ISP-25-9  The progression of anemia during pregnancy correlates with the mothers' insufficient weight gain during pregnancy

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[Objective] The average birthweight has been decreasing in Japan. One of the causes is speculated as the mother's insufficient weight gain during pregnancy. In this study, we made a hypothesis that the less calorie intake during pregnancy results in the less intake of iron and further the anemia during pregnancy. [Methods] Data were collected from 70 pregnant women among 180 women who delivered in May, 2015 in our hospital. The inclusion criteria were singleton, normal pregnancy course, no complications of the mother, and term delivery. We analyzed the correlation between the weight gain till the second trimester and the decrease of hemoglobin concentration (Hb) in the same period. We didn't apply this study to the ethics committee because this is a retrospective study of the medical records. [Results] The maternal weight before the pregnancy and at the second trimester (average 24 weeks) was 51.0 ± 6.2 kg (average ± 1.0 SD) and 56.7 ± 5.9 kg, respectively. The Hb at the first trimester (average 9 weeks) and the second trimester (average 24 weeks) was 124 ± 10.0 g/dl and 11.1 ± 0.8 g/dl. The weak negative correlation was observed between the weight gain per week and the decrease of Hb per week; coefficient of correlation was -0.248 (p=0.04). [Conclusion] In this study, we found the possibility that the more the pregnant woman's weight had increased, the lesser her anemia progressed.

ISP-25-10  Distribution of core temperature under maternal abdominal wall during pregnancy

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[Objective] Gene expression of fetal heart in development is known to be related with the surrounding mechanobiological stimulations, such as temperature, shear stress. During pregnancy fetal temperature is depend on maternal core temperature under maternal abdominal wall. But there are no studies about the core temperature. Our aim is to study the temperature during pregnancy. [Methods] Under the informed consent, 22 pregnant women (11w to 38w) participated in this study. Noninvasive core temperature sensor (3M SpotOn system Model 370) was set on the low maternal abdominal wall. Core temperatures under maternal abdominal skin were measured. [Results] Core temperature range was from 33.7°C to 36.8°C during pregnancy. Until about 25 weeks the temperatures were high (around 36.5°C). About 30-35 weeks those were low (about 35°C). And after 37 weeks gestation, the temperatures were high again (around 36.5°C). [Conclusion] We found out that maternal abdominal core temperature change was more than 1°C during pregnancy. 1°C change is enough for the change of gene expression of Ca channel (TRPC1) in fetal heart. We suggested that core temperature change will have important mechanobiological influence on developmental heart.

ISP-26-1  Normal ranges of plasma concentrations of pregnancy-associated microRNAs during pregnancy

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[Objective] The aim of this study is to investigate the normal ranges of plasma concentrations of pregnancy-associated miRNAs (miRNAs) change during pregnancy. [Methods] We collected maternal blood samples from 177 uncomplicated pregnant women during pregnancy and after delivery. All samples were obtained after receiving written informed consent, and the study protocol was approved by the Institutional Review Board for Ethical, Legal, and Social Issues of Nagasaki University. MiRNAs were measured by real-time quantitative PCR and U6 snRNA was used for internal control miRNA. [Results] Plasma concentrations of placenta specific miRNAs increased during pregnancy and decreased after delivery significantly (p<0.05). Plasma concentrations of fetus-specific miRNAs did not change significantly during pregnancy. The mean values and 95% confidence interval (95% CI) about the logarithm of the plasma concentrations of placenta specific miRNAs were represented as a linear model. The mean value (95% CI) of log miR-515-3p at 12, 23, 30, and 36 weeks of gestation were -2.36 (-3.79 to -1.93), -2.19 (-3.60 to -0.78), -2.08 (-3.49 to -0.67) and -1.98 (-3.41 to -0.57), respectively. [Conclusion] Plasma concentrations of placenta-specific miRNAs and fetus-specific miRNAs showed a different transition. We have showed the normal range for the circulating levels of pregnancy-associated miRNAs during pregnancy.