

Letter: Guidelines for the Management of Severe Traumatic Brain Injury, Fourth Edition

To the Editor:

According to the World Health Organization, guidelines are systematically developed evidence-based statements to assist providers, recipients, and other stakeholders to make informed decisions about appropriate health interventions. The target audience for guidelines are clinicians with a general expertise, but without specific advanced knowledge for a certain condition.

The recently published fourth edition of the Brain Trauma Foundation (BTF) Guidelines^{1,2} fails to reach this aim, for several reasons. First, the literature upon which this new edition was based was only updated until 2013 (Appendix D).¹ This way, the 2016 BTF guidelines do not take into account the most recent evidence. Second, the guidelines stick to absolute thresholds for blood pressure, intracranial pressure (ICP), and cerebral perfusion pressure (CPP). For example, in the case of ICP, the previous recommendation that “Treatment should be initiated with ICP thresholds above 20 mm Hg” has been modified to “Treating ICP above 22 mm Hg is recommended because values above this level are associated with increased mortality” (level II B). Formulated this way, this recommendation seems to suggest that our patient is safe when his ICP is 21, but that 23 mm Hg should trigger aggressive therapy. Obviously, this is absurd, for several reasons. First, in reality, small and clinically negligible measurement errors of ± 2 mm Hg occur frequently,³ but could be enough to move a reading below/over the threshold. Second, we should never forget that the observational studies upon which the association between an ICP of 20 or 22 and outcome were based have been done in patients in whom ICP was already treated. Third, the ICP–time burden or “dose of ICP” is probably a more relevant predictor for outcome. Indeed, the higher the ICP, the shorter the time it can be tolerated.⁴ Moreover, the actual ICP threshold is flexible between and within patients, and depends on age, CPP, and whether cerebrovascular autoregulatory function is active or not.⁴ Finally, interventional studies where very aggressive treatments, such as surgical decompression,⁵ were applied very early, as soon as the ICP crossed the 20 mm Hg threshold even briefly, have demonstrated harm rather than benefit.

As Sackett wrote,⁶ “Evidence-based medicine is not ‘cookbook’ medicine. Because it requires a bottom-up approach that integrates the best external evidence with individual clinical expertise and patients’ choice, it cannot result in slavish, cookbook approaches to individual patient care.” The BTF Guidelines^{1,2}

have simplified a complex story into a sterile dogma. We know that ICP values lower than 10 to 15 mm Hg are probably not dangerous and that ICPs higher than 25 to 30 are worrisome and require immediate aggressive intervention. Nevertheless, a huge area of uncertainty exists between these 2 extremes. Clinicians have to deal with these uncertainties daily, like ancient sailors sailing between Scylla and Charybdis deciding between low and high thresholds, integrating clinical expertise with physiology and with the best available scientific evidence. Until new evidence will guide us, let us avoid being dogmatic.

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10.1093/neuros/nyx144