

Standardizing the evaluation and management of neuropathic pain following spinal cord injury

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Patients with spinal cord injury (SCI) commonly experience neuropathic pain. Indeed, a Canadian survey found neuropathic pain to be the most common complication post-SCI.¹ The prevalence of pain below the level of the lesion has been reported as 34%; at the level of the lesion, it has been reported as 42%.² Neuropathic pain, which arises due to a lesion or disease in the somatosensory nervous system,³ frequently interferes with sleep, rehabilitation, return to work, health-related quality of life and participation in social activities. Responding to a long-standing need for evidence-based guidance to help clinicians treat this troubling condition, an international panel of experts, the CanPain SCI Working Group, recently developed the first Canadian clinical practice guideline to inform the management of at- or below-level neuropathic pain after SCI in a rehabilitation setting.⁴⁻⁷ The guideline is an excellent, concise resource that also usefully outlines what still needs to be done to strengthen the evidence on which future guidance is based.

Neuropathic pain related to SCI is challenging for clinicians to manage. It is often difficult to achieve pain control in the long term. Just one-third of patients experience a 50% reduction in pain with treatment.⁸ Currently, assessment, diagnosis and management of neuropathic pain following SCI is not consistent or standardized. In addition to a lack of uniformity in assessment and management, community clinicians also suggest that they lack training, knowledge and specialist access to adequately treat post-SCI pain.⁹ A recent environmental scan in Canada showed substantial regional differences in approach to management, with few regions endorsing the use of any treatment guidelines for neuropathic pain.¹⁰ Differences between clinical centres in Canada in the identification and management of neuropathic pain, and different levels of resources, makes research difficult owing to poor consistency in outcome indicators. Clinicians may not be clear on how to best classify and document neuropathic pain after SCI to accurately detect response to treatment, communicate effectively across providers and follow the patients longitudinally over their recovery continuum. A gap exists between the evidence for treatment of neuropathic pain and clinical practice.

The recently published clinical practice guideline for screening and diagnosis⁵ recommends the use of the International Spinal Cord Injury Pain classification of neuropathic pain to standardize communication between providers and to enable the systemic description

KEY POINTS

- Neuropathic pain is a common complication after spinal cord injury, and can interfere with sleep, rehabilitation, return to work, quality of life and participation in social activities.
- The CanPain SCI clinical practice guideline is an excellent, concise resource for any clinician treating neuropathic pain in patients after spinal cord injury.
- Quality evidence with larger sample sizes and multicentre randomized control trials are needed in many domains to further strengthen recommendations.

of pain in patients with SCI. The International Spinal Cord Injury Pain Basic Data Set tool (version 2.0) provides a concise way to document pain related to SCI, based on the minimal amount of data that can be collected in clinical practice. The guideline also includes a screening and diagnosis algorithm that help clinicians to determine whether additional assessment is needed. Red flags highlight where further investigation may be required. This list can be helpful, particularly if a clinician is not an expert in SCI medicine, to keep the differential of reversible causes of neuropathic pain broad. The guideline also prompts clinicians to practice the biopsychosocial approach in SCI medicine and to incorporate a patient's concerns, expectations, function and mood into the assessment.

Another section of the guideline⁶ informs the clinical management of neuropathic pain. The guideline provides the first concrete, evidence-based, pharmacologic and nonpharmacologic guidance specific for adult patients with SCI who are undergoing rehabilitation. In addition to advocating for an interdisciplinary approach and a focus on patient education, the guideline lays out a step-wise recommended approach to the treatment of neuropathic pain: first line (pregabalin, gabapentin, amitriptyline), second line (tramadol, lamotrigine [in incomplete SCI]), third line (transcranial direct current stimulation with or without visual illusion) and fourth line (oxycodone, TENS, dorsal root entry zone procedure). The guideline supports decision-making in a Canadian context and is formulated based specifically on SCI literature. This is important, because the general approach to neuropathic pain does not apply to patients with SCI, particularly as the pathophysiology of the pain may not be the same as peripheral causes.

The new guideline helps to establish future research directions as substantial gaps in evidence remain. Quality studies with larger sample sizes and multicentre randomized control trials are needed in many domains to strengthen recommendations. Features that may have relevance for treatment response in people with SCI include neuropathic pain subtype, pain intensity, pain interference, level or severity of SCI, duration of pain or SCI, cause of SCI, presence of depressive symptoms and other medical history including comorbidities and concurrent medications. However, relevant subgroup analyses have not yet been conducted in existing studies, and future studies should plan such analyses. Understanding the adverse effect profiles of the various medications is also important for patients with SCI, and should inform future guideline updates. For example, medications with anticholinergic properties, such as tricyclic antidepressants, can adversely affect neurogenic bowel and bladder control, which are critically important for quality of life in persons with SCI. The recently published clinical practice guideline usefully identifies top priorities for further research in the pharmacologic treatment of neuropathic pain in patients with SCI, including research into gabapentin, amitriptyline, opioids, cannabinoids, selective serotonin and norepinephrine reuptake inhibitors and topical agents.

Theory-driven implementation strategies need to be employed to successfully move the guidelines into clinical practice. An important barrier to implementation is the allocation of resources; continued advocacy for further funding to support higher-quality research and translation into clinical settings is critical.

Clinicians in Canada can use the new clinical practice guideline to improve the quality and equitability of care offered to their patients who experience neuropathic pain after SCI. Researchers are offered an important opportunity to address the limitations of evidence to guide treatment of neuropathic pain in this particular patient population.

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