Reviewer’s report

Title: Association of circulating CEACAM1 levels and insulin sensitivity in gestational diabetes mellitus

Version: 0 Date: 20 Aug 2019

Reviewer: Seval Ozgu-Erdinc

Reviewer's report:

This is the study first study investigating circulating Carcinoembryonic Antigen-related Cell Adhesion Molecule 1 and GDM and IR. The authors designed a case-control study on this highly interesting subject. However, there are many issues to be corrected.

1- The manuscript should be entirely revised by a native English speaker. The abbreviation of CEACAM1 must be all capital letters throughout the manuscript. Many grammatical errors, missing verbs are present both in the abstract and manuscript.

2- The introduction section: The definition of GDM has been changed by ADA and the cited 2018 reference also defines as "GDM is diabetes that is first diagnosed in the second or third trimester of pregnancy that is not clearly either preexisting type 1 or type 2 diabetes".

The second sentence "In recent decades, with the rapid development of economic and the improvement of living standards, the morbidity of GDM has been increased dramatically, countries especially in some developing"?? How the authors come to that conclusion that the morbidity of GDM has been changed by the decades. The change is the prevalence of GDM through decades, the morbidity is always the same.

3- Material methods section should be extensively revised. No sample size and power calculations has been reported. 8.5mmol/l= 153 mg/dl not 150mg/dl.

The glycosylated hemoglobin Alc (HbA1c), serum glucose and insulin utilization methods with range and coefficient of variability need to be specified. The last sentence "Homeostasis model assessment of insulin resistance (HOMA-IR) =fasting insulin (FINS, mU/L) × fasting glucose (FPG, mmol/L)/22.5; insulin sensitivity index (ISOGTT) =10000/sqrt ( FPG × FINS × mean glucose ×mean insulin);homeostasis model assessment β-cell function(HOMA-β)=FINS×20/(FPG-3.5);" has no verb????

4- The results section (table 1) showed that the sampling method is biased as the age of study and control subjects are statistically significantly different. The BMI's are same in contrast (which GDM subjects should have higher BMI's)

The authors report that "As shown in table1, compared with NGT group, the subjects with GDM had higher gestational age," However, in table 1 "Week of gestation 24.66±1.10 vs. 24.81±1.12; p value=0.404". this misinformation should be corrected.
5-The discussion section:

In Page 6 There are missing citations for the sentences "On the other hand, earlier studies indicated that ceacam1 was associated with some metabolic diseases." and "Consistent with this study, Heinrich et al. also indicated that ceacam1 mRNA levels were declined significantly in the liver of obese humans and obese rats."

The authors found CEACAM1 levels to be higher in the GDM group although this finding was not statistically significant its against the expected (previous studies) they should discuss the reason for this.

The authors (page 7 line 56) report that "Firstly, due to the cross-sectional nature of this study." however, they have made a case-control study, a study cannot be called as cross sectional as long as they have included all the subjects in a particular time period.

**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.

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 recommend additional statistical review

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