AVOIDANCE OF ASSOCIATED SYMPTOMS OF SPINAL CORD INJURY

KEY POINTS

- Treat acute autonomic dysreflexia by sitting the patient upright, removing tight-fitting garments, correcting the inciting stimulus, and if needed, administering quick onset, short-acting antihypertensives to reduce blood pressure.
- Spasticity is managed with physical therapy, and in some cases, anti-spasticity medications.
- Use clinical judgment and a validated assessment tool to assess skin breakdown risks, and prevent decubitus ulcers by avoiding known modifiable risk factors such as pressure, shear force, and moisture to the skin.

Injury to the spinal cord can generate a number of medical complications, including dysautonomia, muscle spasm and spasticity, and decubitus ulcer or pressure injury. While these complications may first occur during acute hospitalization or rehabilitation, they often remain problematic for the patient throughout their life. Prevention, early recognition, and timely treatment of these complications are essential to optimize patient outcomes. Upon hospital or rehabilitation discharge educate patients and their caregivers on the cause, prevention, and appropriate interventions when one of these potential complications occur.

Autonomic Dysreflexia

Autonomic dysreflexia (AD) or autonomic hyperreflexia can occur in both complete and incomplete SCI, usually above level T6.[1] The condition consists of an uninhibited sympathetic response to a precipitating physiologic stimulus below the level of the spinal cord lesion, e.g., bladder distension, pressure sores, occult fractures, or bowel impaction. Sympathetic hyperactivity causes vasoconstriction below the spinal cord lesion, leading to a dramatic rise in blood pressure, followed by a compensatory parasympathetic response that causes vasodilation above the injury with or without bradycardia.[2,3] AD manifests most commonly as headache, diaphoresis, flushing, anxiety, nausea, and nasal congestion.[4] If not treated, hypertension can cause potentially life-threatening stroke, seizures, myocardial infarction, or pulmonary edema.[5] Treatment of acute AD consists of reducing the blood pressure by sitting the patient upright, followed by removal of tight-fitting garments, and correction of the inciting stimulus (most commonly fecal impaction or an obstructed indwelling urinary catheter). If hypertension persists despite nonpharmacologic interventions, administer a short-acting antihypertensive (e.g., nifedipine, captopril) with quick onset.[3] Prevention of AD is focused on avoiding potential precipitants.

Spasticity

Spasticity is an upper motor neuron syndrome that occurs after SCI, resulting in hyperexcitability of the tonic stretch reflex, which manifests as increased muscle tone in response to passive stretch.[6] Spasticity can worsen quality of life by impairing activities of daily living and causing pain, immobility, and muscle spasms.[7] It is important to note that symptoms of spasticity may also be beneficial by enhancing stability for sitting, standing, dressing, and transfers. Management must carefully strike a balance to optimize functional outcome.[6] With the combination of immobility and spasticity, muscles resting in a shortened position for prolonged periods can form contractures, due to reorganization of the collagen matrix.[8,9]

Physical therapy is a mainstay of treatment. Strengthening exercises, postural management, manual stretching, and orthoses are treatments used to maintain range of motion and prevent contractures.[10]

Although rehabilitation is the first-line management of spasticity, anti-spasticity medications are often prescribed to patients with SCI, despite limited efficacy in clinical trials. Consider pharmacologic agents as an adjunct in patients with debilitating spasticity, despite physical therapy interventions. Patients have an individualized response to each medication, so the ideal regimen is often determined empirically. Baclofen, an agonist in the GABAergic system, is the most commonly used agent. If effective, it is administered orally or injected intrathecally long-term using an implantable infusion pump. Baclofen reportedly helps most with flexor spasms.[6] Monitor patients with implanted pumps for signs of withdrawal due to pump failure, a clinical emergency.