The Incidence of Pneumonia, Wound Infection and Sepsis (PWS) in Patients with Acute Traumatic Spinal Cord Injury (SCI) and its Association with Neurological recovery and Functional outcomes: Pooled analysis using the NACTN/STASCIS database

Fan Jiang MD. FRCSC¹,²; Blessing N.R. Jaja MD. PhD¹,³; Jetan Badhiwala MD¹; Ralph T. Schär MD³; Shekar Kurpad MD. PhD⁴, Robert Grossman MD⁵; James Harrop MD⁶; Jim Guest MD. PhD⁷; Elizabeth Toups MSc. MSN⁵; Chris Shaffrey MD⁸; Bizhan Aarabi MD⁹; Max Boakye MD. MPH. MBA¹⁰; Jefferson Wilson MD. PhD. FRCSC³; Michael G. Fehlings MD. PhD. FRCSC. FACS¹, on behalf of the North American Clinical Trials Network Collaborators

¹Division of Neurosurgery, Toronto Western Hospital, University of Toronto, Toronto, Ontario, Canada, ²Division of Orthopaedic surgery, Toronto Western Hospital, University of Toronto, Toronto, Ontario, Canada, ³Division of Neurosurgery, St. Michael’s Hospital, University of Toronto, Toronto, Ontario, Canada, ⁴Division of Neurosurgery, Medical College of Wisconsin, Milwaukee, Wisconsin, ⁵Division of Neurosurgery, Methodist Hospital, Houston, Texas, ⁶Division of Neurosurgery, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania, ⁷Division of Neurosurgery, University of Miami, Miami, Florida, ⁸Division of Neurosurgery, University of Virginia, Charlottesville, Virginia, ⁹Division of Neurosurgery, Shock Trauma, University of Maryland, Baltimore, Maryland, ¹⁰Division of Neurosurgery, University of Louisville, Louisville, Kentucky
INTRODUCTION

Pneumonia, wound infection and sepsis (PWS) are amongst the leading cause of mortality during acute admission for spinal cord injury (SCI).

Although acquired infections are preventable, the reported incidence in the literature is surprisingly high, with studies reporting variable incidence rates between 23% – 80%.

Evidence suggest that individuals with SCI are at increased susceptibility to secondary infection.

From an outcomes perspective, there is limited insight pertaining to the impact that secondary infections post SCI might have on long term clinical recovery.

OBJECTIVE

To evaluate the predictive factors for development of secondary PWS after SCI and to assess the relationship between secondary infections and long-term clinical recovery.

METHODS

Study population: The prospective data from the North American Clinical Trials Network (NACTN) SCI registry and the Surgical Timing in Acute SCI (STASCIS) study were pooled.

NACTN cohort enrolled SCI patients admitted between 2005 and 2017 at 11 University-affiliated hospitals. STASCIS cohort were enrolled at 6 hospitals between 2002 and 2009.

RESULTS

The prospective data from the North American Clinical Trials Network (NACTN) SCI registry and the Surgical Timing in Acute SCI (STASCIS) study were pooled.

The three strongest predictors of PWS during acute admission for SCI were injury level, initial AIS grade and premorbid medical status.

The occurrence of PWS during the acute admission for SCI is associated with poor long term neurological recovery and functional outcomes.

The findings of this study warrants greater vigilance and strategies to improve prevention, early identification and effective treatment of severe secondary infections in patients with spinal cord injury.
Disclosure

No relevant disclosures which will impact the results of this study