



Editorial



Commentary on “Hemodynamic Management of Acute Spinal Cord Injury”

Nader Hejrati¹, Michael G. Fehlings^{1,2,3}


¹Division of Genetics and Development, Krembil Research Institute, University Health Network, Toronto, ON, Canada

²Institute of Medical Science, University of Toronto, Toronto, ON, Canada

³Division of Neurosurgery, Department of Surgery, University of Toronto, Toronto, ON, Canada

Corresponding Author

Michael G. Fehlings

 <https://orcid.org/0000-0002-5722-6364>

Toronto Western Hospital, 399 Bathurst Street, Suite 4W-449, Toronto, ON, Canada
Email: Michael.Fehlings@uhn.ca

See the article “Hemodynamic Management of Acute Spinal Cord Injury: A Literature Review” via <https://doi.org/10.14245/ns.2040144.072>.

The review article by Lee et al.¹ addresses a topic of significant importance in the extensively multifaceted management of patients suffering from acute spinal cord injuries (SCIs). It has been almost three decades since the term *secondary injury* was recognized as the most crucial pathophysiological process influencing clinical outcomes in the postinjury period.² Ischemia due to compromised spinal cord perfusion was shown to be one of the major components of the secondary injury cascade. This finding led to one of the most essential components of acute SCI management, in that adequate spinal cord perfusion shall be maintained through avoidance of systemic hypotension and support of mean arterial pressure (MAP).

And yet, around 20 years later, the best evidence we have on the hemodynamic management of acute SCIs was outlined in the 2013 American Association of Neurological Surgeons and Congress of Neurological Surgeons guidelines and is of class III: In the intensive care unit or an analogous monitoring setting, avoidance of systemic hypotension is achieved by maintaining a systolic blood pressure of >90 mmHg, while the MAP has to be maintained between 85 and 90 mmHg for the first 7 days of the postinjury period.³

Legitimately, there are ongoing debates about the implementation of these class III recommendations: First, depending on concomitant injuries, patient age, and comorbidities, the side effects of using intravenous (IV) fluids or vasopressors to maintain the MAP within the recommended range might outweigh their benefits of preserving spinal cord perfusion. In these cases, hemodynamic management may need to be adapted according to the patient status. Secondly, the current evidence is sparse regarding whether patients with different American Spinal Cord Injury Association Impairment Scale scores necessitate the same degree of monitoring and hemodynamic management. In addition to the side effects related to the application of IV fluids or vasopressors, the invasive monitoring setting hinders early mobilization, which is an important measure to reduce the risk of cardiovascular, respiratory, and dermatologic complications.

Although invasive technologies such as intrathecal pressure monitors and epidural near-infrared spectroscopy sensors have not yet attracted wide attention in everyday clinical practice, they provide us with real-time information that can help us in guiding patient-specific therapy. However, the usefulness and risks of these technologies need further evaluation. Eventually, as already stated by Lee et al.,¹ further studies are required to provide tailored, ev-



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idence-based guidelines on the hemodynamic management of acutely spinal cord injured patients. This becomes increasingly important as the field moves toward embracing the concept of “Time is Spine” and recognizing the importance of early surgical and neuroprotective interventions to enhance potential recovery after SCI.^{4,5}

Moreover, the heterogeneity of patient presentation and the complex, varied clinical features of patients, including older individuals with medical comorbidities, presents the need to develop customized evidenced-based approaches to all facets of SCI treatment including hemodynamic management.⁶

CONFLICT OF INTEREST

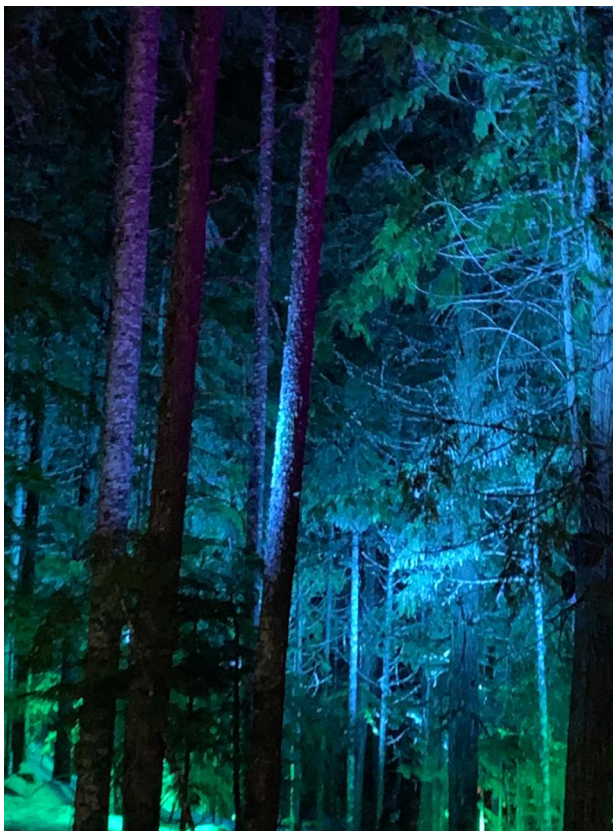
The authors have nothing to disclose.

ACKNOWLEDGMENTS

MGF is supported by the Gerry and Tootsie Halbert Chair in Neural Repair and Regeneration.

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Title: Northern forest illuminated by the Northern Lights
Year: 2021
Artist: Michael G. Fehlings