Minimizing the risk of macrosomia

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DEAR EDITOR,

We have read the article entitled " Association between maternal factors and fetal macrosomia in full-term singleton births" published in the latest issue of the *Journal of the Chinese Medical Association* with interest.[1] Chen et al investigate the association between fetal macrosomia and comobilities of both mothers and newborns.[1] The authors found that gestational diabetes mellitus (GDM), maternal 6-month gestational weight gain (6-m GWG), and maternal body mass index (BMI) are significantly correlated with macrosomia of term deliveries.[1] We congratulated the authors' successful publication, but some questions raised our curiosity and need clarification.

First, the mean gestational age is significantly higher in the group of macrosomia than normal birth weight (NBW) and low birth weight (LBW) (39.1 ± 0.9 vs 38.8 ± 1.0 vs 37.9 ± 0.9, $p < 0.001$). The difference in gestational age in the group of macrosomia, NBW, and LBW might result in the risk of bias. Previous randomized trial and population-based studies showed 39 gestational weeks is a better timing of induction, with less cesarean section rate and fewer perinatal adverse events.[2] In addition, the term "full-term" used in this article may be at higher risk of misuse. Full-term stands for neonate born at $39^{0/7}$ to $40^{6/7}$ weeks of gestational age.[3]

Second, the rate of maternal infection is unusually high in this cohort (33.8%, 29.8%, and 37.0% in macrosomia, NBW, and LBW groups, respectively). Previous studies reported intraamniotic infection accounts for only 2%–5% of term deliveries.[4] The possible explanation is that the maternal infection is defined as group B streptococcus (GBS) colonization here, albeit without a clear definition of maternal infection in the article. However, GBS colonization, which makes up approximately a quarter of women, is different from GBS infection.[5]

Third, the authors only investigated the relationship between GDM and macrosomia, but not pre-existing DM. Women with pre-existing DM might have a fasting blood glucose level > 126 mg/dL, and 2-hours OGTT > 200 mg/dL. Thus, they did not meet the criteria of GDM, and might be wrongly categorized as "normal (non-GDM) women". Furthermore, pre-existing DM and GDM may have varied degrees of impacts on fetal overgrowth, despite inconsistent results of previous studies.[6] Besides, the rates of GDM were 18.2% in neonates with macrosomia and 3.3% in those with NBW, respectively, which cannot directly translate into their description. Neonates born to mothers with GDM had a higher incidence of macrosomia than those born to mothers without GDM using the following statistical results "18.2% vs 3.3," since the latter should be calculated by that macrosomia babies divided by mothers with and without GDM. We believed that the description is correct that mother with GDM may have a higher risk to deliver the macrosomia baby than mother without GDM may (9.0% [14/156] vs 1.5% [63/4106]), and additionally, the multivariate analyses really revealed that maternal diabetes had a higher odds ratio of macrosomia.

Despite the aforementioned questions, the authors provided evidence of macrosomia and the association with GDM, 6-m GWG, and maternal BMI.[1] Another study conducted in Taiwan also discovered that maternal overweightness/obesity and GDM are associated with large-for-gestational-age (LGA) babies.[7] Although LGA is not totally equal to macrosomia. A Japanese study found that early glycemic control at <32 gestational weeks in GDM mothers reduces the incidence of LGA neonates.[8] To sum up, it reminds clinicians of the importance of proper glycemic control in GDM women, monitoring GWG as well as taking pregestational BMI into consideration.[9] Healthcare providers should implement strategies to minimize the risk of macrosomia and avoid the consequence of both maternal and neonatal adverse events. We appreciate the authors' great work focusing on this topic. We hope to learn more from the authors with positive response.

ACKNOWLEDGMENTS

This article was supported by grants from the Taiwan Ministry of Science and Technology, Executive Yuan, Taiwan (MOST 110-2314-B-075-016-MY3 and MOST 111-2314-B-075-045), and Taipei Veterans General Hospital (V112C-154 and V112D64-001-MY2-1). The authors appreciate the support from Female Cancer Foundation, Taipei, Taiwan.

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Conflicts of interest: Dr Peng-Hui Wang, an editorial board member at Journal of the Chinese Medical Association, had no role in the peer review process of or decision to publish this article. The other authors declare that they have no conflicts of interest related to the subject matter or materials discussed in this article.

Journal of Chinese Medical Association. (2023) 86: 536-537.

Received January 26, 2023; accepted February 1, 2023.

doi: 10.1097/JCMA.0000000000000901.

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