P3-IS-40  Amniotic fluid leptin and vascular endothelial growth factor levels at the second trimester: a marker for preterm delivery

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Objectives: The etiology of preterm delivery is multifactorial with impaired angiogenesis of developing placenta in early pregnancy. Vascular endothelial growth factor (VEGF) is a key regulator of normal angiogenesis. Leptin is a potential fetal growth factor and it stimulates other angiogenic factors including VEGF. The objective of this study is to investigate whether the amniotic fluid leptin and VEGF levels at the second trimester are a marker for preterm delivery. Study Design: This study was conducted on the second trimester amniotic fluid samples obtained and stored from women undergoing genetic amniocentesis at 16-20 weeks of gestation. Leptin and VEGF levels were measured by enzyme-linked immunosorbent assay in samples from every case known to result in delivery from < 37 weeks' gestation and administration of their neonate in neonatal intensive care unit (NICU) (n = 29) and 20 matched controls from women term delivered at ≥ 37 weeks' gestation.

Results: There were no significant differences between preterm delivery and control groups with respect to the mother's age, the gestational age of the fetus at amniocentesis, body mass index, and gravidity. Amniotic fluid VEGF levels in preterm group (38.75 ± 5.79 pg/ml) were found to be significantly higher than those in the control group (23.49 ± 3.38 pg/ml) (p < 0.05). Amniotic fluid leptin levels were also higher in the preterm group (6.64 ± 0.68 ng/ml) compared to the control group (5.35 ± 0.59 ng/ml), but there were no significant differences between the two groups. Amniotic fluid VEGF and leptin levels were the highest in women with placenta previa and they were the lowest in women with intrauterine growth retardation and pregnancy induced hypertension, respectively.

Conclusions: This result shows that amniotic fluid VEGF levels in the second trimester are more effective than leptin levels in the prediction of preterm. Key Words: preterm delivery, second trimester amniotic fluid, VEGF, leptin

P3-IS-41  The comparison among three ultrasonic equipments in relation to the confidence of estimated fetal weight built-in calculating programs of ultrasonography

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Purpose: There are some difference with birth weight and estimated fetal weight measured by ultrasonic equipment. It was difficult to compare with the accuracy of many ultrasonic types of equipment at same time. We measured fetal weight to three ultrasonic equipments with same purchase time and similar price and the accuracy along each equipments was evaluated to the real birth weight after delivery.

Materials and Methods: A singleton between 28 weeks and 42 weeks of gestation with normal amniotic fluid volume (AFI 5-20) were included in our study. There were no fetal anomalies, twin pregnancy, and intrauterine fetal death. Each 30 cases of fetuses were measured fetal weight with three kinds of ultrasonic equipment, which were HDI 3000 (Advanced Laboratory Technology, Phillips, USA; as A), SSD-5000 (Alokia Ltd., Japan.; as B), and Accuvix (Medison Ltd., Korea.; as C). One sonographer, there being a clinical experience more than 2 years and licensed ARDMS qualifications, measured the fetal weight within one week of delivery and compared the difference between estimated fetal weight and birth weight using each ultrasonic equipment.

Results: T from the day of measurement of fetal weight to the day of delivery be average weight difference showed 253.5 grams in A, 174.6 grams in B, and 277.9 grams in C. The B showed the significant difference of measurement error between other two (p = 0.005). The accuracy rate of 5%, 10% and 20% weight difference were 40%, 20% and 40% in A, 70%, 23.3% and 6.7% in B and 40%, 33.3% and 20% in C. The discrepancy between the estimated and actual fetal weights was depended on the times of the measured and delivered day.

Conclusion: To understand the characteristics of each ultrasonic equipments minimize the measurement errors and raise the reliability of measurement values in relation to estimated fetal weight during gestation.

P3-IS-42  Hemogeen and MGST1 expression in the preeclamptic placenta

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Objective: Preeclampsia has been associated with a placental hypoxic condition. Hemogeen is expressed in hematopoietic cells and MGST1 is a membrane–bound enzyme with glutathione transferase and glutathione peroxide activity. We therefore hypothesized that the expression of Hemogeen and MGST1 are altered in placentas from preeclampsia, which may be the result of placental hypoxic condition.

Methods: Placenta tissues were collected immediately after delivery from 5 preeclamptic patients and 5 normal pregnant women. Total RNAs were extracted and hybridized for a cDNA microarray. Reverse transcriptase–polymerase chain reaction was used to confirm the results of cDNA microarray.

Results: The expression of Hemogeen in preeclamptic placenta were increased by 3.5 times and the expression of MGST1 in preeclamptic placenta were decreased by 4.2 times compared with normal placenta using microarray. These were confirmed by RT–PCR, the expression level of Hemogeen was 4.53 times higher and the expression level of MGST1 was 1.52 times lower in preeclamptic placenta than in normal placentas.

Conclusion: The increased expression of Hemogeen and decreased expression MGST1 in preeclamptic placenta is related to placental hypoxic condition and oxidative damage.