27) Determination of Aortic Medial Tissue Glycoprotein(GP) in Stroke-Prone Hypertensive Rats. Chikao Arai, Yoshihiro Kashiwakura*, Mitsuyo Saito, Kokichi Takeuchi, Takeshi Kawasaki, Motoharu Hasegawa**, Hiroyoshi Ito, Kozo Okamoto***. *Department of Cardiology, Urawa City Hospital, Urawa City 336, **Central Clinical Laboratory, Faculty of Medicine, Toho University, Tokyo 143, ***Department of Pathology, Kinki University School of Medicine, Osaka-fu 589.

The purpose of this study is to determine the glycoprotein(GP) content in thoracic aorta of stroke-prone spontaneously hypertensive rats(SHRSP) and Wistar-Kyoto rats(WKY) and to define the influence of hypertension on GP content and histo-pathological findings. The thoracic aortae were obtained from 150 subjects(SHRSP 101, WKY 49) aged from 100 days to 600 days. The GP content in media was measured by the microspectrophotometric procedure(MSP method), on the basis of the fact that the maximum extinction of the GP, stained by PAS stain is at 565nm. The materials were embedded in paraffin and sectioned with JB-4A type automicrotome to the thickness of 4 μ . The content of GP was determined by scanning method using the auto-counting computed system.

Results: In WKY groups, the mean values of GP content in each age were 33.6%E in 0 to 99 days(under 100 days), 42.7%E in 100 to 199 days(100 days), 38.6%E in 200 to 299 days(200 days), 39.2%E in 300 to 399 days(300 days) and 36.4%E in 400 to 499 days(400 days) respectively. In under 100 days, the GP content was lower than the other age groups. In over 100 days of age, the GP content was almost constant level and distributed at the range from 30%E to 50%E. In SHRSP groups the GP contents were 38.4%E under 100 days, 53.6%E in 200 days, 57.4%E in 300 days, 54.1%E in 400 days and 55.5%E in 600 days respectively. The gradual increase of GP content in SHRSP with aging from under 100 days to 300 days was observed. In over 300 days groups, no apparent increase was shown, the GP content of SHRSP was higher than that of WKY. The difference between SHRSP and WKY in GP content was statistically apparent in all ages over 300 days. Upon observation by microscope, in WKY groups, the GP was stained around the elastic network and basic construction was maintained in all ages. In SHRSP group, no remarkable morphogenic changes were observed in under 100 days without increase of GP content and wall thickness. In over 200 days, the area stained strongly and poorly coexisted and destruction of laminae elasticae were observed. It is considered that hypertensive state influences the connective tissue and cause the increase of GP content. The MSP method proved to be useful for the quantitative estimation of histo-chemical changes in aorta.