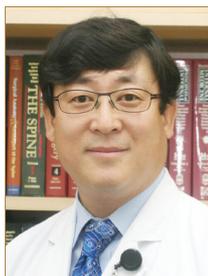




Editorial



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Finding a Better Way to Manage Cervical Spine Trauma and Spinal Cord Injury

Traumatic injuries are major contributors to death and disability, and the cervical spine is the region most commonly affected by traumatic spinal cord injury (tSCI), leading to life-long disabling neurological sequelae for individuals and a considerable economic burden on society.¹⁻³ In a recent global analysis of traumatic spinal injury (TSI), it was found that the cervical spine was most commonly involved area, accounting for 39% to 53% of TSI in most regions, whereas the lumbosacral spine was the least commonly injured.⁴ The incidence of TSI was higher in low- and middle-income countries than in high-income countries, and road traffic accidents, followed by falls, were the most common mechanism of TSI worldwide. Nevertheless, the incidence of TSI from low falls in the elderly is increasing in high-income countries due to aging populations and increasing life expectancies.⁴

In a retrospective multicenter cohort study, spinal cord injury (SCI) was present in 7.5% of severely injured patients; in other words, every 13th patient with major trauma had an SCI.² The overall prevalence of cervical spinal injury among all trauma patients was 3.7%. The prevalence of cervical spinal injury in alert patients was 2.8%, whereas clinically unvaluable patients were at a higher risk of cervical spinal injury, with a prevalence of 7.7%.⁵

In the current special issue of *Neurospine*, readers will find the recommendations of the World Federation of Neurosurgical Societies (WFNS) Spine Committee for cervical spine trauma and SCI.

In patients with cervical spine trauma and cervical tSCI, early detection, prevention of neurological deterioration, and proper management are essential. Objective, quantifiable, and novel classification systems that are easy to remember and can be utilized by different providers are needed to design appropriate treatment algorithms and better understand treatment outcomes for cervical spine trauma and tSCI.

The primary goals in the treatment of cervical spine trauma and cervical tSCI are to reverse neurological injury, prevent secondary injury, and restore spinal integrity.^{2,3} Although the diagnosis and treatment of cervical spine trauma have evolved rapidly over the past decade, tSCI still remains a challenging problem with a poor long-term prognosis for both patients and society because most spinal cord injuries occur in young people in the prime of life.⁶

Regarding surgical treatment, the timing of spinal cord decompression appears to affect functional outcomes in patients with tSCI, as do age and initial severity of the neurological injury.^{1,3,7} Surgical decompression within 24 hours was found to be associated with clinically meaningful neurological improvement of at least 2 American Spinal Injury Association grades in patients with complete cervical tSCI. In contrast, surgical timing did not significantly affect neurological outcomes in patients with incomplete cervical tSCI.³



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Unfortunately, there is no effective pharmacological agent or regenerative cell therapy with high-level evidence that can be administered to patients with acute SCI. The results of current clinical trials need to be carefully evaluated and applied in actual clinical practice in the future. Further experimental and human trials are still needed before pharmacological and regenerative cell therapy can be recommended.

The WFNS Spine Committee has recently held several consensus meetings using the Delphi method and has published recommendations on specific spinal disorders, such as cervical spondylotic myelopathy, ossification of the posterior longitudinal ligament, lumbar spinal stenosis, cervical spine trauma, and SCI. Controversy persists regarding the optimal treatment of spinal disorders. Continued high-level research and better reporting of outcomes, however, are required to find a better way to manage spinal disorders and to work toward more standardized treatments.

In this editorial, I would like to extend my deep gratitude to all members of the WFNS Spine Committee for their prominent collaboration and contributions to the committee and the outcomes, and I eagerly anticipate further recommendations.

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