
Traumatic Brain Injury: Evidence for Delayed Withdrawal of Life-Sustaining Treatment



Each year, over five million people worldwide suffer severe traumatic brain injuries (TBI), with predicting recovery being challenging due to various factors. Families often face the decision to continue or withdraw life-sustaining treatment (WLST), typically within 72 hours post-injury, often based on clinicians' prognosis. However, this decision-making process is subjective and varies widely across centers and cultures. WLST also complicates TBI research, as it affects outcome interpretation and trial applicability. Without clear guidelines, families rely on clinical teams' prognoses, which may lead to overestimation of poor outcomes. A [study published in the Journal of Neurotrauma](#) utilised data from the TRACK-TBI project to estimate recovery potential in patients with WLST, finding that survival rates were not negligible, and a significant portion achieved at least partial independence six months post-injury. These findings underscore the need for improved prognostic tools and decision-making processes in TBI management.

Insights from the TRACK-TBI Study

The TRACK-TBI study enrolled 3092 adult and pediatric patients with traumatic brain injury (TBI) across 18 Level 1 trauma centers between February 2014 and August 2021. Participants had to meet specific inclusion criteria, including presentation to a study site within 24 hours post-injury and documented acute TBI. Exclusion criteria involved preexisting conditions that could affect follow-up and certain medical situations like penetrating TBI or spinal cord injury. This analysis focused on participants aged 17 and older who were admitted to the intensive care unit (ICU). Measures included the Glasgow Outcome Scale-Extended (GOSE) and the Disability Rating Scale (DRS) to assess outcomes post-TBI. Of the 1392 ICU-admitted participants, 90 (6.5%) were in the WLST+ cohort, with WLST (withdrawal of life-sustaining treatment) occurring in 37% of cases within 72 hours post-injury. WLST contributed to a significant portion of total deaths within various timeframes post-injury. These findings shed light on the demographics and timing of WLST in TBI cases, influencing the interpretation of TBI research outcomes.

Impact of Withdrawal of Life-Sustaining Treatment on Traumatic Brain Injury Recovery

The TRACK-TBI study delved into the outcomes of traumatic brain injury (TBI) patients, examining the impact of withdrawal of life-sustaining treatment (WLST) on their recovery. The analysis revealed that patients who did not undergo WLST had significantly higher survival rates at the six-month mark compared to those who did. Additionally, more than 30% of participants achieved some level of independence, although statistical significance wasn't achieved in this regard. Notably, a few patients even managed to recover to their pre-injury functional levels.

These findings underscored the importance of a cautious approach towards early WLST decisions, suggesting that there's a window of opportunity for potential recovery even after severe brain injuries. The data also addressed concerns regarding prolonged disability, indicating that the majority of patients either achieved some level of independence or passed away within 12 months post-injury. However, the relationship between functional recovery and quality of life remains complex, necessitating further investigation, especially considering the absence of pre-injury data.

Implications of variability for Traumatic Brain Injury Care

The study highlighted significant variability in WLST practices across different centers, emphasising the need for standardised guidelines to facilitate shared decision-making between families and clinicians. Most deaths recorded in the study were associated with WLST, suggesting the importance of thorough clinical evaluation before making critical care decisions. However, it also cautioned against underestimating the potential for recovery by overlooking the impact of WLST on outcomes.

Despite providing valuable insights, the study had limitations, including sample size constraints and missing data on crucial WLST variables. It called for long-term follow-up studies to comprehensively understand TBI recovery trajectories and the factors influencing WLST decisions. Overall, the findings underscored the need for a nuanced approach in managing TBI patients and making end-of-life care decisions, considering both medical and ethical dimensions.

The study revealed that a significant proportion of traumatic brain injury (TBI) patients who underwent withdrawal of life-sustaining treatment (WLST) either died or achieved at least partial independence, while recovery to a vegetative state was uncommon. Although larger studies with more comprehensive clinical data are necessary, our findings suggest that delaying WLST decisions might be beneficial to identify patients who could potentially recover independence months after the injury. Future TBI trials should account for the potential for recovery in patients who undergo WLST when designing analytical strategies.

Source: [Journal of Neurotrauma](#)

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