Author’s response to reviews

Title: Antepartum urinary tract infection and postpartum depression in Taiwan - a nationwide population-based study

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Responses to Reviewers

This article was an observation study examining the association between antepartum urinary tract infection and postpartum depression using data from the National Health Insurance Research Database of Taiwan. The initial introduction is good, however I would question the statistical analysis as it is unclear how the model was derived to best fit the data. I would suggest that this data is reanalyzed and both unadjusted and adjusted odds ratios are reported.

1. Overall the grammar i.e. tenses used are not always consistent, please revise this

Response: Thanks for your comment.

We’ve correct the overall grammar in this article.
2. In your introduction, could you expand on the disparity between the DSM definition (4 weeks) and the actual 6 months; please provide a reference for 6 months. (Line 4&5 on page5)

Response: Thanks for your comment.

Please see the revised manuscript, Introduction section, Page 2 Line 4-5

Indeed, DSM V criteria defined PPD as a major depressive episode with an onset in pregnancy or within 4 weeks of delivery. However, in clinical practice and in many research studies, time frames that range even up to one year are used to define the postpartum period. The proposed revision for the “with postpartum onset” specifier will include episodes that begin within six months of delivery. [A] We’ve added the reference (reference no. 5) into introduction section.


3. Please include an explanation for why women below 20 years were excluded from the study. It seems that age could be a confounding factor and it is unusual to exclude this age-group from studies regarding pregnancy. (Line 8, page 6).

Response: Thanks for your comment.

In Taiwanese civil law, people in their twenty years of age are adult. In general, study population of adults are able to be approved by the Institutional Review Board in Taiwan. Study of under 20 year-old patients are difficult to be approved by the Institutional Review Board in Taiwan.

4. It is unclear if the urine analysis was collected by the health professionals and then information was collected via the insurance company or if the urine was collected by researchers. (line 15, page7).
Response: Thanks for your comment.

The National Health Insurance (NHI) was launched on March 1, 1995 for the right to health care of all of the country’s citizens of Taiwan. When citizens enroll in the National Health Insurance program, they have to apply for a National Health Insurance Card. The National Health Insurance Cards must be presented every time when citizens visit a clinic or hospital. The chip embedded in the card stores records of your last six medical visits, information on catastrophic illness, records of all important tests, and medication information. Citizens have used their NHI Cards to clinics or hospitals where will use their NHI Card readers to automatically update their cards. The urine analysis was collected by physicians. When UTI diagnosed by physicians, the data will be immediate recorded into NHI cards and upload to National Health Insurance Administration via NHI Card readers. There has been no delay between the diagnosis and the entry of the patient-data in the database. The database of this program contains registration files and original claim data for reimbursement. Large computerized databases derived from this system by the National Health Insurance Administration, Ministry of Health and Welfare, Taiwan and maintained by the National Health Research Institutes, Taiwan, are provided to scientists in Taiwan for research purposes.

5. It is unclear if you included or looked at woman had depression before the pregnancy (with regards to prescriptions x number of months before pregnancy).

Response: Thanks for your comment.

Please see the revised manuscript ,Method section , page 3, line 12-14

And revised Figure 1

After tracing back our raw data, there were 20 women with childbirth had previous history of major depressive disorder and 1,942 women with childbirth under 20 year-old. We’ve change sentence in method section.
6. You need to make it clearer how and why covariates were chosen. It is also unclear how the statistical models were chosen (i.e. log likelihood tests and AIC); it seems that all covariates were included into the model. There seems to be collinearity with covariates. I recommend that you re-do this analysis and do a forward stepwise approach to choosing the model of best fit.

Response: Thanks for your comment.

Please see the revised manuscript, Method section, Page 4, Line 2-3

The covariates of antepartum, peripartum, and postpartum complications which were related to PPD according to previous study in the literature[21]. Yang et al demonstrated that there were significant associations between PPD and various antepartum comorbidities including antepartum hemorrhage, premature separation of placenta, placenta previa, eclampsia or pre-eclampsia, heart disease, anemia, syphilis, asthma, unspecified disorder of the thyroid, epilepsy, unstable lie, polyhydramnios, oligohydramnios, poor fetal growth, other known or suspected fetal abnormalities, cervical incompetence, early onset of delivery, psychosis and antepartum depression. Postpartum complications including postpartum hemorrhage, endometritis, subinvolution of uterus were also significantly associated with PPD.

On the other hand, the logistic regression analysis for certain risk factors of PPD in this study revealed that peptic ulcer disease, chronic kidney disease, heart disease, hypertension-complicated pregnancy, epilepsy, early delivery onset and antepartum UTI were significant risk factors of PPD.

Reference

7. It is also not recommended to put Antepartum UTI, Upper UTI and Lower UTI as one variable. You would need to divide it by Total antepartum UTI compared with no UTI or the Upper UTI and Lower UTI compared with no UTI.

Response: Thanks for your comment.

The result of adjusted OR of antepartum UTI, upper UTI and lower UTI are 1.47, 2.70, and 1.38, compared with no UTI (Table 2). We further divided the antepartum UTI into upper and lower UTI due to upper UTI more severe than lower one. Upper UTI is also known as kidney infection (pyelonephritis) which cause more severe symptoms including flank pain, fever, or nausea and vomiting. In addition, untreated upper UTIs are associated with low birth weight, prematurity, premature labor, hypertension, preeclampsia, maternal anemia, and amnionitis [a]. To date, there has been no study to discuss between upper antepartum UTI and PPD. We conducted a population-based study of Taiwan to investigate antepartum UTI (upper and lower UTI) and PPD.

Reference


8. Please explain why you have not included age in the model.

Response: Thanks for your comment.

Indeed, age is one of risk factor of PPD. Younger maternal age were well established to be a risk factor for PPD[1,2,3,4]. Thus, we considered younger maternal age is a well-known risk factor of PPD and did not do further analysis in our study.
Reference:


9. Please be consistent with reporting Odds ratios to one decimal place rather than 3, this includes CI

Response: Thanks for your comment.

Please see the revised manuscript Result section, page 5, line 22-32 and revised Table 2

We’ve correct all the reporting Odds ratios and CI with two decimal place

10. Please use ASM criteria for reporting p-values.

Response: Thanks for your comment.
We’ve correct p-values report according ASM criteria. Please see the revised manuscript Result Section, page 5, line 22-32.

11. It would be more useful to report unadjusted as well as adjusted odds ratios and not include estimate, standard error and Wals Chi-Square (unless you discuss these in the results section).

Response: Thanks for your comment.

Please see the revised Table 2

We’ve deleted estimate, standard error and Wals Chi-Square and added unadjusted odds ratios in revised Table 2