

208 Ultrasonic assessment of fetal urine production in normal and complicated pregnancies. O.Okada, A.Akita, Y.Takusima, M.Sase, H.kato, Dept.Obst.and Gynec., Yamaguti Univ., Yamaguti.

Fetal renal function was evaluated in 53 normal pregnancies between 26 and 40 weeks of gestation and in 40 fetuses with complication. Hourly fetal urinary production rate (HFUPR), maximum bladder volume (MBV), periodicity of urination were evaluated with real-time ultrasound. In normal pregnancies, HFUPR, MBV and periodicity of urination were increased from 26 weeks to 39 weeks of gestation, and then decreased. Of 15 growth retarded fetuses 7 had HFUPR values below the Mean-1SD of normal curve, 10 had MBV values below the Mean-1SD. Of 7 patients with oligohydramnios, 5 had HFUPR values below the Mean-1SD. Of 14 fetuses with hydronephrosis, 8 had HFUPR values below the Mean-1SD. Furosemide administration into the mother significantly increased HFUPR in 3 of 4 fetuses with hydronephrosis and low HFUPR. In anencephalic fetus, periodicity of urination couldn't be observed. The holoprosencephalic fetuses and hydrocephalic fetus had periodic micturitions. It is indicated that real-time ultrasound examination is useful to evaluate the fetal renal function.

209 An immunohistochemical study on distribution of surfactant apoprotein in hypoplastic lung of nonimmunologic hydrops fetalis and other diseases. N.Toki, M.Minamitani*, H.Maeda*, H.Nakano*, First Dept.of Pathology, and *Dept.of Gynec.and Obst., Faculty of Medicine, Kyushu University, Fukuoka.

Maturity of lung in nonimmunologic hydrops fetalis (NIHF) was immunohistochemically studied using three antibodies: AP and PE10 (antibodies to surfactant protein A) and HS-2 (antibody to surfactant protein B). In the neonatal 685 cases autopsied in Kyushu University Hospital, 43 cases of NIHF group, 59 cases of control group, and 22 cases of oligohydramnios sequence with hypoplastic lung were examined. As definition of hypoplastic lung, we used lung weight/ body weight ratio of less than 0.012. In NIHF group, 26 cases showed hypoplastic lung. Morphometrically, NIHF group showed smaller radial alveolar count than control group. In NIHF group, AP and PE10 showed statistically weaker staining patterns in comparison with those of control group after 31 gestational weeks. These findings suggest that in the lung of NIHF, there is possible delay in functional maturation of alveolar type II cells. But HS-2 had not weaker staining patterns even after 31 gestational weeks in NIHF group. In oligohydramnios sequence, AP and PE10 showed weaker staining patterns as compared with NIHF group.

210 Indication of extracorporeal membrane oxygenation(ECMO) for severe neonatal asphyxia with persistent pulmonary hypertention(PPHN);hypocarbica and neurological outcome. H.Asano, S.Ibara, T.Ikenoue, Perinatal Medical Center, Kagoshima Municipal Hosp., Kagoshima.

To determine the effect of hyperventilation induced alkalosis therapy(HAT) on twenty-four severe asphyxic newborns with PPHN were assessed retrospectively. Fifteen cases had normal development, nine cases had neurological impairment. Adverse outcome was related significantly to the duration of hypocarbica, such that the infants without and with abnormalities spent 79.5 ± 197.3 minutes and 412.2 ± 463.2 minutes, respectively ($p < 0.05$), and all cases of neurological impaired group had ischemic lesion such as diffuse low density area in brain CT scan. Our results show that ECMO could be considered to the newborns with PPHN who required prolonged HAT to keep their cerebral circulation.