## REVIEW



Check for updates

# Clinical practice guideline on spinal stabilisation of adult trauma patients: Endorsement by the Scandinavian Society of Anaesthesiology and Intensive Care Medicine

Arvi Yli-Hankala<sup>1,2</sup> | Michelle S. Chew<sup>3</sup> | Klaus T. Olkkola<sup>4</sup> | Marius Rehn<sup>5,6,7</sup> | Kristinn Ö. Sverrisson<sup>8</sup> | Morten H. Møller<sup>9,10</sup> |

#### Correspondence

Arvi Yli-Hankala, Department of Anaesthesia, Tampere University Hospital, POB 2000, FIN-33521 Tampere, Finland. Email: arvi.yli-hankala@pshp.fi

Funding information
Funding was provided solely from the
Scandinavian Society of Anaesthesiology
and Intensive Care Medicine and
institutional and / or departmental sources.

#### **Abstract**

The Clinical Practice Committee of the Scandinavian Society of Anaesthesiology and Intensive Care Medicine endorses the clinical practice guideline New clinical guidelines on the spinal stabilisation of adult trauma patients—consensus and evidence based. The guideline can serve as a useful decision aid for clinicians caring for patients with traumatic spinal cord injury. However, it is important to acknowledge that the overall certainty of evidence supporting the guideline recommendations was low, implying that further research is likely to have an important impact on the confidence in the estimate of effect.

# 1 | BACKGROUND

Traumatic spinal cord injury (TSCI), although relatively rare, can lead to serious and permanent disability. The immediate treatment of patients suspected of having TSCI includes swift and careful prehospital management and transportation to definitive care. Traditionally, a key point in the prehospital care of patients with TSCI is to avoid secondary injury, which is why stabilisation of the spinal cord has

been considered paramount. <sup>2,3</sup> Since the 1960s, hard backboard and rigid cervical collar have been broadly adopted by prehospital medical services worldwide. <sup>4,5</sup> Recently, however, their value and safety have been questioned. <sup>6,7</sup>

Recently, a Danish interdisciplinary working group systematically searched the existing literature, summarised the available evidence, and provided guidance on the prehospital procedures for spinal stabilisation of adult trauma patients.<sup>8</sup>

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2021 The Authors. Acta Anaesthesiologica Scandinavica published by John Wiley & Sons Ltd on behalf of Acta Anaesthesiologica Scandinavica Foundation

<sup>&</sup>lt;sup>1</sup>Department of Anaesthesia, Tampere University Hospital, Tampere, Finland

<sup>&</sup>lt;sup>2</sup>Faculty of Medicine and Health Technology, Tampere University, Tampere, Finland

<sup>&</sup>lt;sup>3</sup>Department of Anaesthesia and Intensive Care, Biomedical and Clinical Sciences, Linköping University, Linköping, Sweden

<sup>&</sup>lt;sup>4</sup>Department of Anaesthesiology, Intensive Care and Pain Medicine, University of Helsinki and Helsinki University Hospital, Helsinki, Finland

<sup>&</sup>lt;sup>5</sup>Division of Prehospital Services, Air Ambulance Department, Oslo University Hospital, Oslo, Norway

<sup>&</sup>lt;sup>6</sup>The Norwegian Air Ambulance Foundation, Oslo, Norway

<sup>&</sup>lt;sup>7</sup>Faculty of Health Sciences, University of Stavanger, Stavanger, Norway

<sup>&</sup>lt;sup>8</sup>Department of Anaesthesia and Intensive Care Medicine, Landspítali University Hospital, Reykjavík, Iceland

<sup>&</sup>lt;sup>9</sup>Department of Intensive Care, University of Copenhagen, Rigshospitalet, Copenhagen, Denmark

<sup>&</sup>lt;sup>10</sup>Collaboration for Research in Intensive Care (CRIC), Copenhagen, Denmark

#### 2 | METHODS

It was decided by the Clinical practice committee (CPC) of the Scandinavian Society of Anaesthesiology and Intensive Care Medicine (SSAI) to assess the clinical practice guideline New clinical guidelines on the spinal stabilisation of adult trauma patients—consensus and evidence based<sup>5</sup> for possible endorsement. The Appraisal of Guidelines for REsearch and Evaluation (AGREE) II tool<sup>9</sup> was used. Details on the endorsement process are available elsewhere.<sup>10</sup>

## 3 | RESULTS

All six SSAI CPC members completed the appraisal. The individual domain totals were as follows: Scope and Purpose, 79%; Stakeholder Involvement, 53%; Rigor of Development, 72%; Clarity of Presentation, 84%; Applicability, 49%; Editorial Independence, 83%; and Overall Assessment, 64%.

The breakdown of the individual appraisers (de-identified) is available in the Data S1.

## 4 | DISCUSSION

There was an acceptable agreement between the SSAI CPC appraisers in most domains. However, the appraisers identified significant limitations related to the stakeholder involvement and applicability domains of the guidelines. There was a lack of input from important stakeholders such as patients, nurses, caregivers, and spinal rehabilitation personnel. Also, as mentioned by the authors, the applicability of the guideline suffers from the lack of high-quality evidence, including data from randomised clinical trials. This implies that further research is likely to have an important impact on the confidence in the estimate of effect. Despite the overall low certainty of evidence supporting the guideline recommendations, we believe that this guideline can serve as a useful decision aid for clinicians caring for patients with traumatic spinal cord injury in the prehospital setting.

## 5 | CONCLUSION

The SSAI CPC endorses the clinical practice guideline New clinical guidelines on the spinal stabilisation of adult trauma patients—consensus and evidence based, acknowledging the low quality of evidence supporting its recommendations.

# CONFLICTS OF INTEREST

No Clinical Practice Committee member had direct or indirect conflicts of interest.

# ORCID

Arvi Yli-Hankala https://orcid.org/0000-0002-5029-9181

Michelle S. Chew https://orcid.org/0000-0003-2888-4111

Klaus T. Olkkola https://orcid.org/0000-0001-7872-8665

Marius Rehn https://orcid.org/0000-0001-9519-241X

Kristinn Ö. Sverrisson https://orcid.org/0000-0002-4824-6785

Morten H. Møller https://orcid.org/0000-0002-6378-9673

#### REFERENCES

- Karthik Yelamarthy PK, Chhabra HS, Vaccaro A, et al. Management and prognosis of acute traumatic cervical central cord syndrome: systematic review and spinal cord society-spine trauma study group position statement. Eur Spine J. 2019;28(10):2390-2407.
- National Association of Emergency Medical Technicians (U.S.). Pre-Hospital Trauma Life Support Committee., American College of Surgeons. Committee on Trauma. Spinal Trauma. In: Emerton C, editor. PHTLS® Prehospital Trauma Life Support, (8th ed, pp. 289-314). Burlington, MA: Jones & Bartlett Learning; 2016.
- American College of Surgeons' committee on trauma, international ATLS working group. Spine and spinal cord trauma. In: Merrick C, editor. Adv trauma life support tenth Ed, (10th ed., pp. 128-147). Chicago: American College of Surgeons. 2018.
- National Association of Emergency Medical Technicians (U.S.).
   Pre-Hospital Trauma Life Support Committee, American College of Surgeons. Committee on Trauma. Spinal Trauma. In: Emerton C, editor. PHTLS® Prehospital Trauma Life Support, (8th ed., pp. 289-314).
   Burlington, MA: Jones & Bartlett Learning; 2016.
- American College of Surgeons' committee on trauma, international ATLS working group. Spine and spinal cord trauma. In: Merrick C, editor. Adv trauma life support, (10th ed., pp. 128-147). Chicago: American College of Surgeons; 2018.
- Hauswald M, Ong G, Tandberg D, Omar Z. Out-of hospital spinal immobilization: its effect on neurologic injury. Acad Emerg Med. 1998;5(3):214-219.
- 7. Haut ER, Kalish BT, Efron DT, et al. Spine immobilization in penetrating trauma: more harm than good? *J Trauma Inj Infect Crit Care*. 2010;68(1):115-121.
- 8. Maschmann C, Jeppesen E, Rubin MA, Barfod C. New clinical guidelines on the spinal stabilisation of adult trauma patients-consensus and evidence based. *Scand J Trauma Resusc Emerg Med.* 2019;27(1):77.
- Brouwers MC, Kho ME, Browman GP, et al. AGREE II: advancing guideline development, reporting and evaluation in health care. CMAJ. 2010;182(18):E839-E842.
- Rehn M, Chew MS, Olkkola KT, Sverrison KÖ, Yli-Hankala A, Møller MH. Endorsement of clinical practice guidelines by the Scandinavian Society of Anaesthesiology and Intensive Care Medicine. Acta Anaesthesiol Scand. 2019;63(2):161-163.

## SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

How to cite this article: Yli-Hankala A, Chew MS, Olkkola KT, Rehn M, Sverrisson KÖ, Møller MH. Clinical practice guideline on spinal stabilisation of adult trauma patients: Endorsement by the Scandinavian Society of Anaesthesiology and Intensive Care Medicine. *Acta Anaesthesiol Scand.* 2021;00:1–2. <a href="https://doi.org/10.1111/aas.13933">https://doi.org/10.1111/aas.13933</a>