Surgical Trial in Acute Spinal Cord Injury Study (STASCIS)

The results of the STASCIS trial investigating the outcomes of early (< 24 h) vs. late (~48 h) extradural surgical decompression of spinal cord injury (SCI), has shed light on the current debate.

In this study involving 313 patients diagnosed with acute cervical SCI, approximately 20% of those who underwent extradural surgical decompression within 24 h of injury experienced a 2 grade or greater improvement on the ASIA impairment scale compared with approximately 9% in those patients with delayed decompressive surgery. It was also observed that systemic complications, particularly involving the cardiopulmonary and urinary systems, were reduced in patients who underwent early extradural surgical decompression at 24.2% compared to those with delayed decompression at 30.5%. Based on the aforementioned literature, the authors of this study focused on the appraisal of clinical and experimental studies in which surgical intervention was performed within 24 h in patients presenting with acute SCI. Nevertheless, further animal studies are necessary to establish a potential treatment algorithm as well as determine the optimal therapeutic window and surgical technique [1].

A cost utility analysis (CUA) was undertaken to compare early (≤24 hours since trauma) versus delayed surgical decompression of spinal cord in order to determine which approach is more cost effective in the management of patients with acute traumatic cervical spinal cord injury (SCI).

A study includes the patients enrolled into the Surgical Trial in Acute Spinal Cord Injury Study (STASCIS). Cases were grouped into patients with motor complete SCI and individuals with motor incomplete SCI. A CUA was performed for each group of patients using data for the first 6 months after SCI. The perspective of a public health care insurer was adopted. Costs were estimated in 2014 US dollars. Utilities were estimated from the STASCIS.

The baseline analysis indicates early spinal decompression is more cost-effective approach when compare to the delayed spinal decompression. When considering the delayed spinal decompression as the baseline strategy, the incremental cost-effectiveness ratio (ICER) analysis revealed a saving of US$ 58,368,024.12 per quality-adjusted life year (QALY) gained for patients with complete SCI and a saving of US$ 536,217.33 per QALY gained in patients with incomplete SCI for the early spinal decompression. The probabilistic analysis confirmed the early-decompression strategy as more cost effective than delayed-decompression approach, even though there is no clearly dominant strategy.

The results of this economic analysis suggests that early decompression of spinal cord was more cost effective than delayed surgical decompression in the management of patients with motor complete and incomplete SCI, even though no strategy was clearly dominant [2].

1)
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2)
Furlan JC, Craven BC, Massicotte EM, Fehlings MG. Early versus Delayed Surgical Decompression of Spinal Cord after Traumatic Cervical Spinal Cord Injury:A Cost-Utility Analysis. World Neurosurg. 2016 Jan 7. pii: S1878-8750(15)01779-9. doi: 10.1016/j.wneu.2015.12.072. [Epub ahead of print] PubMed

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