Reviewer's report

Title: An integrative review of the side effects related to the use of magnesium sulfate for preeclampsia and eclampsia management

Version: 1 Date: 19 October 2012

Reviewer: Edi Vaisbuch

Reviewer's report:

Summary
This integrated review of available literature was designed to determine the frequency of severe adverse reactions when magnesium sulfate is used for the prevention of eclamptic seizures. Twenty-four studies were finally included in the review. The authors report a low incidence of the most severe side effects.

General comments
This review is significant from a global healthcare perspective. It is well written and the take-home message is clear and important for healthcare providers in developing countries. However, it seems that there is an unnecessary effort to artificially minimize the incidence of the potential side effects from magnesium sulfate use in the setting of preeclampsia/eclampsia.

Specific comments:
Abstract:
1. The Abstract is concise and adequately describes the study.
2. As the issue of "study groups" is not explained in the abstract, the way the rate of respiratory depression "in 25 study groups" is presented in the results section of the abstract is confusing when "a total of 24 studies" were included. (Minor Essential Revision)

Background:
1. Overall, the introduction is well organized and adequately presents the research question and its clinical importance.
2. Please be consistent with the use of "pre-eclampsia" or "preeclampsia" throughout the entire manuscript. Minor Essential Revision)
3. Third paragraph, fifth line on page 4 – please delete the first "compared". Minor Essential Revision)

Methods:
1. The rational of why studies from high-income countries had to be excluded is not clear. Do the authors expect the rate of serious side effects to be different between studies from low-/medium- income countries and high-income countries? As many studies were excluded for this reason it significantly reduced
the potential number of patients to be included in this integrative review. It would be interesting to know if there is really any difference and in what direction. Why not to include all studies and if there is difference to present a sub-analysis for low/medium income countries only? Do the authors have data on this issue? (Major Compulsory Revisions)

2. In line 3 of page 7 it is stated that "Data were extracted only for women who received magnesium sulfate as a therapeutic intervention in observational studies", however, in figure 1 it appears that observational studies were excluded. Please explain or correct. (Minor Essential Revision)

3. On page 6 the authors admit that the review did not make any determinations regarding the quality of the included studies. Thus, if the quality of the included studies was not assessed, the assumption that if one side effect was mentioned but others were ignored equals the fact that they did not occur is not standing on solid ground. It definitely can be that serious side effects such as respiratory depression were recorded but others such as absent patellar reflexes were not specifically assessed. This may be the reason for the side effects rate wide range found. The rational of why reporting a relatively low rate of side effect is well understood; however, it is not clear why not to report the incidence of a specific side effect among the study groups it was reported in. For example, absent patellar reflex was specifically reported for 20 study groups. It would be interesting to know the incidence rate among these study groups only. Reporting only the overall incidence among all study groups artificially lowers the incidence rate without any proven basis (again, as quality of studies was not assessed). This should be clearly presented as a limitation of this review. (Major Compulsory Revisions)

4. Page 8, 4th paragraph – 364 women out of 9556 is 3.8% and not 3.6%. Please correct. (Minor Essential Revisions)

Discussion:
1. Overall, the Discussion section clearly discusses the findings of this review and highlights its clinical value. Yet, it can be shortened (Discretionary Revision)
2. A short paragraph describing the limitations of this integrated review can be added. (Minor Essential Revisions)

References:
1. Adequate

Tables and Figures:
1. Clear and useful

Level of interest: An article of importance in its field

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'