

Evaluation of Withdrawal of Life-Sustaining Treatment in Traumatic Brain Injury

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In patients with severe traumatic brain injury, clinicians are regularly confronted with the decision to withdraw life-sustaining treatment. Recent evidence suggests that some patients who died following withdrawal of life-sustaining treatment (WLST) may have had the potential for meaningful recovery had treatment been continued. This study aimed to explore the extent of such unrealised recovery in Europe.

Using the Collaborative European NeuroTrauma Effectiveness Research in Traumatic Brain Injury observational cohort study, patients who died following WLST were matched 1:1 to patients who received ongoing treatment, using propensity score matching based on a comprehensive set of covariates including age, injury severity, neurological status, pre-injury health and neuroimaging findings. Functional outcomes were assessed at 3, 6 and 12 months post-injury using the Glasgow Outcome Scale–Extended (GOSE).

Of the 303 patients who underwent WLST, 224 were successfully matched to non-WLST patients. At six months post-injury, 41.1% of the matched non-WLST cohort had achieved a favourable functional outcome (GOSE ≥ 4), while 24.1% had died and 34.8% remained in a vegetative state or had severe disability. By twelve months, the proportion with favourable outcomes had increased to 44.6%.

These findings show that a considerable proportion of patients in the non-WLST cohort experienced favourable functional recovery, suggesting that similar outcomes could have been possible in some WLST patients. However, 58.9% still had poor outcomes, including death, vegetative state or severe disability. The results challenge early WLST decisions and underscore the need for cautious prognostication. Further research is warranted to improve prognostic models and clarify the clinical reasoning behind WLST decisions. Current evidence supports postponing WLST decisions for at least 72 hours after injury to avoid premature withdrawal.