Reviewer's report

Title: High Dose Erythropoietin Increases Brain Tissue Oxygen Tension in Severe Vasospasm after Subarachnoid Hemorrhage

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Reviewer: Stefan Wolf

Reviewer's report:

The authors describe the physiologic effects of the application of 30,000 IU erythropoietin for three days in seven patients with TCD vasospasm after aneurysmal subarachnoid hemorrhage. Main finding was that pbtO2 measured by a Licox probe in the right frontal lobe did increase by 7 mmHg 16 hours after infusion. The authors’ conclusion is that this may be consistent with a suspected beneficial effect of EPO in poor-grade SAH and warrants further investigation.

The paper is concise and nicely written. I have no major objections. There seems to be a previous review for BMJ Neurology in which I was not involved. Therefore, some of my questions may have been asked already.

Discretionary revisions:
- The authors may want to reconsider the use of percentages for descriptions in only seven patients. In my opinion, a statement like “86% were female” is a bit misleading and a wording like “six of seven were female” would be more adequate.
- The authors used a GEE model for data analysis. Therefore, there should be data available on the effect size on each of the three consecutive days EPO was given (equal / diminishing) and whether a dependence on the level of pbtO2 at inclusion is present. Although this may fail to reach the usual p< 0.05 due to the number of cases, this information would be nice and thought-provoking.
- Was the effect on pbtO2 seen in all patients?
- (no offense intended!) Thirteen authors for a seven-patient-study without a vastly complex intervention…?!?
- One typo on page 8, 2nd paragraph, “multifactorial”

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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

Declaration of competing interests:
I declare that I have no competing interests