

Adipokines and Insulin Resistance According to Characteristics of Pregnant Women with Gestational Diabetes Mellitus (*Diabetes Metab J* 2017;41:457-65)

Eon Ju Jeon, Ji Hyun Lee

Department of Internal Medicine, Catholic University of Daegu School of Medicine, Daegu, Korea

We would like to thank Dr. Ryu's interests and comments on our study titled "Adipokines and insulin resistance according to characteristics of pregnant women with gestational diabetes mellitus" published in *Diabetes and Metabolism Journal* [1].

As mentioned in the letter, the clinical implications of gestational diabetes mellitus (GDM) are associated with adverse outcomes in pregnancy, and GDM has long-term consequences both for the mother and her offspring, including the development of type 2 diabetes mellitus and cardiovascular diseases. Adipokines have an important role in the regulation of insulin resistance. During pregnancy, there is a significant increase in leptin and decreased in adiponectin compared with non-pregnant state. Most studies have shown that leptin is higher and adiponectin is lower in pregnant women with GDM than those without GDM, although there are differences between studies. It is well-known that GDM is associated with becoming pregnant at an older age, higher pre-pregnancy weight and body mass index (BMI), a history of GDM, higher parity, and Asian ethnicity. Therefore, identification and modification of modifiable risk factors is already emphasized for women of child-bearing age to prevent the onset of GDM. Lately, Cho et al. [2] first reported the relationship between gestational stage-specific weight gain and adverse outcomes in Korean women in a large cohort. The study suggested that the rate of gestational weight gain (RGWG) was significantly associated with a high risk of developing GDM at early pregnancy, and early

RGWG in normal pre-pregnancy BMI group was significantly associated with GDM.

We attempted to investigate the characteristic of the adipokines and insulin resistance according to maternal risk factors among pregnant women with GDM based on single, tertiary hospital patients. With the increase in GDM, pregnant women with GDM need to be classified and stratified according to clinical characteristics in the clinical setting because the management and the outcome may differ. Recently, Cho et al. [3] investigated the trends of incidence of GDM, insulin treatment for GDM, and the changes in its risk factors in Koreans based on a nation-wide population.

The incidence of GDM increased from 3.86% in 2007 to 11.83% in 2010, and this increase was continuously observed even after adjustment for age. However, the number of GDM cases that required insulin treatment decreased significantly from 13.87% in 2007 to 5.94% in 2010. The proportion of pregnancy at an older maternal age and multiparity were increased, but the proportion of multiple pregnancies significantly decreased during the study period. The incidence of GDM increased in all age groups, with the highest incidence in the 30 to 34 age group. There were no changes in BMI (22.16 ± 0.12 kg/m² in 2010). There is limited information about the factors that contribute to the changes in these trends. We, as well as other researchers, feel the need to conduct well-designed studies on the criteria or definition including gestational weight

Corresponding author: Ji Hyun Lee  <https://orcid.org/0000-0002-5671-0875>
Department of Internal Medicine, Catholic University of Daegu School of Medicine,
33 Duryugongwon-ro 17-gil, Nam-gu, Daegu 42472, Korea
E-mail: jhlee9@cu.ac.kr

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gain, RGWG, and GDM and the mechanism of contributors to fully understand pregnant women with GDM for the Korean population. Thank you all for showing interest in this study and for your thoughtful comments.

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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