Reviewer’s report

Title: Hormonal aspects of overtraining syndrome: a systematic review

Version: 1 Date: 10 Dec 2016

Reviewer: Julien Louis

Reviewer's report:

General comments:

We acknowledge first the great work done by the authors to update and expand the manuscript, by developing the methods, results and discussion parts. Important references have also been included and discussed in the manuscript.

Although the manuscript has been well developed and enriched by relevant information, it still suffers from its lack of clarity, in particular in the presentation of results. Please refer to the specific comments and suggestions below to improve the clarity of your message.

Specific comments:

- Include ±SD values in the presentation of results (i.e. in percentages presented in the results section)

- The results section is very large, altering the clarity of your message. Indeed, we are a bit lost in the flow of information. Accordingly, I would suggest to gather the results by types of hormones or types of sports in order to facilitate the understanding. An alternative could be also to separate acute and chronic responses.

- A great number of very long tables are also presented and very difficult to understand. The potential reasons could be:

  - too much abbreviations in tables
  - too long tables
  - too numerous
- the absence of real classification between studies in each table. Indeed, a 1st stage would be to order alphabetically the references in tables rather than presenting the studies randomly.

- Table 2: Gather the 2 tables in 1.

Rugby is written "Rugby" and not "Rugbi"

- Table 1 and 3 can probably be combined in 1.

In conclusion, while this article is very interesting and is the first to gather all the relevant results related to the hormonal aspects of overreaching, it still suffers from its lack of clarity, altering the message.

As a potential 1st review of the literature on the topic, this article should be of great clarity to be fully and largely understand and cited in the next studies.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes
Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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