Reviewer's report

Title: Polg1 mutations and stroke like episodes: A distinct clinical entity rather by an atypical MELAS syndrome

Version: 2 Date: 11 March 2012

Reviewer: Rita Horvath

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The manuscript by Cheldie et al. reports on a patient with a MELAS-like clinical presentation, who carries mutations in the POLG gene. The clinical presentation of the patient is late onset and relatively mild. The authors discuss MELAS-like presentation as a clinical phenotype of POLG mutations.

Comments:
1. The abstract should summarize the findings of the reported patient, and should not focus on discussing a previous paper (not very recent, from 2007).

2. Patient’s history: The focal hyperintensities are described as older ischaemic lesions. Do the authors think that these lesions are stroke-like lesions related to the POLG mutations, or signs of a real cerebrovascular problem? The later would not be unusual in a 74-79 years old patient.

3. The detailed listing of the facial muscles, but not the muscles of the extremities for electrophysiological examination is very unusual. Did the patient have peripheral neuropathy? This would be very common in POLG deficiency.

4. Were there any family members tested for the detected POLG mutations? The p.T251I and p.P587L mutations were repeatedly reported in cis on the same allele. I think it would be good to show that the third mutation, p.D1186H is on the other allele, which could be shown by analysis of family members.

5. Conclusions: POLG has 23 exons not 22, however exon 1 is not coding. I don’t understand the final conclusion of the paper.

6. Do the authors believe that there is a MELAS-like presentation of POLG deficiency? I think it is not possible to contradict it based on the clinical presentation of this single patient.

Minor comments:
There are also some small grammatical mistakes and the English would require corrections.
“Oculistic” examination – ophthalmological examination
Should not use any abbreviations, such as 79 y.o. in the abstract.
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: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.