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Modified Revised Trauma–Marshall Score as a Proposed Tool in Predicting the Outcome of Moderate and Severe Traumatic Brain Injury

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We thoroughly enjoyed reading the article by Mahadewa et al.[1] The authors proposed a combined physiological (revised trauma score [RTS]) and radiological (Marshall computed tomography classification [MCTC]) model, that is, "m-RTS" as a new traumatic brain injury (TBI) prognostication scheme. The study concluded that the combination of RTS and MCTC as a prognostic scoring in moderate and severe TBIs can be used to calculate with improved accuracy and reliability, citing that with the RTS of <10 with a risk ratio of 2.9 and MCTC ≤ 2 with a risk ratio of 3.9, the combination had a higher risk ratio of 4.5 and a higher sensitivity as screening tools of unfavorable outcome. The authors' outstanding outcomes provide more evidence for the combined score's efficacy. We have thoroughly reviewed this article and have some recommendations.

Since TBI is one of the most common causes of death and disability worldwide and owing to its high incidence, it is necessary to calculate an estimated sample size comparing different prediction models.[2] In this study, the sample size is limited to 181 patients.

Validation is a crucial step in the predictive modeling process because the goal of a prediction model is to deliver accurate prognoses for new patients. For a prediction model to be considered generalizable, or generally applicable, it must undergo external validation for patients who are not part of the derivative cohort. By assessing the model's performance (such as the C-index) using data other than the ones used to build it, external validation can be accomplished.[3] The m-RTS may provide advantages over previously described scoring systems; however, validation and prospective analysis are still needed.

According to the recent articles, decision-analytic measures should be used instead of simple categorization measures for evaluating the impact, usability, and quality indicator of these scores in clinical decision-making.[4] Decision curve analysis, calibration, and discrimination prediction may be required to complement the results of this investigation.

As it has been used more widely than any other classification, the MCTC was selected as the recommended computed tomography (CT) classification in this investigation. The usefulness of MCTC has been confirmed by the International Mission for Prognosis and Analysis of Clinical Trials in TBI (IMPACT) database. However, the data also indicate that specific CT features, such as traumatic subarachnoid hemorrhage and individual hematoma type (subdural vs. epidural), have additional prognostic value.[5]

In conclusion, the m-RTS model is an intriguing alternative technique that may progress prognostic thinking and more logical decision-making, even though it may be too soon to recommend it over the current models for regular TBI prognostication.

Conflict of Interest
None declared.

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