Reviewer's report

Title: Obesity in children with Down syndrome: The role of some hormonal parameters "a comparative study"

Version: 1 Date: 13 May 2012

Reviewer: Alejandro González-Agüero

Reviewer's report:

The manuscript represents an overall good and novel work, and the lack of studies in Down syndrome populations makes it a very important topic to be addressed. However, I will try to provide some comments and ideas to improve the quality of the study that I think are needed to be considered before publishing.

Major Compulsory Revisions

Subjects and methods

1. Authors stated that they performed anthropometric measurements; write which measurements, how and with which devices.

2. The statistical section should be revised in deep. Two main questions from this reviewer: did you perform Mann-Whitney tests? Or did you Kruskal-Wallis? In the section authors said MW but in the table KW is the name that appears, please clarify this.

3. Whether authors perform KS to test the normality in the distribution of the variables and they found non-normal distribution, why did you perform Pearson’s correlation test instead of Spearman ones, which are more appropriate for non-parametrical samples? I encourage authors to repeat test with Spearman test and then rewrite the results and/or discussion if needed.

Results: this section should be much improved.

1. First of all, I would strongly recommend to the authors the use of subheadings within this section to make the reading easier to the reader.

2. Secondly, when comparing groups, most of the times authors state “significant increase was observed…” but this is not true. As this study did not perform a follow-up, increments cannot happen; just “group A showed significantly higher values of something compared with group B” should be stated.

4. When authors write about “reference range” what do you mean? In the results section you have to provide your findings, afterwards in the discussion you’ll be able to compare with different ranges.

5. It is impossible, as authors say that some p values are 0.0, better write p<0.001 instead.

The last paragraph in page 6 does not provide useful information as the comparisons are between groups that are not related, I would suggest deleting
Discussion: Even though the authors address several important issues, it is difficult to read the discussion as it is (too confusing and not well structured). I would suggest a special focus on improving the quality of the text. There should be a clearer line of reasoning on discussing the findings of this MS. Try to organize the text into: 1) main findings (opening paragraph) and general importance of your findings; 2) contrasting your findings with previous ones – specify that you provide new information because your study is focused on prepubertal children; 3) physiological basis for your findings (genetic condition or other); 4) define your limitations more carefully; 5) try to establish new lines of study or programs promoting health within this population.

Minor Essential Revisions

Background
1. First line, delete “trisomy 21” because DS is the abbreviation authors are using in the manuscript.
2. Use always DS along the text; sometimes authors use Down syndrome again and it is not correct.
3. In the second paragraph and throughout the MS, please change “patients” by “persons”.
4. The sentence “Obesity is characterized by an increase of adipose tissue mass” should be referenced or deleted.
5. Add “The” before “Aim of the study…”

Subjects and methods
6. Do not give mean values of age within this section; authors may give these data better in tables and in this section, give an age-range (2-10 yr) for all participants.
7. State the sentence “…comprised 43 children, not suffering from DS…” in other way, for example “without DS”.
8. Change “BMI was calculated for groups as weight in kilograms divided by height in meter squares” by “BMI was calculated for groups as weight (kg) divided by squared height (m)”.
9. In page 5, ln 2 change “were on thyroxine…” by “were taking thyroxine…”.
10. Please be constant with abbreviations, “Glucose was estimated” should be “FBG was estimated”; insulin resistance IR.
11. The last sentence in the laboratory data section should be deleted as is part of the introduction.
12. Do not use contracted forms of English, as in page 7 last line, “didn’t” or, in the same page, “the syndrome’s characteristics”.

Discretionary Revisions

I would suggest the authors to update a little their references regarding childhood
and adolescence obesity and Down syndrome, there are some works that they did not include and that could be interesting.

A review of Gonzalez-Agüero et al. in Scan J Med Sci Sports which summarizes literature about body composition and DS could be helpful. Also some other works from the same authors about the risk of obesity and/or metabolic syndrome by truncal fat in female with DS.

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

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.