Reviewer’s report

Title: Scandinavian guidelines for initial management of minimal, mild and moderate head injuries in adults - an evidence and consensus based update.

Version: 1 Date: 26 November 2012

Reviewer: Bryan Young

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Note: This review was conducted by G. Bryan Young and Carolyn Benson

Have the guidelines been presented and explained in a way that the community can fully understand and implement?

The guidelines are presented in both written form and flowsheet. They are well written and easy to understand. On the discharge form I think it would be useful to include monitoring advice (for example, being checked on once in the night).

Have similar guidelines been published previously? If so, are these proposed guidelines an improvement over existing guidelines?

The article presents new CT head guidelines, which are partially evidence based and partially consensus based. The authors should be commended on their thorough literature search and presentation of this data. These guidelines as a set have not been validated clinically, as the authors have stated, so we do not know their sensitivity and specificity. Until this has been established, I do not think they will replace well-established guidelines with known sensitivities and specificities, such as the Canadian CT Head Rule and the New Orleans criteria.

How useful will these guidelines be to clinicians?

From a Canadian perspective, we have concerns with three of the recommendations. First, the admission guidelines are not feasible in our health care system and I believe are excessive for mild head injury patients, even in the setting of an abnormal CT scan. Such close monitoring would not even be available in our intensive care unit and almost all mild head injury patients are admitted to ward beds.

Second, there is no evidence to support CT scanning all patients with intraventricular shunts after minimal or mild head injury with GCS 15 and no other risk factors. These patients are already exposed to excessive radiation as shunt dysfunction is often suspected any time these patients seek medical attention for any symptom. In addition, it seems excessive that, even if the CT scan is normal and the patient is neurologically intact, that the patient be admitted for 24 hours. Although we understand that the number of patients presenting with shunts and head injury will be a very small proportion of patients and use minimal resources overall, it is not an evidence based recommendation.
Furthermore, it encourages unnecessary CT scanning of patients with shunts and increases physician discomfort with these patients, both of which are already a problem in emergency rooms.

Lastly, the use of S100B, while well validated, is not widely available in Canada and so limits the application of these guidelines.

Are all claims and statements fully supported with either new data or references to previous publications?

The evidence for using age greater than 65 combined with anti-platelet medication use and the presence of an intraventricular shunt as risk factors for neurosurgical intervention is very weak and the authors admit to this. In addition, there is no evidence that the observation regimens need to be so extensive and it would be useful to know how the authors came to a consensus on this issue.

Grammar suggestion

In the results section, paragraphs numbered 1 and 2, the word minimal should be removed, because by definition minimal head injury cannot have a GCS of 14 or less or have any of the stated risk factors. In the paragraph numbered 3, moderate should be removed as moderate head injuries cannot be GCS 15.

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

We declare that we have no competing interests