Reviewer’s report

Title: Ophthalmodynamometry for ICP prediction and pilot field test on Mt. Everest

Version: 3 Date: 2 August 2010

Reviewer: Farzaneh Sorond

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The objectives of this study were to 1) validate and calibrate an advanced, portable vODM instrument on intensive patients with raised intracranial pressure and 2) make pilot, non-invasive ICP estimations of normal subjects at increasing altitudes to affirm the physiologic brain volume changes observed in the hypobaric hypoxia studies.

The questions posed by these authors are well defined. However, the not all the statistical methods used are appropriate. The major concern is with using linear correlation to validate the vODM technique against the direct ICP measures. A high correlation does not automatically imply that there is good agreement between the two methods. To validate a procedure the Bland-Altman Plot or the Receiver Operating Curve (ROC) approaches should be used. Therefore, their 1st objective has not been met.

Their second objective of a pilot assessment has been partially met, but the findings really do not add much to our knowledge. In the absence of knowing the accuracy of the vODM, the findings of the second objective need cautious interpretation.

A minor concern is the amount of information that is presented in this article. It may be worthwhile separating the validation study from the pilot study. The messages are really unrelated as to their clinical implications and combining them makes it for a bulky and difficult to read paper.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

'I declare that I have no competing interests'