P1-IS-75  Third trimester umbilical artery Doppler velocimetry in twins to predict adverse perinatal outcome based on systolic/diastolic ratio difference

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OBJECTIVE: To investigate the effectiveness of systolic/diastolic (S/D) ratio difference of umbilical artery for prediction of adverse perinatal outcome in twin pregnancy.

METHODS: This study is a retrospective analysis of maternal and perinatal data from 286 twin pregnancies that underwent umbilical artery Doppler ultrasonography at third trimester and cesarean section at Yonsei University Medical Center from 1995 to 2005. Patients with twin-to-twin transfusion syndrome, fetal anomaly, single fetal demise or absent and/or reverse end diastolic velocity at examination were excluded from the study. The S/D ratio was measured for each twin and the difference was calculated (higher value of S/D ratio minus lower value of S/D ratio, divided by higher value of S/D ratio).

RESULTS: The S/D ratio difference had significant correlation with the incidence of adverse perinatal outcomes. The incidence of adverse perinatal outcomes (intrauterine growth restriction, cesarean delivery because of fetal distress, 5-minute Apgar score <7, admission to neonatal intensive care unit, and perinatal mortality) was 79.4% when the S/D ratio difference was greater than 30%. When the S/D ratio difference ranged from 20% to 29%, 10% to 19%, and ≤9%, the incidence of adverse perinatal outcomes were 68.4%, 52.3%, and 44.4%, respectively. When the cutoff point for S/D ratio difference was ≤15%, after making adjustments for maternal age, parity, gestational age at delivery and chorionicity, a logistic regression analysis demonstrated that S/D ratio difference was a predictor of adverse perinatal outcome (adjusted odds ratio=2.40, 95% CI 1.59-3.69, p<0.001).

CONCLUSIONS: This study suggests that assessment of systolic/diastolic ratio difference of umbilical artery during third trimester in twin pregnancy can be a useful method for predicting adverse perinatal outcomes.

P1-IS-76  The prediction of adverse pregnancy outcomes using the serum inhibin-A level in mid-trimester of gestation

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Objectives: To investigate the association between abnormal inhibin-A level in QUAD test during the mid-trimester of gestation and adverse pregnancy outcomes.

Methods: Women who delivered their babies at our institute after QUAD test in mid-trimester of gestation (N=131) were enrolled in our study. We analyzed inhibin-A levels (MoM) alone or in combination other serum marker of the QUAD test to investigate any association between the markers and the adverse pregnancy outcomes. The incidence of preterm labor ≤32 wks, birth weight ≤10th percentile, hypertensive disorder, fetal loss ≤24 weeks, and fetal demise afterward were compared between the baby from high inhibin-A levels (2.0 MoM) in QUAD test and baby from normal inhibin-A levels (below 2.0 MoM). And we also investigated the associations between the marker in combination among QUAD test markers and adverse pregnancy outcomes. We calculated using \( \chi^2 \) or one sided Fisher exact test. And the odds ratios with 95% confidence interval were obtained.

Results: We analyzed data from 131 pregnant women who were 32.2±4.2 years old at the blood sampling to find that the pregnant women with the elevated inhibin A levels were frequently found in the adverse pregnancy outcomes such as preterm labor ≤32 wks (OR: 9.6, 95% CI: 1.34-77.3, p-value = 0.05) and hypertensive disorder (OR: 11.3, 95% CI: 1.5-81.2, p-value = 0.04). Although the strong relationship between inhibin-A and adverse pregnancy outcomes were found, the odds ratios of each marker or combinations of markers except inhibin-A in adverse pregnancy outcomes were low.

Conclusions: Our results report that the only inhibin-A may be more useful in predicting adverse obstetric outcomes. But this result needs to be revalidated in some more numbered and controlled studies.