16) Placental Blood Flow in Pregnant SHRSP. Isao Fuchi*, Kiichiro Noda*, Yoshiharu Matsubara**, Kazuhiro Noguchi**, Kazuo Ueda* and Toshiaki Sano**
*Department of Obstetrics and Gynecology, Kinki University School of Medicine, Osaka, Japan. **Department of Applied Chemistry, Kinki University School of Science and Technology, Osaka, Japan.

Purpose: One of the important problems about perinatal medicine today is to clarify causative factors of IUGR (intrauterine growth retardation) and resulting SFD (small for dates infants) and prevent their occurrence. If causative factors of IUGR and resulting SFD are to be clarified and research work to prevent their occurrence is to be promoted, it is absolutely necessary to have model animals. We selected SHRSP, a stroke-prone SHR species, out of SHR (spontaneously hypertensive rats), and succeeded in inducing SFD at a high rate by feeding them with NaCl, beginning from 11th day of pregnancy. In the present study, we estimated the volume of placental blood flow in order to make thorough investigations of causative factors of IUGR.

Material and Methods: SHRSP were used as experimental animals together with Wistar Kyoto (abbreviated WKY) as control. Salt-feeding rats were given 1.5% salt water from 11th day of pregnancy. Every rat of those three groups was in 15th to 21st day of pregnancy at the start of experiment. A thin polyethylene catheter was inserted through the right carotid artery under ether anesthesia, and it was gradually advanced forward until it reached the left ventricle. The other end of the catheter was subcutaneously passed and fixed on the back firmly so that it might not fall off. Tracer microspheres used in the experiment were those manufactured by Minnesota Mining & Manufacturing Co., carrying ^{51}Cr and ^{125}I . And then radioactivity of each organ was measured with Autogamma Scintillation Counter (made by Searle).

Result: As the result, the ratio of placental blood flow to uterine blood flow and that of placental blood flow to renal blood flow increased gradually with the progress of pregnancy. On any day after the 16th day of pregnancy, these values were highest in WKY, followed by SHRSP and then by salt feeding SHRSP. These fact suggest that one of the etiologies of SFD development is a decrease of the placental blood flow.