Reviewer’s report

Title: Differences and diversity of autoimmune-mediated encephalitis in 77 cases from a single tertiary care center

Version: 0 Date: 16 Apr 2019

Reviewer: Sarosh Irani

Reviewer's report:

Introduction.

P3 - "Thus, with several novel....." This sentence only highlights rare antibodies. Better to rewrite and include LGI1, GABAB, CASPR2, GABAA. These are far commoner.

This could be more accurately referenced - please see final comments.

If you are not analysing including the 'vesicular' category, there seems no need to include this in the introduction.

Methods

Was this consecutive or selected in some way? 10 per year - seems low form a large catchment. How were the patients identified for the study? - be much clearer; which antibodies? Serum and or CSF? So, are the authors saying that there really were only 77 positive results in 7 years? What was the distribution of those results between 2010 and 2017? For retrospective testing (2010-13), how were the cases to test identified?

Was CT pelvis included in the workup? (only chest / abdomen mentioned)

Were brain sections stained in addition to the transfected cells?

What was the inter-rater reliability of the test interpretations?

Results

Did the distribution of positives amongst 24 provinces also reflect the number of patients from each province? If so, this is worth omitting.

Important to show whether antibodies in Table 1 were present in serum and CSF or just one. Please note NMDAR-antibodies should be included only if present in CSF.

Interesting to see few LGI1 / CASPR2 cases. How can this be explained? Were the patients screened mainly <60 years? Can the age distribution of tested and positive cases be shown in a stacked bar chart? Is HLA-DRB1*07:01 / 11*01 present in Thai populations (see Binks et al 2018 Brain)

Can the authors clarify if the stiff people had GAD antibodies?
They mention two LGI1 in the table, but 4 in the text - please clarify.

Why did so few NMDAR-antibody cases present with psychosis / mood? - maybe best to pool with behaviour given Al-Diwani et al 2019 Lancet Psychiatry

I'm not sure it is worth mentioning the clinical features of the less/non-diagnostic antibodies e.g. SOX / titin / GAD / recoverin. Maybe it would be better if the authors list the cases which were typical / classical for what is already known of the syndromes (and say little more), but focus on the ones where the clinical observations were more novel.

Why did one patient die?

Can the authors make it very clear how patients were treated? It seems they received very few immunotherapies. Also, can the authors show how long after disease onset they were treated?

None of the p values persist after multiple corrections - this is expected because the authors are mixing several different syndromes in each category.

Can the authors show mRS 0-1 in the table 2?

Referencing

The authors have omitted several relevant references including those relating to LGI1 (Thompson et al 2018 Brain, Gadoth et al 2017 Ann Neurol), AMPA/GABA (Patit-Pedrol et al 2014 Lancet Neurol, Dogan-Onugeren et al 2016 JNNP), NMDAR (Al-Diwani et al 2019 Lancet psych, Varley et al 2018 JNNP). When citing these, it will be useful to see the authors reflect on whether their findings were present in the Thai cohort.

Please remove the Paterson et al reference which is now not relevant given our knowledge about the more irrelevant VGKC antibodies.

Can the authors compare / contrast their findings to those from the South Korean group whose ethic population may be more similar amongst major papers published in the field.

There are also lots (?10) different reviews cited - would be better just to choose 2/3 to avoid repetition.

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.

I am able to assess the statistics

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

Acceptable

**Declaration of competing interests**
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organisation that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I hold a patent on LGI1 / CASPR2 testing

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors’ responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal