Reviewer's report

Title: Association between CYP19 gene SNP rs2414096 Polymorphism and polycystic ovary syndrome in Chinese women

Version: 2 Date: 1 September 2009

Reviewer: Agathocles Tsatsoulis

Reviewer's report:

The authors reported an association between SNP rs2414096 of the CYP19 gene with PCOS among Chinese women. They also found that PCOS women who were carriers of the AA genotype had higher E2/T ratio, lower FSH levels and earlier age at menarche than GG genotype carriers. However, these parameters were not different between the different genotypes in the control group. Based on these findings, the authors concluded that the AA genotype may confer increased aromatase activity.

Although this is a potentially interesting study, there are certain points of concern.

1. Major compulsory Revisions:

It is rather strange that E2/T ratio as well as FSH levels and age at menarche were different between the AA and GG genotypes only in PCOS women but not in the control women. If the AA genotype was associated with increased aromatase activity, then one would expect the above differences to be seen in patients and controls. Then the difference in the distribution of the genotypes between PCOS and normal women would be meaningful. Also of concern is the fact that a previous study by Petry et al. found that the AA genotype was associated with higher Testosterone levels, indicative of reduced aromatase activity. Of concern is also the wide variation in measured E2 levels as indicated by the high SD values. One, therefore, wonders whether increasing the number of controls would produce different findings.

Minor Essential Revisions:

1. In the Conclusions of the Abstract, the statement that SNP rs2414096 is "associated with the activity of aromatase" is a speculation. I suggest that the whole paragraph is rephrased to reflect the real findings.

2. In the Materials and Methods section, the authors should describe how the information about the age at menarche was obtained.

3. The discussion is rather lengthy and repetitive. On the 3rd page of the discussion, last paragraph, the sentence: "However, whether this SNP is causing the association directly or it is just in LD with another causal SNPs", is incomplete.

4. The paper needs checking for grammar and syntax by a native English speaker.
**Level of interest:** An article of importance in its field

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

"I declare that I have no competing interests"