

## Long-term Mortality after Traumatic Spinal Cord Injury

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### INTRODUCTION

Despite improved medical treatment and care, the patients with traumatic spinal cord injuries (TSCI) have increased long-term mortality compared to the general population. The primary objective was to study the mortality rates of TSCI patients compared to matched controls. The secondary aim was to examine possible TSCI-related mortality risk factors.

### METHODS

All consecutive patients (n=344, mean age=58years; male=73%; tetraplegic=69%; AIS A=19%; fall=62%) with a new TSCI were included in a prospective multicenter study (2012-2016). All patients were followed until death or the end of 2019 (mean=5.3 years). Patients were compared to sex, age, municipality, and calendar time matched controls (five controls/one TSCI patient, n=1719). Mortality information was extracted from the Statistics of Finland.

### RESULTS

During the observation period, 26% (n=88, male=73%) of TSCI patients, and 12% (n=211, male=75%) of the controls died. The mortality rate between male and female TSCI patients was similar (26% each). The mortality rates between TSCI patients and controls stratified by age were: i) 0-29year=10% vs. 1%, ii) 30-59years=9% vs. 3%, and iii) 60+years=38% vs. 20%. The delay between injury and death was distributed as follows: i) ≤1month=22% (n=19), ii) 2-6months= 9% (n=8), iii) 7-12months=8% (n=7), iv) 13-24months=13% (n=11), and v) >24months=49% (n=42). Increased age, severity of TSCI and fall etiology were related to mortality (p<0.05).

### CONCLUSION

During the first years after injury, the mortality of patients with TSCI is double compared to controls. The majority die within two years postinjury. Elderly patients with more severe fall-related injury seem to have the highest mortality risk.