

451 Lipid metabolism in IUGR neonate. S.Akada, H.Iioka, I.Moriyama, H.Hisanaga, K.Morimoto, M.Ichijo, Dept. Obst. and Gynec., Nara Med. Univ., Nara.

The lipid concentration in fetal (umbilical cord) blood is regarded to be generally lower compared to that in adults. However, little is known of the lipid metabolism during the fetal stage especially in IUGR baby. The metabolism of lipids including apolipoproteins in pregnant woman, full-term normal neonates and IUGR neonates was characterized in this study.

In IUGR neonates, umbilical blood concentration of lipid was low and the concentration of total lipid, phospholipids and triglycerides were 0.74, 0.74 and 0.71 times as much as those in normal neonates, respectively.

In IUGR neonates, all the values were still lower, and total cholesterol, ester cholesterol, free cholesterol, HDL-cholesterol and LDL-cholesterol were 0.62, 0.61, 0.64, 0.62 and 0.69 times, respectively, as much as those in normal neonates.

In IUGR neonates, all the values were further decreased, and A-1, A-2, B, C-2, C-3 and E were 0.68, 0.88, 0.91, 0.64, 0.38 and 0.71 times, respectively, as much as those in normal adults.

452 Study on tissue inhibitor of metalloproteinases (TIMP) during pregnancy and at delivery. Y.Soeda, T.Arai, R.Izumi, S.Kodama*, Dept. obst. and Gynec., Toyama Med. and Pharmaceut. Univ., Toyama, *Fuji Chemical Industries Ltd., Toyama.

Metabolism of collagen mainly depends on activity of collagenase and its inhibitor, TIMP. To investigate the role of TIMP at perinatal periods, its concentration was determined in various body fluids of pregnant women and neonates by sandwich-EIA. The localization of TIMP was examined by immunohistochemical method. The following results were obtained.

1. There was no difference in serum levels of TIMP determined by sandwich-EIA, among three groups i.e. non-pregnant women (n=112), normal course of pregnancy (n=41), and PROM (n=9).

2. The level of TIMP in amniotic fluid at delivery (34-41w) was significantly ($p < 0.001$) higher than that of maternal serum and umbilical serum. It was not detected in neonatal urine.

3. TIMP was clearly localized in fetal membrane by immunohistochemical method.

Those results indicate that higher level of TIMP in amniotic fluid is originated from fetal membrane. The physiological role of TIMP still remains to be investigated.

453 Analysis of organic acids in urine, serum and amniotic fluid of pregnant women. H.Takabayashi, K.Yoshida, S.Kuwabara, I.Matsumoto*, K.Saiki*, Dept. Obst. and Gynec., Kanazawa Medical Univ., Ishikawa, *Med. Research. Inst.

In order to elucidate the physiological significance of organic acids of pregnant women biochemically, organic acids in urine, serum and amniotic fluid from 15 pregnant women who underwent cesarean section were analysed by means of GC/MS. In this study we focused on 3 kinds of organic acid, namely lactate, pyruvate, 3-hydroxybutyrate which are suspected to be good markers of metabolic state of pregnant women. So we evaluated each correlation between lactate-pyruvate (L/P ratio), and that of the levels of 3-hydroxybutyrate in urine, serum and amniotic fluid, respectively. About 50 kinds of organic acid were detected in urine, serum and amniotic fluid, respectively. Both L/P ratio and the level of 3-hydroxybutyrate on the cesarean patients were 2-3 times higher than that of the non-cesarean patients. Concerning L/P ratio, coefficient of correlation of amniotic fluid to serum, urine to serum and amniotic fluid to urine were 0.47, 0.83, 0.46 and that of 3-hydroxybutyrate, 0.67, 0.77, 0.65, respectively. Our results suggested that anaerobic glycolysis might be promoted in the case of cesarean section compared to non-cesarean case and that each organic acid in urine, serum and amniotic fluid have some correlation each other.