Reviewer's report

Title: Required propofol dose and time to emerge for anesthesia are affected by use of antiepileptic

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Reviewer: Jean Guglielminotti

Reviewer's report:

Thank you for giving me the opportunity to review this manuscript. The authors studied 224 patients with 3 medical conditions (autism, cerebral palsy and intellectual disability) and 2 treatment groups (antiepileptic and no antiepileptic) undergoing 226 dental procedures under propofol anesthesia. They aimed to compare:

1) In the subgroup of patients not receiving antiepileptic (149 dental procedures), the effect of the 3 conditions on the “required propofol dose to emerge from anesthesia”, propofol estimated concentration at emergence from anesthesia and time to obtain emergence from anesthesia after propofol infusion discontinuation during 149 dental procedures

2) In the entire sample study, the effect of antiepileptic drugs on the same 3 variables.

MAJOR COMPULSORY REVISIONS

1) I disagree with the labeling of one of the three end-points, called by the authors “required propofol dose to emerge for anesthesia”. Actually, no propofol is required to emerge from anesthesia since emergence requires discontinuation of the propofol infusion and not administration of propofol. The phrase “propofol dose required to..” is appropriate for induction of anesthesia and loss of consciousness that require propofol administration but not for emergence. The authors should have labelled it “propofol dose received during anesthesia/surgery” that may be affected by medical conditions or antiepileptic drugs but also by local anesthetics (Br J Anaesth. 2012 Jun;108(6):979-83.).

2) I agree that propofol concentration at emergence from anesthesia and time to obtain emergence from anesthesia after discontinuation of propofol infusion are clinically relevant end-points. However, it is more usual to examine the dose or concentration required to obtain loss of consciousness during induction of anesthesia. In addition, these 2 endpoints (concentration and time) and the dose of propofol received during anesthesia may have been affected by the 3 medical conditions and the antiepileptic treatment but also by the local anesthetics used during the dental procedure (vascular absorption of the local anesthetic). The lack of assessment of the dose/concentration required for induction of anesthesia and the possible effect of local anesthetics on the 3 endpoints analyzed by the authors is a major limitation of the study.
3) I am not sure that one can use the term anesthesia in this study. The term deep sedation sounds more appropriate since spontaneous breathing was maintained during the procedure and no endotracheal intubation was performed.

4) The design of the study is unclear to me. Is it a prospective study with a prospective recording of the 3 endpoints? Is it a retrospective analysis of medical records or of a database?

5) The study is about the effect of antiepileptic drugs. However, no description of these drugs is provided in the manuscript. Details of the drugs received by the patients should be detailed in Tables as long as the number of drugs that a patient takes.

MINOR COMPULSORY REVISIONS

1) Methods: the minimum smoothing rate for the BIS recording is 15 sec and not 5 sec.

2) Results: 224 patients were included. However, the Tables report 226 patients. I guess that 224 patients underwent 226 procedures? Am I correct? This should be clarified.

3) Results: In tables, does “treatment time” refer to duration of propofol infusion or duration of the dental procedure? This should be clarified.

4) Results: In addition, one would like to have more information about the patients, at least weight and height, presented in Tables.

5) Figure legends: there is no need to repeat the results (dose, concentration, time) that are presented in the section results.

6) Figures: The standard deviation should be added to the mean in the figures.

Level of interest: An article of limited interest

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:

I declare that I have no competing interests