Currently, there are few treatment options for patients with acute SCI. A major obstacle for translational research in acute SCI is the lack of biomarkers that can be used to objectively stratify injury severity and predict an outcome. Research in neurochemical biomarkers for acute SCI is facilitated by the availability of both blood and cerebrospinal fluid (CSF) samples. Here, we will evaluate CSF and serum samples obtained from patients with acute SCI for the protein Ubiquitin C-Terminal Hydrolase L1 (UCH-L1). CSF and serum samples were collected as part of an ongoing clinical initiative in which acute SCI patients have had lumbar intrathecal catheters inserted for the collection of CSF over the first 5 days post-injury. UCH-L1 concentrations was measured using the Quanterix Simoa assay platform and correlated to injury severity and neurologic recovery. Our data suggest that UCH-L1 levels in CSF are increased in SCI patients compared with non-SCI controls, with levels being significantly different between AIS grades and over the course of 5 days. Conversely, there was no significant difference in serum UCHL-1 between control and SCI subjects. Further, 24-h post-injury CSF UCH-L1 concentrations negatively correlated with motor score change over 6 months. Our first evaluation of UCH-L1 in acute SCI shows promise as a biomarker to reflect injury severity and predict outcome in acute SCI. Further studies are currently underway to evaluate UCH-L1 in serum samples of individuals with SCI and add more CSF samples to our current data set.

Themes:

Check (highlight) the most applicable theme according to the abstract.

- Innovation and Technology
- Health and Wellness
- Culture and Society
- Sustainability and Conservation

Comments: