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Surgical timing in adults patients with SCIWORET: A retrospective single-center study

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Background: Spinal Cord Injury Without Radiological Elements of Trauma (SCIWORET) is a type of spinal cord injury in adults patients with cervical spondylosis and cervical spine injury without evidence of bony or ligamentous traumatic lesions. Its management presents some controversies, particularly the surgical timing of its treatment is still a matter of debate.

Research question: To investigate the optimal surgical timing in adult patients with SCIWORET

Design: Retrospective monocentric study

Methods: We retrospectively reviewed patients who underwent surgical treatment for SCIWORET at our center from May 2017 to January 2023. We enrolled 64 patients (47 male, 17 female); neurological status was assessed with ASIA (American Spinal Injury Association) score before injury and at 12 months follow-up.

Results: We divided patients in three groups: 28 patients treated before 3 days, 8 treated between 3-7 days, and 28 after 7 days. The three populations are homogeneous and there are no significant differences in terms of age, sex, pre-operative ASIA motor and sensory scores. We observed an average improvement in the motor and sensory ASIA score of 15.44 and 32.05 in the population treated within 7 days, while of 8.52 and 13.04 in the population treated beyond 7 days, with a statistically significant difference (p-value of 0.0294 and 0.0074 respectively). Instead, considering 72 hours as the cut-off, we observed an average improvement in the motor and sensory ASIA score of 16.11 and 35.92 in the population treated within 72 hours while of 9.67 and 14.63 in the population treated beyond 72 hours with a statistically significant difference (p-value of 0.042 and 0.0017 respectively).

Discussion: Our data suggests that surgery within 3 days of trauma in SCIWORET patients leads to a better neurological outcome at 12 months. Multicentric studies are needed in order to increase evidence about this topic.