

## **Abstract**

**Objective:** To discuss the design and validation of a comprehensive interview-based equivalent of the International Standards for Neurological Classification of Spinal Cord Injury (ISNCSCI) exam, starting with the anorectal portion to assess for sacral sparing in the acute inpatient rehabilitation (AIR) setting.

### **Methods:**

- Study participants included patients admitted to AIR for spinal cord injury (SCI).
- An interview-based version of the anorectal part of the ISNCSCI (I-ISNCSCI) was developed. Patients were administered the standard ISNCSCI (S-ISNCSCI) within 3 days of being asked the I-ISNCSCI.
- Agreement between the anorectal portions of the I-ISNCSCI and S-ISNCSCI were evaluated for sensation to light touch (LT) and pin prick (PP), as well as the ability to perceive deep anal pressure (DAP) and perform voluntary anal contraction (VAC).

### **Results:**

- A total of 45 participants (Table 1) underwent a total of 63 trials (40 admission, 23 discharge).
- Discharge exam data was ultimately deemed inadmissible due to inadequate sample size and bias introduced by nature of the study's design.
- For 40 admission exams, agreement between the I-ISNCSCI and S-ISNCSCI was substantial for LT ( $k=0.71$ ,  $N=36$ ,  $p<0.01$ ), PP ( $k=0.68$ ,  $N=38$ ,  $p<0.01$ ), and DAP ( $k=0.77$ ,  $N=37$ ,  $p=0.01$ ). Only fair agreement was seen for VAC ( $k=0.29$ ,  $N=36$ ,  $p=0.31$ ). Agreement was also substantial for identifying overall completeness vs. incompleteness of injury based on all of the sacral sparing criteria ( $k=0.72$ ,  $N=40$ ,  $p<0.01$ ). (Table 2)

### **Conclusion:**

- Our results support the possibility of using a tool such as the I-ISNCSCI in routine clinical or research practice. A validated I-ISNCSCI would have a wide impact on the assessment and monitoring of neurological changes and outcomes in individuals with SCI.