42) Determination of Aortic Medial Tissue Elastin and Collagen in Stroke-Prone Spontaneously Hypertensive Rats. Motoharu Hasegawa*, Hiroyuki Ito and Kozo Okamoto**. *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 medial elastin and collagen content in injured aorta of stroke-prone spontaneously hypertensive rats (SHRSP) developed by Okamoto and others as compared with normotensive contrast wistar-kyoto rats (WKY). The thoracic aortae from 287 subjects aged from 36 to 622 days were obtained (44 WKY and 243 SHRSP). The elastin and collagen, which had been taken from the thoracic aortae, were measured using the microspectrophotometric procedure (MSP method). This method is selected because it is based on the fact that the maximum extinction of elastin, stained using Weigert stain, is 590 nm and collagen, stained using Van Gieson stain in 563 nm respectively.

Results: The elastin content in WKY group was 38 to 40 V/V% and decreased slightly with aging. In the SHRSP group, the elastin content was 40 V/V% or more before the age of 100 days, but decreased markedly after 100 days. At ages of over 200 days, the elastin content was distributed over a range of 20 to 30 V/V%. After 200 days of age, the elastin decreased was from 60 to 68% in comparison with WKY group. The apoplexy group of SHRSP was also decreased about 78% in elastin content as compared with non-apoplexy group of SHRSP at ages from 150 to 350 days. The collagen content in WKY group was 30 to 45%E at ages from 50 to 250 days and decreased slightly with aging at ages of 250 days. In the SHRSP group, the collagen content was 40%E or more before the age of 100 days and decreased straightly with aging from 50 to 350 days. There was another group in SHRSP, which was decreased from 42 to 30%E with ages from 300 to 600 days in collagen content. So the progress of collagen content with aging in SHRSP group was surely different from in WKY group. Moreover the collagen content in apoplexy group of SHRSP was decreased about 85% as compared with non-apoplexy group at ages from 150 to 350 days. The changes of elastin content was paralleled to collagen content (correlation coefficient 0.614) with any ages in SHRSP. It was proved that the elastic network and collagenous meshwork were destructed with decreasing elastin and collagen of aortic media in SHRSP group by hypertensive factor.