



Letter to the Editor

Comments on 'Preconception paternal/maternal BMI and risk of small/large for gestational age infant in over 4.7 million Chinese women aged 20–49 years: a population-based cohort study in China'

To the Editor,

Weixiu Zhao^{1,2} and Renyong Xu^{1,2*}

We read with great interest the article by Guo *et al.*⁽¹⁾, which evaluating the association between parental pre-conceptional BMI and risk of small or large for gestational age (SGA or LGA) neonates in about 4.7 million reproductive Chinese women. It was not surprising to find that maternal pre-conceptional BMI was associated with SGA or LAG. Interestingly, the results also confirmed that paternal body weight was also associated with pregnancy outcomes: father with underweight was associated with higher risk of SGA infants (OR = 1.17; 95 % CI: 1.15, 1.19), while father with overweight and obesity was associated with LGA, compared with those with normal BMI (OR = 1.08 for overweight and 1.19 for obesity, both $P < 0.05$) after adjustment of potential confounders.

Numerous studies have been performed to focus on maternal health to ensure a healthy baby; however, pre-conceptional paternal health is usually neglected. Animal studies have proved that paternal pre-conception epigenetic information, including dietary and behavior information, could be transferred to next generation, where sperm could serve as a possible carrier⁽²⁾. We have reported that paternal pre-conceptional BMI was associated birth weight in 1180 Chinese full-term neonates after adjustment of maternal pre-conceptional BMI and gestational body weight gain⁽³⁾. As the largest comprehensive population-based cohort study to explore the association between the parental preconception BMI and the risk SGA/LAG, Guo's study⁽¹⁾ provided strong human evidences to suggest that more efforts, or at least equal efforts, should be put on paternal pre-conceptional health as well as maternal health. However, the following concerns need to be further clarified.

First, paternal epigenetic information might obey the sex-specific rule in which father associated closer with son while mother associated closer with daughter⁽⁴⁾. A subgroup analysis by offspring sex is necessary to assure if there is a similar manner. If so, it could provide more information that paternal epigenetic information might mark on Y Chromosome that could only be inherited by male offspring⁽⁵⁾. Second, paternal history of chronic metabolic diseases (e.g. hypertension and diabetes) was deficient, which might have impact on birth outcomes too⁽⁶⁾. It is appropriate to list it as a limitation.

¹Department of Obstetrics, Ren Ji Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai, People's Republic of China

²Department of Clinical Nutrition, Ren Ji Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai, People's Republic of China

*email xurenyong7465@126.com

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