

TBI-Prognosis Study

Alexis Turgeon and the TBI-Prognosis Co-Investigators

Traumatic brain injury is the leading cause of death and severe disabilities among adults under 45 years of age. Most deaths following severe traumatic brain injury are related with the decision made by families and medical teams to withdraw life-sustaining therapies. Because severe traumatic brain injury occurs mainly in a young healthy population, this decision is likely to be based on the perception of an unfavorable long-term outcome. However, recent practice guidelines and current knowledge showed that our capacity to accurately predict outcome in this population is limited. Our prior work showed a significant variation in the frequency of life-sustaining therapy withdrawals across Canadian trauma centers. More importantly, a significant proportion of deaths occurred in the first 3 days, a time-period considered by several experts as being relatively premature to accurately predict the patient outcome.

The purpose of the TBI-Prognosis Study (www.tbi-prognosis.ca) is to develop a prognostic model in critically ill patients with severe traumatic brain injury by using a multimodal approach of different prognostic indicators and their evolution over time in the acute phase of care. More specifically, we will develop a valid, integrated, reliable and clinically useful prognostic model (decision aid) to evaluate the long-term prognosis (functional and quality of life) of critically ill adults with severe traumatic brain injury using a combination of different prognostic indicators. The TBI-Prognosis Study is a multicenter prospective cohort study in which a series of prognostic tests and exams (clinical, radiological, electrophysiological and biological) are conducted within the acute phase of care in a standardized and protocolized manner. A total of 315 participants are needed. This study, taking place in Canadian trauma centers and intensive care units, will improve our ability to prognosticate and identify patients who will benefit from aggressive care in the acute phase, and help preventing erroneous evaluation of prognosis that could have lethal consequences when used to decide to pursue or withdraw life-sustaining therapies. The TBI-Prognosis Study has been developed with the Canadian Critical Care Trials Group (www.cccctg.ca) and is funded by the Canadian Institutes of Health Research (CIHR).