Reviewer's report

Title: Complicated Gitelman syndrome and autoimmune thyroid disease: A case report with a new homozygous mutation in the SLC12A3 gene and literature review

Version: 1 Date: 22 May 2018

Reviewer: Katarzyna Ziemnicka

Reviewer's report:
The authors described a case of patient with Gitelman syndrome and hyperthyroidism caused by Graves' disease. They made analysis of laboratory tests and conducted genetic screening in patient, his mother and son. Authors also analysed already published data about coexistence of autoimmune thyroid disease and Gitelman syndrome.
This work is interesting, although the previous reports described this coexistence mostly in populations from Asia.

There are some corrections that have to be done in this report before publication.

1) The text needs language corrections.
2) Graves's disease is rather the cause than type of hyperthyroidism.
3) "PH" is not a proper form.
4) There is no information what kind of scale was used to evaluate the muscle strength (references?)
5) Normal ranges for fT3, fT4, TRAB, TgAb and etc. are lacking
6) Thyroglobulin could be elevated in autoimmune thyroid diseases, so in this case doesn't bring in any important information
7) Please, give the concentration of haemoglobin in more commonly used units (so, g/dl)
8) Authors write about leucocytes and neutrophils count, and about CK but there are no detailed data nor in the text or in the tables
9) The genetic methods should be described more precisely
10) There is no information whether mother and son of proband were homozygous or heterozygous considering mutation in SLC12A3

11) Authors should properly use terms: incidence and prevalence

12) Gene "variants" should be used instead of gene "variations"

13) Check carefully if all necessary publications were cited and placed in the reference list

14) The titles of the tables should be more accurate and descriptive

**Are the methods appropriate and well described?**

If not, please specify what is required in your comments to the authors.

No

**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.

Not relevant to this manuscript

**Quality of written English**

Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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