

Approach to illness prevention in athletes with spinal cord injuries

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Spinal cord injury (SCI) is a serious medical condition that causes functional, psychological and socioeconomic disorders. Acute and long-term secondary medical complications are common in patients with SCI. prevention, early diagnosis and treatment of chronic secondary complications in patients with SCI is critical and crucial for reducing these complications. This complications effect on exercise performance especially in para athletes. Post-SCI long term complications include respiratory, cardiovascular , urinary and bowel complications, spasticity, pain syndromes, pressure ulcers, osteoporosis and bone fractures.

Autonomic dysreflexia (AD) is a well-known medical emergency. It generally occurs in patients with SCI at levels of T₆ and above. AD is characterized by its chronic stage but may appear any time after SCI. AD is caused by spinal reflex mechanisms initiated by a noxious stimulus entering the spinal cord below the level of injury. Bladder distension during competition is the most common triggering factor for AD. An important part of the successful management of AD before competition is prevention. It is reported that education of the athletes plays an important role in prevention before competition.

Chronic pain is one of the most frequent secondary complications for individuals with SCI, which up to 80% of patients with SCI suffer from it according to the reports. Neuropathic pain can occur above the level, at the level or below the level of injury. Above-the-level neuropathic pain may arise from complex regional pain syndromes and compressive mononeuropathies. Neuropathic pain relief in patients with SCI can be complicated and requires a multifaceted approach. Medications, surgical interventions, the use of modalities and psychotherapy are included in this approach.

Osteoporosis occurs rapidly in the first 12-18 months but continues for several years. A significant decrease in bone mineral density has been reported in athletes with chronic SCI. Several factors that lead to on set may include insufficient nutritional support, disordered vasoregulation, hypercortisolism (either therapeutic or stress-related), alterations in gonadal function and other endocrine disorders. Fracture sites appear around the knee, such as the distal femur or proximal tibia. Non-pharmacological treatment methods such as standing-up, orthotically aided walking, weight - bearing physical exercises, functional electrical stimulation and pulsed electromagnetic fields have been studied in literatures.