Reviewer’s report

Title: Effects of human insulin and insulin aspart preparations on levels of IGF-I, IGFBPs and IGF bioactivity in patients with type 1 diabetes

Version: 1 Date: 21 January 2014

Reviewer: Emerielle C Vanzela

Reviewer’s report:

The manuscript is well written, detailed and clear. It has a well defined aim and it brings important information in the field of insulin treatment in type 1 diabetic patients and its effect upon the IGF-system. The methods are appropriate and well defined. The data is sound but it needs major corrections (see below). The conclusion and discussion are appropriate. The study limitations are clearly stated mainly in discussion section. The authors did not acknowledge the use of already printed data, but they described it in Methods and in the figure legend. The title and the abstract are linked to the results (major correction for abstract, see below).

Discretionary Revisions

1) Although it is well described that diabetes alters the IGF-system, did the authors consider to test samples from non-diabetic patients to compare the absolute values with samples from patients treated with the testing insulin preparations?

Minor Essential Revisions

Figures:
2) Add statistical differences in all figures (for example, figure 2c).

Major Compulsory Revisions

Methods:
3) The patient features description are different in Results (paragraph 1) comparing with patient section in Methods (paragraph 1, patient section).

Results:

4) The authors must confirm the values in the tables and the text. There are many results description that do not match with the indicated in the tables. For example, in abstract results section: “However, during the entire study, the area under the curve (AUC) of IGFBP-1 was higher following BIAsp50 (mean (range) 351, 312-396 µg*h/l) as compared to pure IA (262, 233-294 µg*h/l) and HI (256, 228-288 µg*h/l, p=0.001).” Those values correspond to AUC 0-3 h and not to AUC 0-9 h. Another example, in abstract results section: “Conversely, HI resulted in a lower AUC of IGFBP-1 than aspart containing preparations during 0-3, 3-6, 6-9 and 0-9 hours.” 6-9 h is not different among insulin preparations, as
depicted by table 1.

References:
5) The authors should consider citing more studies from others groups. Approximately, 1/3 of the cited articles seem to be from the authors group.

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

**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