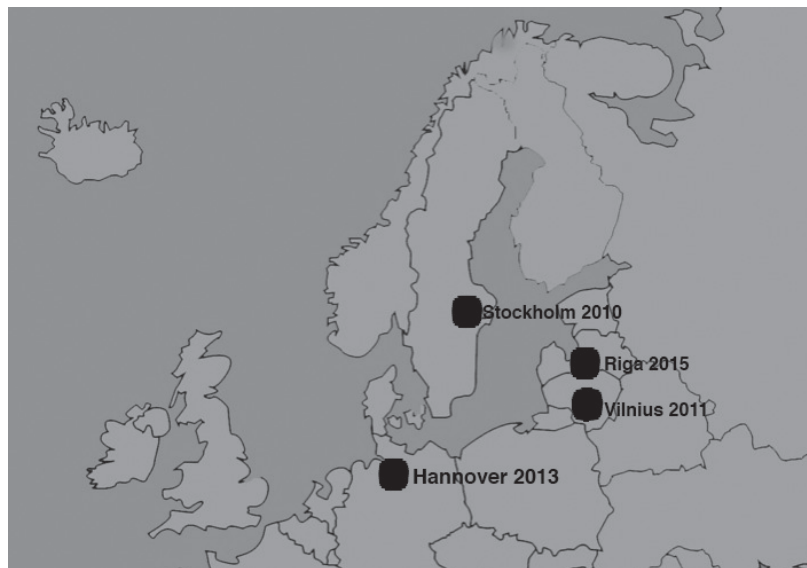


4th Baltic and North Sea Conference on Physical and Rehabilitation Medicine

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Baltic & North Sea Conferences on PRM

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Introduction: Epiphyseal fractures of proximal tibia are rare, with an incidence of 0.5–3% of all epiphyseal fractures and they occur mostly in older children and adolescents during sports activities. **Case report:** A 15-year-old boy was admitted in the emergency department with bilateral knee pain and inability to stand after a jump in a trampoline. There was no significant medical history, including joint or bone pathologies. No previous clinical symptoms of Osgood-Schlatter disease were reported. On physical examination, he had swelling and intraarticular effusion of both knees, with tenderness to palpation. The knees were held in a semiflexed position and any attempt of motion provoked severe pain. No neurovascular deficits were present. X-rays showed bilateral fractures of the proximal tibial epiphysis, classified as Salter-Harris type II on the left tibia and as Salter-Harris type IV on the right tibia. The patient underwent bilateral closed reduction and internal fixation with cannulated screws. Long-leg casts were applied in extension position. Six weeks later, casts were removed and x-rays showed good healing. He presented small effusion of right knee, bilateral pain at femoral quadriceps contraction, bilateral atrophy of femoral quadriceps and sural triceps muscles, limitation of 10° in left knee's flexion and 20° in right knee's flexion. He underwent a rehabilitation program, with pain control, passive and active-assisted mobilization, strengthening of quadriceps and hamstring muscles, gait training with progressive weight-bearing and proprioceptive training. Four months later, he reported improvement of pain, but still showed limitation of 10° in right knee's flexion, with functional repercussion only in squatting. He had no limitations in daily activities. There were no signs of growth disorders. **Discussion:** While fractures of the infantile and adolescent distal tibia are common, the proximal tibia is rarely involved, due to high intrinsic stability. The mechanism of injury and the type of lesion are age-dependent. In late adolescence a flexion type injury is more usual, because the posterior part of the growth plate is usually closed and the anterior part is still open. Complications and neurovascular injuries are rare, and the result of treatment is generally good.

PP24

DIRECT ELECTRICAL STIMULATION OF THE INJURED ULNAR NERVE VIA ACUPUNCTURE NEEDLES COMBINED WITH REHABILITATION MAY ACCELERATE NERVE REGENERATION AND FUNCTIONAL RECOVERY – A CASE REPORT

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Introduction: Poor function recovery and long time of return to work (RTW) are the most common complaints for those who underwent immediate peripheral nerve repair surgery of upper extremities. Alternating current electrical stimulation (ACES) has been used to manage patients with peripheral nerve injury for the prevention of joint contractures but the nerve regeneration. Many studies already showed good recovery of nerve repair surgeries post direct electrical stimulation in animal and human models. This case study described a 32-year-old male suffering of total rupture of the right ulnar nerve. We used direct ACES and daily rehabilitating activities to see whether the recovery can be improved promptly. Patient case presentation The 32-year-old male suffered of total rupture of right proximal forearm ulnar nerve, and partial rupture of flexors. After 2 weeks of the repair surgery, the wound and the suture sites were in good condition so we started intervention of acupuncture combined with functional trainings. Direct ACES on the route of the injured ulnar nerve transmitted by the 2 acupuncture needles inserted in the cubital tunnel was applied. Other needles were placed according to the origins and insertions of the muscles. All needles were connected to electrical stimulators as electrodes. We executed these procedures one time per week and daily rehabilitating activities. The Rosén and Lundborg protocol, DASH scores and electromyography were used to

measure the outcomes. **Discussion:** The patient had distal ulnar nerve lacerated and immediate repair surgery. This may explain why the patient returned to the former job in 3 months and achieved satisfactory recovery in 6 months. Two probable mechanisms for the relation between the acceleration of axon regeneration and direct ACES are (1) axon outgrowth across the suture site, and (2) the number of newly regenerated motor units as well as the affiliated axons significant increase. No prominent side effects were found in the treatment course. **Conclusion:** Direct electrical stimulation of the injured nerve may augment nerve regeneration by three possible mechanisms. Though direct ACES contributed to dramatic effects with minimal adverse in this case, further investigation of treatment protocols and definite mechanism still needs to be established.

PP25

INSTITUTIONALIZED ELDERLY REHABILITATION – EFFECTS ON PHYSICAL FITNESS AND QUALITY OF LIFE

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Physical activity is important for healthy ageing and may help to maintain good function in older age. Institutionalization is often due to functional decline and institutions frequently do not provide activities to maintain or regain functionality. Exercise therapy is an important component of rehabilitation programs for elderly and helps reduce pain, improve joint stability, functional ability, muscle strength and endurance, and aerobic capacity; preventing bone loss and fractures, and improving or maintaining quality of life. This study aims to investigate if a physical exercise program improves self-perception of health status, physical fitness, muscle strength and body composition in a group of institutionalized elderly. A quasi-experimental study was conducted using the Portuguese version of the Short Form-36 Health Survey (SF-36v2), the Rikli Jones Senior Fitness Test, hand dynamometry and bioelectrical impedance before and after a physical exercise program. A total of 20 elderly aged 76.1±8.7 years with 18.3±13.3 months of institutionalization, participated in a two-month of physical exercise program. Results show that scores of SF-36v2 after the program had significantly increased in physical and mental components. They also increased significantly in scales such as physical functioning, bodily pain, vitality, social functioning, general health and mental health. Physical fitness results show that all components improve after the intervention. Noteworthy are aerobic endurance, lower flexibility, superior flexibility and agility, speed and dynamic balance all with statistical significance. An increase in muscle mass and a decrease in body fat, metabolic age, visceral fat and body water was observed, but without statistical significance. Bone mass had no changes. Physical exercise programs can contribute to improve physical status and self-perception of well-being leading to autonomy and confidence in performing daily living activities. In institutionalized elderly population this is a very important step towards independent life.

PP26

EXPERIENCE OF A MOBILISATION AND ACTIVE EXERCISE PROGRAM ON THE RANGE OF MOTION OF BEDRIDDEN PATIENTS WITH DISUSE SYNDROME

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Introduction: Disuse syndrome is a disorder that is most often associated with acute or chronic disease complications. Despite disuse