

TRAUMATIC BRAIN INJURY

Evidence, Guidelines and Treatment Variation

1. The level of evidence for management of severe TBI remains limited, with few robust studies and even fewer studies actually showing benefit of the interventions studied. (*this thesis*)
2. The available evidence on the medical management of severe TBI should be summarized and “translated” into guideline recommendations in the most comprehensive way possible, while avoiding the “cookbook”/“one-fits-all” approach. (*this thesis*)
3. Marked practice variation exists in management of severe TBI, even on topics where consensus is expected based on high-level evidence from RCTs or the recommendations in the Brain Trauma Foundation guidelines. (*this thesis*)
4. Although the only available RCT comparing ventricular devices to intraparenchymal monitors showed lower mortality and better functional outcome with ventricular devices, in a meta-analysis this result is overturned; the use of ventricular devices instead of intraparenchymal monitors in the treatment of severe TBI does not offer benefit in terms of mortality or functional outcome. (*this thesis*)
5. When using a comparative effectiveness approach, the use of ventricular devices instead of intraparenchymal monitors to guide treatment of severe TBI leads to less decompressive craniectomies. (*this thesis*)
6. The validity of observational studies and their proper interpretation can be improved by using falsification end points, validation datasets, and prespecified rules when the study hypotheses should be considered confirmed or rejected. (*Ioannidis et al 2016 CMAJ*)
7. For some outcomes it may be difficult to obtain definitive evidence from large trials, and observational data could then offer the best possible guidance, but caution is needed to prevent misguided clinical decision making. (*Ioannidis et al 2016 CMAJ*)
8. Subgroup findings should be exploratory, and only exceptionally should they affect the trial’s conclusions. (*Kent, Steyerberg et al 2018, BMJ*)
9. Science is understood, up to a certain extent, to be an accumulative, iterative, self-correcting endeavor, where mistakes are a normal short-term side-effect of a long-term process of accumulating evidence. (*Card et al 2014, Stat Journal Club*)
10. Advocates of evidence-based medicine have criticized the adoption of interventions evaluated by using only observational data. [...] everyone might benefit if the most radical protagonists of evidence-based medicine organized and participated in a double blind, randomized, placebo controlled, crossover trial of the parachute for prevention of mortality and severe morbidity. (*Smith et al, BMJ 2003*)
11. “Even meaning and destiny themselves can be read in ordinary things, if you have the gift”. (*Stephen Fry, Mythos. The Greek Myths Retold*)