Reviewer's report

Title: Retinal nerve fibre layer loss in hereditary spastic paraplegias is restricted to complex phenotypes

Version: 2 Date: 19 August 2012

Reviewer: Denise A. Valenti

Reviewer's report:

1. Is the question posed by the authors well defined?
   Yes

2. Are the methods appropriate and well described?
   While the authors have included a statement regarding how the OCT methods are applied by referring to another paper, this is not adequate. The instrument used needs to be specified. It is unclear why the authors are adamant that this is not necessary as they have done this with the ANOVA. The ANOVA reference is accompanied by the customary indication of what program was used to determine this. At the very minimum I would think the authors would have done so with the OCT. Indicating what instrument was used is not the same as describing the method. Further the authors described what chart was used for acuity. Stating what instrument gives the reader more information about the data. It is not appropriate to have a reader utilize another paper just to figure out which instrument was used.

   Either insert the paragraphs as written/suggested in the cover letter or use a similar style as with the ANOVA.

3. Are the data sound?
   The signal to noise range was pretty low. If this were the instrument in most common usage; ie: stratus, anything below 30 is unacceptable. Since you did not specify what instrument one might assume all data were unreliable. However; For RTVue, IQS varies from 0–100; scans with IQS 60 or above are best quality, IQS between 40 and 60 are medium quality and IQS below 40 are low quality. So if you used a RTVue your scans are not acceptable. For Cirrus, IQS varies from 0–10; scans with IQS 8 or above are best quality, IQS of 6 medium quality and IQS of 3 low quality. So if you used the Cirrus your ratios are really strange. Spectralis uses a signal-to-noise (SNR in dB) estimate for IQS. Scans with SNR 20 dB or above best quality, SNR of 15 dB medium quality and SNR of approximately 10 dB were considered low quality. The only way to have your references to quality/noise ratios make sense are with knowing which instrument you used. Am I making this point clear.

   4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
   No without reporting which instrument the data reports make no sense.
Am I making my point.

5. Are the discussion and conclusions well balanced and adequately supported by the data?

This is an incredibly relevant paper in that it is a good foundation for discussions/data on movement disorder and neurologic disease. Since there are few papers on this regarding OCT retinal imaging it is important to make the paper generalizable to for other disciplines.

One comment that was added which I disagree with was the AD retinal findings are across the retina. This is supported very well by the Parisi paper. However there are other papers that demonstrate regional specific; Berisha et al. This phrase should be either dropped or added to referencing the Berisha paper.

NOT RELATED TO THIS PAPER BUT FOR FUTURE: Using one eye is acceptable for any disease process. Using both eyes and combining data is not reasonable for neurologic disease unless the lack of laterality is well researched. I would suggest testing both eyes in the future; and in particular the mixed findings that were significant. That way you may be able to rule out laterality. That the findings are temporal suggest laterality. This could be a separate paper on your existing data if both eyes were tested....

6. Are limitations of the work clearly stated?

Yes

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?

Yes

8. Do the title and abstract accurately convey what has been found?

Yes

9. Is the writing acceptable?

Yes

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.