

Quick Review of Model System Research

Long-Term Functional Outcome in Patients with Acquired Infections After Acute Spinal Cord Injury^{1*}

What is the study about?

Infections are prevalent complications in SCI patients and are facilitated by a systemic spinal cord injury immune deficiency syndrome (SCI-IDS). This study looked at the effect of pneumonia or wound infection on hospitalized patients with spinal cord injury (SCI). Pneumonia is an infection in one or both of your lungs. Wound infection is an infection at the spinal surgery location closely following surgery. The researchers found that SCI patients with pneumonia or wound infection in the hospital had greater disability and higher rates of dying than those without infection.

Who participated in the study?

There were 1203 patients included in the study. All patients had cervical SCI and clear motor impairment as defined by the American Spinal Cord Injury Association impairment scale (AIS). The study investigated patients between 16 and 75 years of age. These patients were not in the hospital or nursing homes before their injury. Only patients with a full dataset were enrolled.

How was the study conducted?

The study analyzed data from the National Spinal Cord Injury Database from 3,834 patients at 20 SCI centers in the USA. There were 1203 patients eligible for review who had hospital-acquired pneumonia and/or wound infection, measures of motor function using the Functional Independence Measure. The two groups compared are those with pneumonia and/or wound infection in the hospital and those without pneumonia or wound infection in the hospital. About half (47%) of the patients in the study had pneumonia or wound infection. Researchers collected data when patients entered the hospital (Baseline-time point), when patients left the hospital (Discharge-time point), one-year after patients left the hospital and five-years after patients left the hospital (1-year and 5 years follow-up). Researchers applied a variety of statistical tests to find that those patients with acquired pneumonia or wound infection had significantly less physical independence at discharge, one-year, and five-years after leaving the hospital compared with those without infections. They also identified patients with wound infections or pneumonia to display overall significantly higher death rates 10 years after leaving the hospital.

What did the study find?

This study is the first to show that infections (pneumonia or wound infection) acquired during the hospital inpatient episode negatively impact on long-term outcome, such as the level of independence and long-term survival in patients with SCI. This finding suggests that prevention of infection and/or early treatment has implications for reducing disability and mortality and improving medical treatment of SCI patients.

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¹ Kopp, M.A., Watzlawick, R., Martus, P., Failli, V., Finkenstaedt, F.W., Chen, Y., ... Schwab, J.M. (2017). Long-term functional outcome in patients with acquired infections after acute spinal cord injury. *Neurology*.

*The contents of this summary have been reviewed by the corresponding author of the original study.