Reviewer's report

Title: Systematic review of prognostic models in traumatic brain injury

Version: 2 Date: 8 September 2006

Reviewer: Andrew I Maas

Reviewer's report:

Prognostic estimates constitute an essential, but often undervalued element of clinical medicine. Clinicians take their estimate on likely outcome and expectations into account, both consciously and often subconsciously when making decisions on therapy or resource allocation. Yet, clinical judgment and estimates of prognosis may often be off track. As one of the Hippocratic aphorisms state: “experience is fallacious and judgment difficult”. Even in the days of ancient Greek medicine the importance of prognosis was recognized, and in fact the quality of doctors assessed more on the accuracy of their outcome predictions than on the success of therapy.

Prognosis is particularly relevant in TBI, a disease wherein frequently great uncertainties may prevail, as already captured by Hippocrates in the aphorism: “no injury is so severe to despair of, nor too trivial to ignore”.

It is all the more surprising that this excellent systematic review on prognostic models in TBI demonstrates that much improvement is needed. The authors have conducted a detailed systematic analysis of published prognostic models, highlighting the lack of essential quality characteristics in most models. I consider it a pity that the authors did not take the time of prediction assessment into consideration in their review.

Previous work has shown already in the seventies that models will perform better if they include changes in clinical course. The use of such “late” models is however more limited, as they for instance can not be used in acute care trials, and are less relevant towards purposes of informing relatives.

An extremely important point highlighted by Parel et al is that most models were derived in high income countries, and consequently uncertainty exists on their use in middle/low income countries, where they may be needed most for resource allocation.

Discretionary Revisions (which the author can choose to ignore)

Page 6: the use of percentages (without numbers) is sometimes confusing. For instance under objectives in line 3 the 83% relates only to the validation models.
Page 6: objectives, line 4: suggest to change “rest” to into “remaining”.
Line 6: please add an “s” to score.
Page 6: variables included as predictors line 3: delete “them”
Page 8 line 16 and 20: should “brie” not be “brier”?
Page 10 line 4: suggest to change “note” into “concern”.
Page 10 paragraph 4 line 2: suggest to change “combined two predictors” into “combined at least two predictors”.
Page 10 paragraph 5: suggest to add reference to line 2.

What next?: Accept after discretionary revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare a potential conflict of interest as I am co-author on a similar manuscript describing a systematic review of prognostic models based on admission characteristics in TBI.