Reviewer’s report

Title: Overtime trend of thyroid hormones and thyroid autoimmunity and ovarian reserve: A longitudinal population study with a 12-year follow up.

Version: 0 Date: 15 Jan 2019

Reviewer: Lucy Ann Behan

Reviewer's report:

This is an interesting and well written analysis of differences in thyroid function and autoimmunity over time based on baseline ovarian reserve in a large cohort reproductive age women with "documented natural fertility" followed up for 12 years.

Many studies in this area focus on infertile women which can result in a skewed perception of the impact of TPO antibodies on ovarian reserve and fertility, whereas this group focused on this occasion on the association between thyroid function, autoimmunity and ovarian reserve.

Findings included

1. Higher baseline TPO levels in the women in the lowest ovarian reserve category, although TPO positivity was no different between the AMH quartiles at baseline as per table 2 - I think this should be emphasised more in the manuscript.

2. Although the odds ratio of TPO positivity was 2.08 fold higher in Q1 compared to Q4, I think the concluding statement of the abstract should be less strong and suggest that the Q1 group MAY be at a higher risk of hypothyroidism over time.

3. If the authors are tight on space for tables Table 1 could absorb table 2 and still be very clearly understood

4. Table 4. legend - anti-mullerian hormone missing an "L"

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.

No

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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