Reviewer’s report

Title: The Temporal Reliability of Serum Estrogens, Progesterone, Gonadotropins, SHBG and Urinary Estrogen and Progesterone Metabolites in Premenopausal Women

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Reviewer: Dr Timothy Key

Level of interest: A paper whose findings are important to those with closely related research interests

Advice on publication: Accept after discretionary revisions

This is a thoughtful examination of the reliability of sex hormone measurements in premenopausal women. The results have important implications for the design of future epidemiological studies. The paper is well-written and I have only minor comments with suggestions for discretionary revisions.

1. Abstract. Why give the Results before the Methods?

2. Methods, Urine analysis. Sate that the results are given as concentrations, not as daily excretion or adjusted for creatinine excretion.

3. Units. Consider giving results in moles not grams?

4. Results, para 2, second half. This might be better placed in the Discussion.

5. Figures. Label x-axis in months. For Figure 4, the scale of the y-axis demonstrates that the percentage variation is relatively narrow, but obscures how much cross-over there is between women. It might help to show this on an expanded scale?

6. Table 3 and corresponding text. For relative method, value for SHBG appears to be 0.48 in Table and 0.41 in text? Also, in my version the upper confidence intervals were missing for ICCs in Table 3.

Competing interests:

None declared.