anism during fetal maturation. Materials and Methods: Wistar rats on day 10, 14, and 18 after conception were submitted for the following experiment. Nakane's enzyme-labeled antibody method were used to localize GSH-PO in the placentae, yolk sac, and other fetal tissues, and observed at both light and electron microscopic levels. The levels of lipoperoxides and GSH-PO in the serum, liver, and erythrocyte of the maternal rats were measured. Results: 1) The immunocytochemistry failed to localize GSH-PO in any fetal tissues except yolk sac and fetal livers, but the localization in the fetal livers could not be recognized clearly. The result may suggest that GSH-PO in the yolk sac plays an important role as the effective anti-lipoperoxidative agent in feti. 2) The level of lipoperoxides in the serum and liver of the pregnants rats, was lower than that of non pregnantts rats. Whereas, the level of GSH-PO increased gradually through out pregnancy. These rresults suggest that increase of GSH-PO may cause decrease of the lipoperoxides level of the liver and serum in pregnants rats.

194. Correlation of Lipid Levels in Maternal Blood and Neonate and the Effects of V.E.

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From about 50 women in normal labor, at least 3 hours after meal, the maternal and the umbilical cord blood was collected and total cholesterol, Triglyceride (T.G.), F.F.A., phospholipids (P.L.), H.D.L.-C., L.D.L., V.L.D.L., V.E. and the bilirubin levels in the neonates were compared. Further, the correlation of the lipid/V.E. levels and the body weights and jaundice of the neonates were investigated.

The obtained results were:

1) The levels of both these lipids and V.E. gradually increased with the progress of pregnancy, with their peaks at the 36th-38th weeks of pregnancy. But H.D.L.-C. showed peculiar pattern of increase.

2) Both the lipid and V.E. levels were remarkably lower in the umbilical cord blood than in the maternal blood.

Only the levels of L.D.L., V.L.D.L., and F.F.A. showed correlation between the maternal and the umbilical cord blood.

3) As to the correlation of the blood levels between V.E. and these lipids, there was some correlation observed between the V.E. levels and the levels of L.D.L. and V.L.D.L., both in the maternal and the umbilical cord blood.

4) The birth weights and the bilirubin levels of neonates had correlation with V.E. levels, but not with lipid levels.

195. Nutritional Problem of Minerals, Especially Zinc and Copper in Pregnant Women

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In Japan the food situation has been changing so much that there might be a problem in respect to nutrition of pregnant women. And there has been growing interest in the relation between trace elements and fetal development.

Therefore, we investigate daily dietary nutritional intake of pregnant women, and measured the concentrations of zinc and copper in maternal and cord blood at delivery. The following results were obtained.

1) Energy, protein, lipid, carbohydrate and vitamins (A, B_1, B_2, C, niacin) were sufficient in normal, anemic and toxemic pregnant women.

2) But, dietary intakes of iron and calcium were deficient.

3) Estimated dietary intakes of zinc and copper were about 27 mg/day, and 1.8 mg/day, respectively.

4) About half amount of dietary intake of zinc was derived from green tea.

5) There was a tendency of lower plasma zinc concentration in mothers who didn't drink green tea than mothers who drank green tea.

6) The plasma contents of zinc and copper in mothers giving birth to SFD babies were significantly lower than in mothers with AFD babies.

196. Theophylline Therapy for IUGR Pregnancy

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Previous reserch has shown reduced maternal-fetal nutrient transfer and poor placental blood flow in

actinomycin-D induced IUGR pregnant rats (AcD group), and recovered by theophylline injection (AcD + Th group).

Using pregnant rats microspheres was injected into abdominal aorta at the 18th day of pregnancy, and at days 18-20 administered twice a day with 2.5 mg of theophylline (Msp + Th group) or saline (Msp group).

At the 20th day the fetal weight was 3.21 g in Msp group and recovered to 3.66 g in Msp + Th group (normal 4.42 g, AcD group 3.91 g, AcD + Th group 4.41 g).

Compared with controls IUGR rats had significant reduction in placental blood flow (control 0.89 ml/min, AcD group 0.63 ml/min, Msp group 0.38 ml/min) and had recovery by theophylline administration (AcD + Th group 0.99 ml/min, Msp + Th group 0.53 ml/min).

Cardiac output was 60.68 ml/min in Msp group and increased to 67.46 ml/min in Msp + Th group.

Aminophylline (250 mg, 10 minutes) was infused venously to 6 pregnant women and 7 women at delivery.

Fetal heart increased in rate and variability but maternal heart had no change.

Theophylline concentration at delivery were similar in maternal and umbilical vein.

These data suggested that theophylline is useful drug for IUGR pregnancy.

197. The Occurrence of Liver Damage during Pregnancy and its Influence Upon a Fetal Growth

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Liver damage was induced in the pregnant rabbits by chloroform administration, of which occurrence, we investigated histologically, biochemically, and by autopsy.

In the rabbits with liver damage a extirpated liver appeared yellowish gray and was softer in consistency. One glance was enough to show that it had been discolored by damage. Also the liver showed necrosis and fatty metamorphosis in the centrilobular area, and it involved the peripheral zone of lobuli. Then chloroform was administrated two times in volume, all pregnant rabbits were dead while all nonpregnant rabbits were alive. We concluded these findings suggested that liver damage could be possibly aggravated by pregnancy.

Also it was clarified that the fetus born to the rabbits with liver damage could be possibly growth-retarded because of the fetal weight and the placental weight being apparently small than control.

Evaluating the mechanism of the growth-retardation especially from the maternal side, in the rabbits with liver damage there is a tendency to elevate in the level of serum amino acids and total estriol while cortisol-binding globulin and serum free T4 levels tend to show lower values: we concluded liver damage had a bad influence upon endocrine system and metabolism of some organs, so that there would be possibly placental growth and function impaired.

198. Study of Factors which Affect Maternal Milk Ejection in Early Puerperium and Breast Feeding at a Month Post-partum

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Data from 518 deliveries in our hospital were reviewed to determine which factor influence maternal milk ejection in early puerperium and breast feeding at a month post-partum. Besides both the volume of maternal milk ejection during 6 days in early puerperium and the state of breast feeding at a month post-partum were checked, and the correlation between them were estimated.

1: There was a positive correlation between the volume of maternal milk ejection during 6 days in early puerperium and the state of breast feeding at a month post-partum.

2: C-section and the estriol derivative given before delivery suppressed maternal milk ejection in early puerperium. Toxicosis, massive hemorrhage at delivery, prolongation of labor, small number of suckling and oxytocin given at delivery had a tendency to suppress slightly maternal milk ejection in early puerperium, but they did not affect breast feeding at a