

## **Response to Reviewer 1 Comments**

**Point 1:** Comments Line 80 «patients with PCOS were noted to be insulin-resistant after adjustment». What kind of adjustment?

**Response 1:** In the original study, the researchers adjusted for common confounders, such as age, race, and BMI. We have added this information in the Introduction section (Line 104).

**Point 2:** Lines 125-127 Why «women who underwent gynecological ultrasonography or blood testing for testosterone or 17-hydroxyprogesterone levels» were an inclusion criteria? The fact of the testing does not mean an abnormal result.

**Response 2:** We thank the reviewer for indicating this unclear point and giving us an opportunity to clarify it. To ensure that patients had undergone PCOS-related examinations by licensed physicians, gynecologic ultrasound examination or blood test for testosterone was necessary. We agree that testing does not indicate abnormal results. Thus, a patient should meet all three conditions to be categorized in the PCOS group (Lines 155–160).

**Point 3:** Line 128 Why type 2 diabetes, IGT, gestational diabetes were exclusion criteria? If it was only at the time of first PCOS diagnosis, then it should be clearly written in the text.

**Response 3:** In our study, we aimed to describe the incidence of newly diagnosed T2DM in women with PCOS compared with women without PCOS. Thus, we excluded patients with diseases or disease potential that can be viewed as any abnormality in glycemic status before the date of the initial PCOS diagnosis. To clarify this point, we have added the description in Lines 163-164.

**Point 4:** Line 142 Please specify by which comorbidities were controls matched to the cohort group?

**Response 4:** We have added a short paragraph about the comorbidities matched in this study (Lines 179–182).

**Point 5:** Discussion Among study limitations it should be noted that the sample size of the groups of women diagnosed with PCOS after age 35 were relatively small and

it may be the cause of the lack of statistical significance.

**Response 5:** Thank you for providing this valuable suggestion on improving the quality of our article. We admit that the sample size of the groups of women diagnosed with PCOS after the age of 35 years was smaller than that of the other groups. Due to this reason, precise estimates and statistical significance was not achieved. Therefore, we have added this point to the limitations stated in the Discussion section (Lines 361-363).

**Point 6:** It should be described if it was possible to be sure that women diagnosed with PCOS in the Health Insurance Database were indeed first diagnosed. Could they attend a doctor at some other medical organization before entering the Longitudinal Health Insurance Database?

**Response 6:** Indeed, we could not confirm that all women in the case group were first diagnosed with PCOS. NHI covers 96%–99% of Taiwan’s population, and 93% of hospitals and clinics are NHI-contracted. NHI subsidizes most medicines at a relatively low cost, and the proportion of patients seeking consultation outside the NHI system is relatively low. However, there is a possibility that patients reviewed in this study might have consulted other doctors before entering the NHI system. Thank you for pointing out this limitation of our study. We have added this to the limitations stated in the Discussion section (Lines 357–361).

**Point 7:** Table 1. Please unfold abbreviations. Disorders of «lipoid metabolism» should be corrected for «lipid metabolism».

**Response 7:**

Thank you for this comment. We have presented Tables 1 and 2 with abbreviations.

**Response to Reviewer 2 Comments**

**Point 1:** In this study, participants were stratified according to the presence or absence of comorbidities or of medication. Among women without comorbidities and no medication, the PCOS group exhibited a higher incidence of T2DM compared with the control group. The relevant rationale is suggested to expand in discussion section.

**Response 1:** Thank you for providing this valuable suggestion on improving the

quality of our article. As per your suggestion, we have expanded the corresponding paragraph in the Discussion section (Lines 332–343).

**Point 2:** The control group should be named uniformly in the figure and table. In the last sentence of the study population and outcome assessment, the first 'cohort group' should be 'control group'.

**Response 2:** Thank you for your comment. We have made necessary corrections in the relevant figure and table (Table 1, Fig. 2, Line 177)