Reviewer's report

Title: Intraaortic balloon pump counterpulsation and cerebral autoregulation: an observational study

Version: 1 Date: 8 November 2009

Reviewer: Michael Piagnerelli

Reviewer's report:

Intraaortic Balloon Pump Counterpulsation And Cerebral Autoregulation : An Observational Study

This paper has some limitations and need some explanations :

Major comments:
- My major comment is about the real clinical implication of the results of this study. The authors described a decreased of the phase delays between CBFV and systolic IABP from -0.016 to -0.01 seconds when the counterpulsation ratio decrease from 1:1 to 1:3. These results suggested a preserved cerebral autoregulation, and that’s enough…(that’s the point described by the authors in the limitations of the study). In contrast, the authors concluded that the reductions in inflation ratio during counterpulsation weaning progressively impairs cerebral autoregulation. I don’t agree with this conclusions…More interesting, is perhaps the reduction in chaotic activity observed at the end-diastole and the inflation ratio reduction. Those needs perhaps some discussions and perhaps described more these observations rather than the delays…

- The selection of the patients. When the patients were included in the study (delay) ? Are you sure that these patients were not in an inflammatory state (sepsis)… That could modify the results. A majority of these patients need some vasopressors…Is it a correlation with the doses of these vasopressors and the results. Why only 11 patients were studied for the 1:3 counterpulsation ratio?

- Is it really the patients that give informed consent (or the family)?

- What’s the outcome of these patients?

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests