Understanding the Impact of Age and Injury on Clinical Improvement and Resource Utilization in Patients with Spinal Cord Injury.

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OBJECTIVE
To investigate how age and time from injury to admission to inpatient rehabilitation can aide in predicting functional outcomes and length of stay efficiency (LOSE) for pediatric patients with spinal cord injury (SCI).

DESIGN
8-year Retrospective review of pediatric patients from a Comprehensive Inpatient Rehabilitation Unit (CIRU).

PARTICIPANTS
• 168 consecutive pediatric patients
• 0 to 21 years of age
• Sustained a traumatic or non-traumatic SCI
• Admission to inpatient rehab services at Children’s Healthcare of Atlanta between January, 2008 and December, 2015

INCLUSION/EXCLUSION CRITERIA

OUTCOME MEASURES
• Change in WeeFIM II™ score
• Length of Stay Efficiency

RESULTS
• Among the 168 patients with SCI, there were 94 males and 74 females with a mean ± s.d age of 10.5 ± 6.2 years.
• The median time from injury to admission to inpatient rehab was 12 days and median length of stay for all patients was 28 days.
• The average gain (change) in WeeFIM II™ scores from admission to discharge was 24 ±16 points.
• Characteristics associated with lower change in WeeFIM II™ scores (i.e., worse improvement) and lower LOSE were: females (p = 0.029, p<0.16), younger age (p < 0.001 for both), longer duration from injury to admission (p < 0.001 for both), complete injury (p < 0.001), and cervical injuries (p<0.001).
• Mechanism of injury was not associated with WeeFIM II™ change or LOSE.
• Patients with spinal cord injuries alone did not have greater overall gains in WeeFIM II™ scores compared to those with concomitant traumatic brain injuries; however, they did make larger improvements in mobility (p = 0.002) and self-care (p = 0.004).

CONCLUSIONS
• Age and injury time to rehab admission should be considered when setting predictive WeeFIM II™ scores for pediatric patients with SCI.
• It is also important to ensure prompt admission after injury as soon as the child is medically stable to participate in inpatient rehabilitation.
• These recommendations can aide in overall improvements in resource utilization for patients 0 to 21 with a spinal cord injury.

LIMITATIONS
• The data presented in this study represents an acute period of time and does not represent long term effects over time.
• There is limited research available for the use of the AIS with children under the age of six.
• Further investigation should be done to determine differences in outcomes based upon differences of coverage options.
• Another limitation of this study was patients were received from only one facility.

REFERENCES