

Multicenter Study of the Relationship between Mortality and Acute Spinal Cord Injury

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Introduction

Surgical decompression can facilitate recovery in spinal cord injury (SCI) patients; still unknown is the relationship between mortality and specific SCI factors. We analyzed mortality and SCI in relation to level and grade of injury, age, and gender to delineate demographic or neurological trends.

Methods

Review of 43 patients who died during the Sygen® trial, which was a randomized multicenter study assessing the influence of GM-1 ganglioside on neurologic recovery after SCI. Age, gender, fracture level, and cause and severity of injury were analyzed. Patients were divided by age (=29 years, =30 years), injury level, and severity.



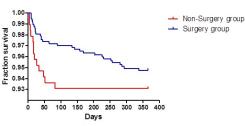


Figure 2: Kaplan-Meier Survival
Estimates of Surgical and Non-surgical
Patients with Cervical SCI

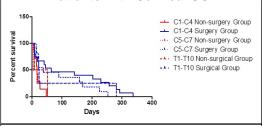
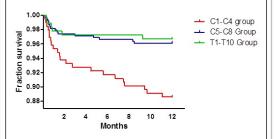


Figure 3: Kaplan-Meier Survival Estimates at Different Spinal Levels



Results

Of 760 patients, 43 died within one year (mortality 5.66%). Of 43 deaths, 30 (27 male) underwent surgery; 13 (9 male) did not. Of 43 deaths, 37 (86.05%) were cervical and 6 (13.95%) were thoracic. Of 579 cervical injuries, 37 (6.39%) were fatal; of 181 thoracic, 6 (3.31%) were fatal. Of 760 patients, 37 (4.87%) with cervical injuries died, compared to 6 (0.79%) thoracic. Of 43 deaths, 16 (37.21%) were C4; 8 (18.60%) C5; 5 (11.63%) C7; 3 (6.98%) each C3 and T8. Of 43 deaths, 34 (79.07%) were Grade A; 4 (9.3%) B, and 5 (11.63%) Grade C+D. Of 482 Grade A patients, 34 (7.05%) died; of 131 Grade B, 4 (3.05%); and of 147 Grade C+D, 5 (3.40%). Of 760 patients, 34 (4.47%) Grade A died; 4 (0.53%) Grade B; and 5 (0.66%) Grade C+D. In 30 surgical mortality patients (24 Grade A), 11 (36.67%) at C4 died; 7 (23.33%) at C5; and 3 (10%) each C7 and T8. In 13 nonsurgical mortality patients (10 Grade A), 5 (38.46%) at C4 and 2 (15.38%) at C7 died.

Conclusions

Surgical decompression can decrease mortality and prolong patients' lives, especially for patients with cervical AIS Grade A SCI.

References

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