

The association between the etiology of a spinal cord injury and time to mortality in the United States: A 44-year investigation

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Abstract

Objective: To determine the association between spinal cord injury (SCI) etiology categories and mortality, and examine the association between etiology sub-categories and mortality.

Design: Prospective cohort study.

Setting: Model Systems and Shriners Hospital SCI units.

Participants: Data were analyzed from 42,627 cases in the SCI Model System Collaborative Survival Study Database from 1973 to 2017. Those with SCI etiologies categorized as vehicular, violent, sports, falls, pedestrian, and medical were included.

Interventions: Not applicable.

Outcome Measure: Time to mortality after SCI.

Results: Relative to the sports related etiology category, those with medical, pedestrian, violence, falls, and vehicular related SCIs had a 2.00 (95% confidence intervals (CIs): 1.79–2.24), 1.57 (CIs: 1.34–1.83), 1.54 (CIs: 1.41–1.68), 1.35 (CIs: 1.25–1.45), and 1.26 (CIs: 1.17–1.35) higher hazard for mortality, respectfully. Persons with SCIs from automobile crashes had a 1.38 (CIs: 1.23–1.56) higher hazard for mortality, whereas those with SCIs from motorcycle crashes had a 1.21 (CIs: 1.04–1.39) higher hazard for mortality, relative to other etiologies within the vehicular category. Those with SCIs from diving had a 1.37 (CIs: 1.18–1.59) higher hazard for mortality relative to other etiologies within the sports category.

Conclusions: Injury etiology categories and certain sub-categories were associated with a higher risk for early mortality. Understanding how additional factors such as socioeconomic status, co-occurring injuries, medical co-morbidities, and environmental aspects interact with SCI etiologies may provide insights for how etiology of injury impacts survival. These findings may serve as a development for extending long-term life expectancy by informing SCI prevention programs and care post-injury.

