

Risk Factors And Mortality Prevention: An Analysis Of Hospital Mortality In Thoracolumbar Spinal Cord Injuries In 525 Cases In Germany.

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INTRODUCTION: This study aims to analyze the relationships between comorbidities, injury location, and demographic characteristics and their influence on hospital mortality in adult patients with thoracolumbar spinal cord injuries. Given the severe consequences of these injuries, it is essential to identify possible risk factors for hospital mortality.

METHODS: This study utilized data from the InEK GmbH database for the year 2022, which contains comprehensive information on Diagnosis-Related Groups (DRGs) and hospital billing in Germany. We included patients aged 18 years and older with thoracolumbar spinal cord injuries. The hospital mortality rate was determined, and differences in comorbidities and accompanying diseases were analyzed using the Chi-square test. Odds ratios (OR) with 95% confidence intervals (95% CI) were calculated to identify potential risk factors for hospital mortality.

RESULTS: The study included 525 patients with a hospital mortality rate of 5.7%. Thoracic spinal cord injuries were more common at 73.9% (n = 388) than lumbar (26.1%, n = 137), but did not show a significantly increased risk of death (OR=1.44, CI:0.57-3.6, p=0.44). In the older patient group (>80 years), both incidence (10.97 per million per year) and mortality risk (OR=4.65, CI: 2.09-10.24, p=0.0002) were higher compared to younger patients (7.2 per million per year for 18-80-year-olds). Significantly associated with increased hospital mortality were acute hemorrhagic anemia (OR=4.33, 95% CI: 2.04-9.18, p<0.001) and paroxysmal atrial fibrillation (OR=12.45, 95% CI: 5.28-19.23, p<0.001). Non-uncontrolled Type II diabetes mellitus (OR=2.34, 95% CI: 0.88-6.45, p=0.10), essential hypertension without hypertensive crisis (OR=1.36, 95% CI: 0.61-3.07, p=0.44), and the pre-existing use of anticoagulants (OR=1.67, 95% CI: 0.61-4.54, p=0.31) were identified as potential, but statistically non-significant, risk factors.

DISCUSSION AND CONCLUSION: Especially older patients and patients with certain pre-existing conditions show an increased risk of hospital mortality after a thoracolumbar spinal cord injury. Therefore, the prevention of complications and adequate treatment of existing diseases are critical to mitigate the severe impacts of spinal cord injuries.