5) Studies on cardiovascular responses to pressor and hypotensive agents in conscious SHRSP at several ages. Seiji Hara, Mitsuo Matsumura and Motohiko Ueda. Shionogi Research Laboratories, Shionogi & Co., Ltd., Fukushima-ku, Osaka 553.

Increased or decreased vascular reactivities to endogenous vasoconstrictor and vasodilator in SHR and SHRSP have been reported by many investigators. In the present study, the effects of several endogenous pressor and hypotensive agents on blood pressure and heart rate in conscious and unrestrained male SHRSP in several ages (4, 5, 7 and 9 weeks old) were compared with those responses in WKY.

Pressor responses to noradrenaline (NA: 0.1-1 $\mu\text{g/kg}$, i.v.) were enhanced in 7 and 9 weeks old SHRSP compared with those in WKY in same ages, but pressor responses to angiotensin II (Ang II: 0.01-0.1 $\mu\text{g/kg}$, i.v.) were not different from those in age-matched WKY. The reflex bradycardia following pressor responses to NA and Ang II were markedly attenuated in SHRSP at 7 and 9 weeks old. It is noteworthy that significant attenuation of bradycardiac responses to NA was already observed at prehypertensive stages (4-5 weeks) of SHRSP.

Hypotensive responses to acetylcholine (ACh: 0.1-1 $\mu\text{g/kg}$, i.v.) were enhanced in 4, 7 and 9 weeks old SHRSP. However, hypotensive responses to adenosine (ADS: 30-300 $\mu\text{g/kg}$, i.v.) were attenuated in 4, 7 and 9 weeks old SHRSP. Transient negative chronotropic effect of ADS was also attenuated in 7 and 9 weeks old SHRSP.

Mechanisms underlying the attenuation of reflex bradycardia, the enhancement of pressor responses observed in the administration of NA and the attenuation of hypotensive responses to ADS may contribute to the progress or the maintenance of hypertension in SHRSP. Further studies are needed for elucidation of these mechanisms.