Care for the Rehospitalized Patient with Chronic Spinal Cord Injury

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KEYWORDS

• Spinal cord injury • Dysreflexia • Respiratory insufficiency • Pressure ulcer • Muscle spasticity • Neurogenic bladder • Neurogenic bowel • Rehospitalization

HOSPITAL MEDICINE CLINICS CHECKLIST

1. Autonomic dysreflexia occurs in patients with spinal cord injury (SCI) levels above T6 and presents with hypertension, headache, sweating, and other more severe symptoms. Treatment includes symptomatic management and elimination of noxious causative stimuli.
2. Respiratory disease (most commonly pneumonia) is the leading cause of death among patients with SCI because of altered respiratory mechanics, depending on the level of injury.
3. Pressure ulcers are the leading cause of rehospitalization among patients with SCI and prevention is important. Careful evaluation of wheelchair seating and bed surfaces can help with recognizing the cause of ulcer formation.
4. Neuropathic pain after SCI is common. The first-line treatment of neuropathic pain remains gabapentin for its cost-effectiveness and low side effect profile.
5. Spasticity after SCI is common. Treatment depends on its effect on quality of life because it can interfere with activities of daily living and cause pain. Before initiating therapy, exogenous causes of spasticity must be ruled out (nociceptive stimuli).

INTRODUCTION

Patients with spinal cord injury (SCI) have a unique group of needs. The unusual and complex physiology after SCI can be a challenge for hospitalists and primary care

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Hosp Med Clin 3 (2014) e270–e292
http://dx.doi.org/10.1016/j.ehmc.2014.01.001
2211-5943/14/$ – see front matter

physicians taking care of rehospitalized patients with chronic SCI. As years after SCI increase, the burden of complications increases as well. Pressure ulcers, abnormal renal function, nephrolithiasis, lower extremity fractures, and autonomic dysreflexia all gradually increase in frequency.[1] Patients with SCI are also hospitalized for pneumonia and other conditions similar to those experienced by patients without SCI, but their presentation and management can differ from standard treatments. This article gives internal medicine specialists an overview of those unique issues to facilitate recognition and treatment.

1. How are SCIs anatomically defined?

A spinal cord injury is generally described by the lowest level of the spinal cord with normal function (ie, the dermatomes and myotomes below that level are all affected to some extent) (**Fig. 1**). SCI is also described by its severity; either complete or incomplete. In the setting of an acute SCI a complete injury does not imply spinal cord transection, but instead suggests that the degree of spinal cord damage is severe and the prognosis for significant recovery is limited. For almost all acute traumatic SCIs, recovery plateaus by 2 years after the injury.[2] However, as many as 7% of acute traumatic SCI survivors experience significant neurologic deterioration between 1 and 5 years after the SCI.[3] Individuals with complete SCI are at increased risk for complications related to SCI.[1] Chronic, incomplete SCI can range from mild persistent deficits such as subtle weakness and balance changes to severe persistent weakness with only a slight degree of sensory function in the sacral 4 and 5 dermatomes. An overview of SCI classification is presented in **Table 1**, and detailed discussions are available elsewhere.[4] Some unique, incomplete syndromes are presented in **Fig. 2**.

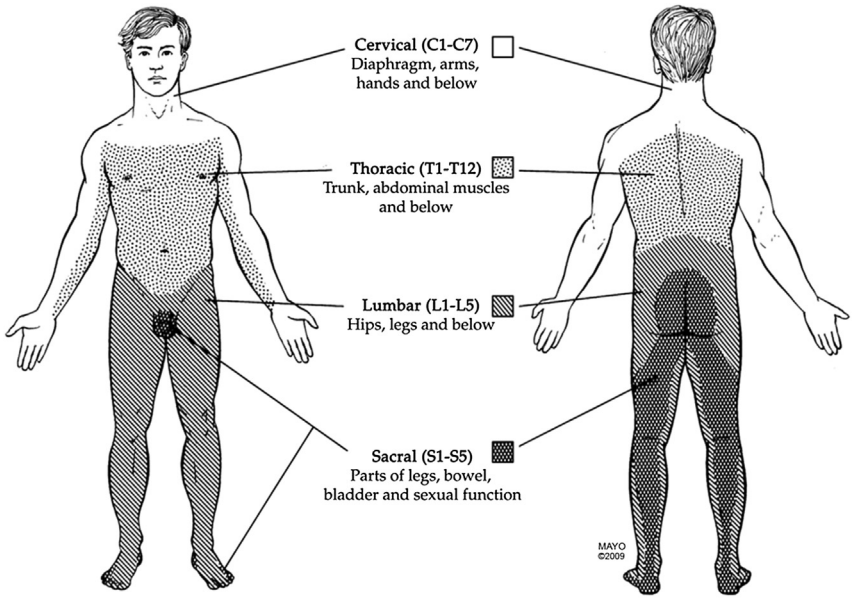

Fig. 1. SCI levels. (*From* Mayo Clinic. Body temperature control: spinal cord injury. Rochester (MN): Mayo Foundation for Medical Education and Research; 2009. p. 1–6.)