Letter to the Editor

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Methodological issues on the clinical importance of the 75-g glucose tolerance test (GTT) in the prediction of large for gestational age (LGA) fetuses in non-diabetic pregnancies

To the Editor,

We read with great interest the study by Fadiloglu et al. The aim of the study was to examine the clinical importance of the 75-g glucose tolerance test (GTT) in the prediction of large for gestational age (LGA) fetuses in non-diabetic pregnancies [1].

They retrospectively assessed 75-g GTT screening results of 356 pregnancies without prompt diagnosis of gestational diabetes mellitus (GDM). Receiver operating characteristic (ROC) curves were applied to calculate the prediction of LGA fetuses. Their results showed that the area under the curve (AUC) was 0.66 and 0.61 for maternal age and OGTT 2nd-h, respectively. According to the ROC curve, a maternal age of 32.5 years or above predicted LGA fetuses with a sensitivity of 64% and a specificity of 0.67%. In addition, an OGTT 2nd-h result of 108.5 or above predicted LGA fetuses with a sensitivity of 51% and a specificity of 70% [1].

However, the AUC is not an appropriate approach for prediction because it is usually used to evaluate the accuracy of a diagnostic model. Moreover, AUC, even if statistically significant, does not guarantee prediction. The reason is that the amount of AUC for clinical purposes is much more important than significant level [2–5]. In this case, AUCs equal to 0.66 and 0.61 are not clinically important. Moreover, for developing and validating a prediction model, we need data from two different cohorts or at least from one cohort divided into two. Developing a prediction model without validation and also assessing interaction between potential predictors can also produce misleading results [6].

The authors concluded that LGA newborns are associated with higher maternal age and higher results on 75-g 2nd-h GTT testing when GDM is excluded. First, for the prediction of an outcome for clinical purposes, an appropriate methodology should be considered. Moreover, correct interpretation of results is crucial. Furthermore, association even if statistically significant does not guarantee prediction [3, 4]. The main purpose for prediction of an outcome in clinical studies is to provide a model, index, or score applicable to an individual (patient). All the above-mentioned methodology and statistical issues should be considered in prediction studies for clinical purposes. Otherwise, misleading results cannot be avoided.

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