The association of maternal serum markers and birth weight in twin pregnancy

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Introduction
The purpose of this study was to investigate the association of maternal serum markers and birth weight (BW) discrimination in twin pregnancy.

Method
We retrospectively reviewed medical records of 524 twin pregnant women between January 2005 and September 2017. Birth weight were classified as group I (BW < 10th percentile), group II (BW 10-50th percentile), and group III (BW > 50th percentile; reference group). The values of PAPP-A, MSAFP, ß-hCG, UE3, and inhibin A were calculated as multiples of the median (MoM). We analyzed the association of maternal serum markers and BW in twin pregnancy by using multiple logistic regression analysis.

Results
Among the 1,048 neonatal babies who included our inclusion criteria, group I (BW < 10th percentile) occurred in 16.8 % (n=176), group II (BW 10-50th percentile) in 52.0 % (n=545), and group III (BW > 50th percentile; reference group) in 31.2 % (n=327). In this study, there was significant MoM values on the pregnancy outcomes of either PAPP-A and inhibin A with the low degree of birth weight (p <0.05 for both) and the substantial difference was shown in UE3. However, hCG and MSAFP and did not differ significantly among three groups. Among the maternal serum markers, Inhibin A value was significantly higher in women with group I compared to the other groups (p < 0.001) by generalized linear mixed model (hierarchical modeling considering cluster effects for twins).

Conclusion
The maternal serum markers including PAPP-A, UE3, and inhibin A could be potential screening markers of prediction of birth weight in twin pregnancy.