Author’s response to reviews

Title: Plasma level of peroxiredoxin 3 in patients with polycystic ovarian syndrome

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Version: 1 Date: 15 Jan 2019

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BEND-D-18-00400

Plasma level of peroxiredoxin 3 in patients with polycystic ovarian syndrome
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BMC Endocrine Disorders

Dear Editor,

We have revised our manuscript "Plasma level of peroxiredoxin 3 in patients with polycystic ovarian syndrome" according to the comments of Reviewers.

All the expanded or revised contents were highlighted in “Arial Black”.

Editor Comments:

BMC Endocrine Disorders operates a policy of open peer review, which means that you will be able to see the names of the reviewers who provided the reports via the online peer review
system. We encourage you to also view the reports there, via the action links on the left-hand side of the page, to see the names of the reviewers.

Re: Yes, I saw the names of the reviewers and viewed the reports via the online system.

Great thanks!

Reviewer reports:

Mostafa Ibrahim Waly (Reviewer 1):

Dear authors, kindly note the following points:

1- Statistical analysis software which was used in the study (e.g. Methods section, line 12, page 5).

Re: The statistical analysis software has been described in “Materials and Methods” section (Methods section, line 4, page 6).

2- Correlation coefficients (r) values were computed in table 3 without being mentioned in the methods section, pages 5-6.

Re: Spearman correlation analysis has been mentioned in “Materials and Methods” section (Methods section, line 8, page 6).

3- Modify tables (1-3) by adding the p values of significance in the footnote under the table.

Re: The p values of significance have been indicated in the tables. (Tables 1-3, page 18-20).

4- Check the accuracy of the cited references (17 & 28).

Re: The accuracy of the cited references 28 (now changed to be Ref. 31) has been checked. As for reference 17, we cite this reference to define “obesity” since this is the governmental criteria made by the National Health and Family Planning Commission of the China. We provided the website from which you can find the document (The website has been corrected. Ref. 17, line 17, page 14).

Great thanks!
Victor M. Victor (Reviewer 2):

The article by Liu et al was conducted to investigate the role of PRX3 in the pathogenesis of polycystic ovarian syndrome (PCOS) featured in insulin resistance. They examined the circulating PRX3 in PCOS patients and control subjects by enzyme linked immunosorbent assay. Levels of ROS and oxidized PRXs were detected in mouse islet cells treated with gradient glucose. They did not find significant difference of fasting plasma PRX3 between PCOS patients and controls. No association was noticed between fasting plasma PRX3 and fasting plasma glucose or insulin. However, the plasma level of PRX3 was increased at 2h and began to fall back at 3h of oral glucose tolerance test (OGTT). There was a one hour time lag of peak values between plasma PRX3 and insulin, and the plasma PRX3 at 2h was positively correlated with the insulin level at 1h of OGTT of PCOS patients. The level of ROS was significantly elevated at 1h and oxidized PRX3 was increased dramatically at 2h of 16.7mM glucose stimulation in mouse islet cells. They conclude that it seems that PRX3 does not show its antioxidant function under baseline conditions. Instead, PRX3 responds to oxidative stress induced by rapid release of insulin in patients with PCOS.

This article is simple and has some valuable data. I have the following comments:

- Endocrine and anthropometric parameters should be shown in the table.

Re: A new table (table 1) has been created to show the endocrine parameters (page 18), and the anthropometric parameters (Obesity and BMI) have been shown in table 2 (page 19).

- Discussion should be expanded as well as include new references such as: Induction of oxidative stress and human leukocyte/endothelial cell interactions in polycystic ovary syndrome patients with insulin resistance. Victor VM, Rocha M, Bañuls C, Alvarez A, de Pablo C, Sanchez-Serrano M, Gomez M, Hernandez-Mijares A. J Clin Endocrinol Metab. 2011 Oct;96(10):3115-22.

Re: The “Discussion” section has been expanded by citing above reference and more (Discussion section, lines 5-14, page 9).

- The potential role of PRX as an antioxidant enzyme should be discussed because the authors have shown an increase in ROS at different times.

Re: The potential role of PRX as an antioxidant enzyme has been discussed in the “Discussion” section (Discussion section, lines 3-5, page 9).

- Which is the contribution of PRX3 in comparison with other sources of ROS?

Re: Since PRX3 is predominantly located in mitochondria, the main contribution of PRX3 would be the removal of mitochondrial ROS.
Levels of mitochondrial ROS should be evaluated in order to know the mitochondria as a source of ROS.

Re: It is generally accepted that mitochondria are the main source of ROS, which spread out readily. In fact, dichlorofluorescin diacetate is a common probe for the detection of intracellular and mitochondrial ROS. e.g.:


Furthermore, we detected oxidative stress in mouse islet cells and found a cooperative response of PRXs including PRX1, PRX2, and PRX3, which was discussed in the “Discussion” section (Discussion section, lines 21-22, page 9; lines 1-3, page 10).

Why the authors have selected infertile women as controls? PCOS patients can be infertile or fertile depending on the medical status and treatment. If you include fertile controls, the results are different?

Re: The corresponding author Li L works in the Department of Reproductive Medicine, which means that most of the patients are infertile. Therefore, we included infertile women without PCOS as controls, although the results would be no difference even we included fertile controls.
Great thanks!

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