



Optimizing Surgical and Medical Management in Traumatic Spinal Cord Injury

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Introduction

The optimal surgical and medical management of traumatic spinal cord injuries (SCI) is continually evolving. Studies have suggested improved neurologic outcome with augmentation of the mean arterial pressure (MAP) =85 mmHg for 5-7 days post-SCI (class III evidence). Other studies have suggested improved outcomes for patients undergoing early (defined as < 24 hours post injury) surgical intervention. We sought to investigate the extent to which these interventions affected neurological recovery in a controlled population.

Methods

The Nova Scotia Trauma Database identified 164 cases of traumatic SCI between 2006-2010, of which 94 patients met inclusion criteria. Follow-up data was available at three different time points (average 1, 3.8 and 8.7 months post injury). Neurological recovery was measured using the American Spinal Cord Injury Association (ASIA) Injury Scale (AIS).

Results

One month post-injury, patients with MAP <85mmHg for at least 2 consecutive hours during the 5-day period post-injury were 10.7 times more likely to not have an improvement in the AIS grade when compared to patients with MAP =85mmHg (P=0.007, Fisher’s Exact P=0.02). This association was independent of early surgery or severity of SCI. At a mean of 8.7 months post injury, patients with early surgical decompression (=24 h) had a statistically significant improved neurologic outcome (P=0.009). This was more pronounced in the cervical SCI population.

Conclusions

This study provides evidence favoring early surgical decompression and maintaining MAP =85 mmHg for at least 5 consecutive days post-SCI.

Learning Objectives

By the conclusion of this session, participants should be able to:

- 1) understand the evidence underlying timing of surgical decompression for patients with acute traumatic spinal cord injury.
- 2) appreciate the rationale for maintenance of MAP goals =85mmHg for 5-7 days in traumatic spinal cord injury patients.

References

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