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Early versus delayed surgical decompression in acute traumatic spinal cord injury: Does it impact the quality of life?

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Background: The impact of the timing of surgical decompression on neurological outcomes after traumatic spinal cord injury (SCI) remains unclear. Since quality of life (QOL) is the goal of SCI rehabilitation and used as an outcome measure in other fields, it may provide additional insight into the effects of surgical decompression timing.

Research question: Does early surgical spinal decompression (≤ 12 hours) result in a superior QOL after 12 months in comparison to late surgical spinal decompression (>12 hours and <14 days)?

Design: A secondary analysis was conducted using the SCI-POEM database, a prospective, multicentre cohort study assessing acute surgical decompression efficacy following SCI.

Methods: Patients were categorized based on decompression timing: early (<12 hours) and delayed (>12 hours and <14 days). QOL was assessed using the WHOQOL-BREF questionnaire at 6 and 12 months post-injury. A linear mixed model adjusted for baseline differences and SCI characteristics.

Results: The early group consisted of 126 patients, while the delayed group included 100 patients. Patients in the early group had significantly greater neurological impairment at baseline. Both unadjusted and adjusted analyses revealed no significant differences in any of the WHOQOL-BREF domains between the two groups at 6 and 12 months post-injury.

Discussion: This study found no significant differences in QOL between early and delayed surgical decompression, suggesting that earlier decompression does not lead to clinically meaningful improvements. Given the mixed results on neurological outcomes following early surgical decompression, evaluating QOL and other non-neurological factors is important to understand how therapeutic interventions affect patients' lives.