


LETTER

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Breaking the rules: is it the neurointensivists' turn?

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See related research by Cnossen et al. <https://ccforum.biomedcentral.com/articles/10.1186/s13054-017-1816-9>

We have read with interest the results of the survey by Cnossen et al. [1], in which the authors affirm that substantial variation was found regarding monitoring and treatment policies in TBI patients and intracranial hypertension among 66 European neurotrauma centers. We observe that this result is no different from the conclusion of a similar survey on blood transfusion and coagulation management of TBI patients belonging to the same research group [2]. Moreover, these results agree with another survey on the management of mild TBI patients [3]. The authors' conclusion shows that, even among high-volume specialized neurotrauma centers, there is a substantial variation in structures and processes of TBI care and a discrepancy between BTF guidelines and reported policies [1–3].

Although this variability between European neurotrauma centers provides an opportunity to study the effectiveness of specific aspects of TBI care and to identify best practices with comparative effectiveness research, the lack of BTF guideline application remains a concern. Compared to a previous study from a decade ago, the data from Cnossen et al. [1] show a reduction in application of the BTF guidelines to 49% and 51% in aggressive and conservative centers respectively. The low adherence to guidelines may explain the variability and heterogeneity of the treatment as we

reported recently in the neurointensive care setting of subarachnoid hemorrhage patients due to cerebral aneurysm rupture [4].

While it seems that neurointensivists do not follow the rules, we do not have to forget that this phenomenon has also occurred in other fields of medicine. Arts et al. [5] reported in a recent systematic review that intentional non-adherence to guidelines varied between 8.2 and 65.3%. The same authors concluded that nonadherence is often supported by valid reasons in up to 93.6%. Guideline deviations are intentional, mainly related to contraindications or due to the patient's decision, and these deviations do not necessarily impact on the quality of care [5].

However, none of the studies analyzed by Arts et al. [5] was carried out in the neuro-ICU setting where the critical situation of the patients, most of them unconscious, postpones any possible consensus decision. Moreover, therapy contraindications disappear when a second-line life treatment is requested. In the hardest of ICU settings, where the patients 'will disappear', following guidelines seems to assume a different meaning. We are confident that future studies in the perspective of the CENTER-TBI study can shed light on the actual role of guidelines and protocols in the complex context of neuro-ICUs.

Authors' response

Maryse C. Cnossen, Mathieu van der Jagt, Ewout W. Steyerberg and On behalf of the coauthors

We would like to thank Gritti and colleagues for their letter about our recently published manuscript describing considerable variation in monitoring and treatment policies in patients with TBI and intracranial hypertension

[1]. This variation probably reflects the lack of evidence [6] and guideline adherence [7] for the treatment of patients with TBI.

Based on Table 1 in the original paper [1], Gritti and colleagues infer that, in comparison to a previous report, guideline adherence to the BTF guidelines has been reduced to 49% and 51% in aggressive and conservative centers, respectively. This statement, however, is incorrect. Of the total sample, the BTF guidelines were used in 49 (74%) centers. Among these 49 centers, 25 (51%) could be

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classified as ‘aggressive’ and 24 (49%) as ‘conservative’ with regard to ICP management.

Guideline adherence is higher for recommendations based on more robust evidence than for recommendations based on relatively weak evidence [7]. However, subsequent editions of the BTF guidelines have progressively reduced the strength of the recommendations, after reevaluation of the weak evidence. We believe that strengthening the evidence base will result in an improvement in guideline adherence, and subsequently will reduce treatment variation.

Comparative effectiveness research (CER) provides a promising framework for expanding our knowledge of TBI treatment effectiveness. The CENTER-TBI study is currently recruiting approximately 5000 patients from 20 European countries. Once these patient-level data become available, the first step will be to compare the results of the provider profiling questionnaires with the actually observed treatment variation among centers. The next step will be to examine the association between treatment and outcome with CER approaches, to strengthen the evidence underpinning TBI guidelines. A third step will be to develop a tentative set of quality indicators for TBI, which could potentially be used for benchmarking and quality assurance of future TBI care.

As Sackett wrote, “Evidence based medicine is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patient” [8].

As such, a set of rules to be blindly followed or to be broken has never been proposed. We are confident that detailed large data collection, advanced methodology, and global collaboration with other projects (e.g., TRACK-TBI in the United States) will provide better evidence for grounding better treatments for TBI victims.

Abbreviation

TBI: Traumatic brain injury; BTF: Brain Trauma Foundation; CENTER-TBI: Collaborative European Neurotrauma Effectiveness Research in Traumatic Brain Injury; ICU: Intensive care unit

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