5) Salt Feeding in Pregnant SHRSP.

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The present study was designed to investigate the diseases associated with hypertension in pregnant rats. The diseases were similar to the severe toxemia of pregnancy in human beings, led to IUGR (intra uterine growth retardation) of the fetus, and gave rise to the delivery of SFD (small for dates) infants.

Methods SHRSP were used as experimental animals, while Wistar Kyoto rats (abbreviated WKY hereinafter) were used as control animals. They were maintained in an air-conditioned room with room temperature of $22\pm 2^{\circ}\text{C}$ and humidity of 50-70%, and given breeding food with tap water. Blood pressure was measured by the tail pulse pickup technique under non-anesthesia.

Results 1) Changes in blood pressure: Control animals did not show any appreciable change in blood pressure during pregnancy, whereas SHRSP began to show a fall of blood pressure on day 15 of pregnancy, if ever they got pregnant the fall suddenly becoming steeper on day 18 of pregnancy. On the other hand, SHRSP given 1% NaCl showed no changes until day 20 but began to have a fall on day 21. Those given 1.5% NaCl showed a moderate rising tendency until day 15, followed by a gradual decrease. Feeding with salt seemed to cause a gradual increase in blood pressure as are the case with human beings.

2) Growth of fetuses: Fetuses of WKY remained in the womb for 21 days, those of SHRSP for 22 days, and those of SHRSP fed with 1-1.5% salt for a little longer time of 22-23 days. Fetal weight on the first day of life was $5.312\pm 0.494\text{g}$ for males and $5.0129\pm 0.470\text{g}$ for females of SHRSP which were significantly different from $6.277\pm 0.496\text{g}$ for males and $5.819\pm 0.602\text{g}$ for females of WKY. SFD calculated from control animals was 5.5g or less for males and 4.9g or less for females, indicating that the incidence of SFD in SHRSP amounted to 68.5%. SHRSP fed with 1% NaCl showed no difference from unloaded SHRSP in fetal body weight, while 1.5% NaCl feeding resulted in a lowered body weight of $4.971\pm 0.237\text{g}$ for males, meaning that the incidence of SFD was as high as 90%. 2% NaCl feeding resulted in premature still birth or death within the dam's body by days 15-18, after which the dams died of dehydration and cramp.

Summary 1) Feeding 1.5% salt to pregnant SHRSP led to IUGR of the fetus. The incidence of SFD became 50%. 2) In view of the above-mentioned results, pregnant SHRSP can be regarded as the model animal of SFD.