Reviewer’s report

Title: Genetic and epigenetic characteristics in ovarian tissues from polycystic ovary syndrome patients with irregular menstruation resemble those of ovarian cancer

Version: 0 Date: 14 Jan 2019

Reviewer: Pavlina Andreeva-Gateva

Reviewer's report:

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This is a paper describing results of the genetic and epigenetic evaluation of polycystic ovary syndrome (PCOS) ovarian tissues with regular menstruation (n = 10) and irregular menstruation (n = 10). DNA methylation sequencing, real-time PCR array, whole-exome sequencing, and bioinformatics analysis were performed. Authors provided genetic and epigenetic basis for the clinical relationship between irregular menstruation and increased risk for ovarian cancer.

Comments:
1. Description of the study participants is to be placed in the main text rather than in the supplement. Yet, looking at the patients characteristics, I could not say that the patient have hyperandrogenia. When the hormonal evaluations were performed? What medications were used? How far from the first diagnostic were taken the tissue samples for evaluation? In general, the patients need to be better characterized.

2. What was the definition of irregular menstruation applied? The criteria "2 to 12 months" is it applicable for all 10 patients in the group of irregular menstruation?

3. Figure 1 A - DNA methylation level is calculated as % of what? And the dotes are presenting what? Please, explain.

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?
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Yes

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If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.
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Quality of written English
Please indicate the quality of language in the manuscript:
Acceptable

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