TITLE: Removal of Spine Boards Prior to X-Ray Clearance for Patients in the Emergency Department: Clinical Evidence and Guidelines

DATE: 15 April 14, 2011

RESEARCH QUESTIONS

1. What is the clinical evidence regarding the removal of patients from hard spine boards prior to confirmation of cervical spine clearance via x-ray in emergency departments?

2. What are the evidence-based guidelines regarding the safety and improved patient comfort resulting from the removal of patients from hard spine boards prior to confirmation of cervical spine clearance via x-ray in emergency departments?

KEY MESSAGE

Evidence suggests that patients may be removed from hard spine boards as soon as possible upon arrival at the emergency department; one guidelines states radiographic assessment is not required for the assessment of the cervical spine in asymptomatic patients after trauma.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (Issue 3, 2011), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI (Health Devices Gold), EuroScan, Canadian and major international health technology agencies, and a focused Internet search. The search was limited to English language articles published between January 1, 2001 and April 4, 2011. No filters were applied to limit the retrieval by study type. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.
RESULTS

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, and evidence-based guidelines.

One systematic review, one non-randomized study, and two evidence-based guidelines were identified regarding the removal of patient from hard spine boards prior to confirmation of cervical spine clearance via x-ray in emergency departments. Additional articles that may be of interest can be found in the appendix.

OVERALL SUMMARY OF FINDINGS

One systematic review\(^1\) aimed to determine optimal methods of immobilization for patients with acute spinal cord injury in the pre-hospital. The authors of the review presented recommendations regarding patient immobilization, patient transfer from spinal board as soon as possible in the emergency department, and training of emergency personnel to determine if these patients were clear of spinal injury. The recommendations made by the authors were not presented in the published abstract of the review. More information may be available from the full text document.

One non-randomized study\(^2\) had triage nurses apply the Nexus clinical decision rules in the emergency department to assess patients and determine whether cervical collars or spinal boards could be removed after triage. More than half (59 of 112) of the patients assessed were determined to be low risk and were removed from immobilization. None of these patients went on to be diagnosed with a significant spinal injury or experience adverse effects after removal.

The identified evidence-based guidelines\(^3,4\) recommend patients should be transferred from spinal boards onto a firm padded surface as soon as possible after arrival in the emergency department.\(^3\) Spinal alignment should be maintained at all times. The second guideline states that radiographic assessment is not required for the assessment of the cervical spine in asymptomatic patients after trauma.\(^4\)
REFERENCES SUMMARIZED

Health technology assessments
No literature identified.

Systematic reviews and meta-analyses


Randomized controlled trials
No literature identified.

Non-randomized studies


Guidelines and recommendations


PREPARED BY:
Canadian Agency for Drugs and Technologies in Health
Tel: 1-866-898-8439
www.cadth.ca
APPENDIX – FURTHER INFORMATION:

Hospital guidelines and treatment pathways

   See: Spinal boards


Review articles


   PubMed: PM11310463

Additional references

   PubMed: PM21284880

   PubMed:PM14695411

   PubMed: PM12454543