main causes of morbidity and mortality. Our objective was to evaluate NSAIDs prescription in elderly with musculoskeletal disease and their cardiovascular risk.

**Material and methods.**— Cross-sectional observational study, held on a Portuguese Health Centre, in half of patients between 65 and 84-years-old, randomly selected, who had a consultation from 1 to 17/January/2013. Data collected from electronic clinical process and statistically analyzed.

**Results.**— In a sample of 318 patients, 23.6% ( $n = 75$ ) had NSAIDs prescribed, 48.0% ( $n = 36$ ) of them due to musculoskeletal disease. Of these, 80.6% ( $n = 29$ ) had increased cardiovascular risk, whom 37.9% ( $n = 11$ ) had naproxen prescribed.

**Discussion.**— NSAIDs are very used in elderly with musculoskeletal disease and most of them have increased cardiovascular risk. Naproxen is already quite used. There is need to improve analgesic prescription in elderly patients, by increasing naproxen use and by replacing NSAIDs with other “painkillers” – physical agents, rehabilitation programs and regular exercise.

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## Posters

P073-e

### Efficacy of sacroiliac joint corticosteroid injection based on arthrographic contrast patterns

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**Objective.**— To determine the relationship between sacroiliac joint (SIJ) contrast dispersal patterns during SIJ injection and pain relief at 2 weeks and 2 months post-procedure.

**Methods.**— A retrospective review of medical records identified patients who underwent therapeutic SIJ corticosteroid injection. Fluoroscopic contrast flow patterns were categorized as type I (cephalad extension within SIJ) or type II (minimal cephalo extension with inferior extravasation). Self-reported (NPRS) values at the time of injection and 2 and 8 weeks post-procedure were recorded. Main outcome measures: the primary outcome measure was effect of type of contrast pattern on change in NPRS values at 2 weeks and 2 months post-injection. The secondary outcome measure was association between number of positive provocative SIJ physical examination maneuvers and decrease in level of pain following the procedure.

**Results.**— All subjects had decreased NPRS values at 2 and 8 weeks compared to baseline. Subjects with type I flow had greater reductions in pain at 2 and 8 weeks compared to those with type II flow.

**Conclusions.**— Fluoroscopically guided corticosteroid injections into the SIJ joint are effective in decreasing NPRS values in patients with SIJ-mediated pain. Intra-articular delivery of corticosteroid to the SIJ leads to more favourable clinical outcomes.

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P074-e

### Characteristics of corticosteroid utilization with spinal interventions

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**Purpose.**— To analyze the change in utilization of various steroids in cervical and lumbar transforaminal epidural steroid injections (TFESI), with a focus on non-particulate versus particulate steroid.

**Materials and methods.**— The Lifeline IMS Health database containing outpatient billing claims from 1/1/2012 to 12/31/2012 representing over 61 million lives was interrogated and a dataset was generated based on the following: commercial insurance claims on subjects under age 65 undergoing TFESI.

**Results.**— Steroid use in cervical (TFESI) changed from betamethasone in 2002 to dexamethasone in 2012. The most commonly used steroids for cervical TFESI in 2012 were dexamethasone (17.57%), methylprednisolone (12.84%) and triamcinolone (6.08%). Compounded steroid use changed from 2.04% in 2002 to 0.68% in 2012. The mostly commonly used steroids for lumbar TFESI in 2012 were methylprednisolone (19.70%), triamcinolone (11.15%) and dexamethasone (6.16%). Compounded steroids were used in 0.42% of procedures in 2002 and 2.07% in 2012.

**Discussion.**— Over the past decade, there has been a trend toward utilization of non-particulate steroids, particularly with cervical transforaminal epidural steroid injections. The data show a changing standard of care from particulate to non-particulate steroids, particularly with cervical transforaminal epidural steroid injections.

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P075-e

### Sever disease: An important cause of heel pain in children: Case report

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**Introduction.**— Sever disease refers to a calcaneal apophysitis. It is a nonarticular osteochondrosis of the calcaneal apophysis, which occurs in children and young adolescents. Sever disease is the most common cause of heel pain in the growing child. But there are not so much documentary about this condition so this case highlights the clinical features of this self-limiting disorder.

**Observation.**— We report a 12-year-old male presented in our out patient clinic with a 3 month history of bilateral heel pain. Pain had worsened over a 2-week period and at times, he walked on his toes. The pain was of spontaneous onset with no history of trauma. The pain was aggravated by activity and relieved