The sex ratio of offspring is associated with the mother’s age at menarche

Sir,

We read with great interest the article by Fukuda et al. (2011) regarding the association between sex ratio of offspring and the mothers’ age at menarche. The authors conclude that women entering menarche outside the normal range, especially those with earlier menarche, may have an increased chance of producing female offspring partially because of increased spontaneous abortions of male zygotes. While we agree that mothers’ age at menarche may be related to offspring’s sex, we have doubts that analyzing only mothers’ age at menarche, offspring’s gender and sex ratio is sufficient to draw this conclusion.

First, the methods for this study were not explained very clearly. The attending age of the participants at attendance was 37.5 ± 7.2 years, range 22–54, but the article did not specify the age at delivery, the gestational age, BMI, participants nutritional status or any other detailed information, such as delivery times. The authors state, that when the maternal age is less than 31 years old, sex ratio is 1.095 (1998:1824), and when the maternal age is more than 32 years old, the sex ratio is 0.931 (363:390). There were significant differences (P = 0.0411) between them. Therefore, the mother’s age at pregnancy may be a confounding factor of sex ratio (Matsuo et al., 2009). We consider that women over 35 and under 16 years old at delivery should have been excluded from the study, or that the authors should do stratified analysis. In short, factors affecting sex determination is not currently clear. We should consider other factors that may affect sex determination, rather than exclude other confounding factors.

Secondly, of the 10,847 women of this study, the largest proportion experienced menarche age between 11 and 14 years, 1350 had had menarche by 11 years old, 3241 women by age of 12, 2819 women by age of 13 and 2273 women by age of 14 group. The number of participants in the remaining groups was rather small and in terms of sample size variations that may be related to sex ratio of the earlier menarche. However, they do not provide any information about spontaneous abortion rates, or serum E2 levels of these women and other indicators.

In our opinion the Fukuda et al. study is very interesting and bold. However, we feel that caution is required in drawing conclusions and further large-scale multi-center clinical studies are required.

References


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Sir,

We thank Dr Helle for his interest in our work. He suggested that our work has some methodological shortcomings that may have affected the results. The data were collected from our clinical charts, which unfortunately did not include information on