69 A study of prolactin secretion in the maternal circulation during parturition. K. Yamamoto, S. Katoh, T. Shirai and M. Kitao, Dept. Obst. and Gynec., Shimane Medical Univ., Shimane.

To investigate the mechanism of multiphasic prolactin (PRL) secretion during parturition in the maternal circulation, we measured the plasma PRL, DOPA, norepinephrine (NE), catecholamine metabolites (3,4-dihydroxyphenylacetic acid [DOPAC], 3,4-dihydroxyphenylethyleneglycol [DOPEG]) and prostaglandin $F_2\alpha$ ($PGF_2\alpha$) in 111 patients, before, during and after delivery, and in early puerperium.

The plasma concentrations of NE, $PGF_2\alpha$ were significantly elevated during labor. In contrast, plasma PRL levels were significantly decreased during labor and immediately after delivery. There was a statistically significant inverse relationship between PRL and NE ($r=-0.392$, $p<0.001$), and between PRL and $PGF_2\alpha$ ($r=-0.523$, $p<0.001$) during labor, but there were no statistical correlations among PRL, DOPA and DOPAC. There was also statistically inverse relationship between PRL levels and duration of labor.

In conclusion, these data suggest that the PRL release from maternal pituitary gland during labor is not controlled mainly by dopaminergic neurons and may be supressed by other mechanisms, such as the stress of labor and/or influence of $PGF_2\alpha$.

70 Analysis of prostaglandins in the urine of women in labor using high performance liquid chromatography(HPLC). S.Urakawa, K.Ashihara, Y.Horikoshi, K.Yasuda, F.Fujikami, S.Sawaragi, T.Nakajima and I.Sawaragi, Dept. of Obst. and Gynec., Kansai Med. Univ., Osaka

To study the metabolism of prostaglandins(PGs) during labor, PG-like substances in the urine of women in labor were analyzed with HPLC. PG-like substances in the urine were extracted by Jaffes' method or by the method using a octadecylsilicagel(ODS) column. The extract was purified with 50% ethanol solution and ethyl acetate, then derivertized with ADAM(9-anthryldiazomethane). The sample was cleaned up by a silicagel column, then analyzed by reverse phase HPLC system, which consists of Inertsil ODS-2,ϕ5μm, 4.6x150mm, 40°C and mobile phase (methanol 3: water 1), 1ml/min.

Six specific peaks in the urine were detected with retention time from 45 to 70min. The pattern of these peaks changed during labor, but there was no regularity in the changes. Substances for the each peak were not defined,but the total amount of these substances was 718 ± 272μg,culuculated from the area of peaks formed by PGF2α and PGE2 of known quantity. These substances was seemed to be more discharged in the delivery with short progress.

These results suggested that some combination of PGs promote the labor.

71 Changes of 13,14-dihydro-15-keto-prostaglandin $F_2\alpha$ and oxytocin levels in amniotic fluid at late pregnancy and during labor. S.Moriyama, K.Hirato, H.Saito, M.Funatsu, H.Chiba, T.Nakayama, T.Yanaihara, Dept. Obst. and Gynec., Showa Univ. Sch. Med., Tokyo.

To study the role of prostaglandin (PG) and oxytocin (OT) on the mechanism of parturition, levels of 13,14-dihydro-15-keto-prostaglandin $F_2\alpha$ (dhk-$PGF_2\alpha$) and OT in amniotic fluid and plasma during late pregnancy, labor, and puerperium, were measured by radioimmunoassay. Seven patients at term were selected for this study and labor was induced by amniotomy. Amniotic fluid and maternal peripheral blood were obtained simultaneously from each individual at A) the amniotomy before the onset of labor, B) the onset of labor, C) the second stage of labor, D) the delivery, and E) 2 hours postpartum.

No increase in both amniotic fluid and plasma dhk-$PGF_2\alpha$ levels was noticed when the levels were compared before and at the onset labor. However, the levels steadily elevated during labor and reached to the maximum levels at delivery. The levels of dhk-$PGF_2\alpha$ in amniotic fluid correlated well with that in the maternal plasma. No significant changes of OT levels in both amniotic fluid and maternal blood were observed during the study. There was no correlation between the levels of PG and OT.