Reviewer’s report

Title: High resolution chromosomal microarray analysis in paediatric obsessive-compulsive disorder

Version: 0 Date: 20 Jul 2017

Reviewer: Ryan Yuen

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Grunblatt et al reported a study of copy number variation in early onset obsessive compulsive disorder (OCD). Using a high resolution microarray, the authors found a significantly higher number of rare CNVs (>50kb) affecting genes related to brain and synapse functions in OCD patients. Similar to previous studies, they did not find an enrichment of overall number of rare CNVs or difference in CNV’s size in cases compared to the controls. Some of the associated genes reported here have also been found by previous studies on neurodevelopmental disorders. Analyses done here were mostly adequate and appropriate. The findings were consistent with previous studies.

1. They mentioned that there is only one CNV found from the 74 samples that were included in the previous study, but is there any CNV found in 74 samples from the previous study that was not identified in the present study?

2. Please provide more information on the control samples: Are the control samples run on the same microarray platform? Where were they recruited from? Were they blood samples?

3. The authors should indicate whether the reported CNVs have been validated by independent experiments (e.g. qPCR). If so, please provide details in methods.

4. They said there is no significant difference in the number of all detected rare CNVs between patients and controls. What if they compare the numbers by deletion and duplication separately? How about restricting to CNVs that overlap with genes or coding regions of the genes?

5. Is there a sex bias on the number of rare CNVs found?

6. This study may be more interesting if they have utilized the phenotypic information available for more analyses. For example, are the samples with rare CNVs tend to have more comorbidities? Are they tend to be more severe based on different measures? Is there any difference in IQ?
7. The two cases that the authors discussed, 9025082001 and 9025043001, have additional duplications involved. In particular for 9025043001, the additional duplication was de novo. They may want to discuss the potential effect of the additional rare CNVs.

8. In Table 1, the authors should include other comorbidities investigated from Supp Table 1. Also gene names should be italicized.

**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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