22) The Effects of Nitroglycerin and Enalapril to Reperfusion Arrhythmias after Coronary Ligation in SHRs. 

Hideaki Yanagisawa, Department of Internal Medicine, Yokohama National Hospital, Kanagawa 245, Yukiei Hizashi, Takeshi Tsutsumi, Hirofumi Osada, Saburo Mashima, Department of Cardiology, Showa University Fujigaoka Hospital, Kanagawa 227, Tomoe Nakata, Sadayuki Sato, Department of Clinical Physiology, Kanagawa Prefectural College of Medical Technology, Yokohama 241.

We have already reported different appearing forms of reperfusion arrhythmias after coronary ligation in SHRs and WRs.

In this study, the effects of nitroglycerin and enalapril to reperfusion arrhythmias were examined in SHRs and WRs.

**<Method>** The coronary arteries of rats under an anesthetic by ether with artificial respiration were ligated by the Selye's method. They were monitored by limb lead ECGs. Five minutes later the ligation, coronary arteries were untied and reperfused. The reperfusion arrhythmias were compared between in SHRs and WRs, and then the effects of nitroglycerin of 0.5 mg (subcutaneous injection), enalapril of 0.4 mg were investigated.

**<Results>** Each durations per rats of the total continuous ventricular tachcardia (VT) were 1) 57.7, 2) 179.1, 3) 5.0, 4) 43.5 and 114.1 seconds in 1) WR without any drugs, 2) SHR without any drugs, 3) WR with nitroglycerin, 4) SHR with nitroglycerin and 5) SHR with enalapril of 0.4 mg respectively. Each durations per rats of the total continuous ventricular fibrillation (VF) were 1) 0.5, 2) 15.1, 3) 12.7, 4) 45.8 and 5) 2.7 seconds in 1) WR without any drugs, 2) SHR without any drugs, 3) WR with nitroglycerin, 4) SHR with nitroglycerin and 5) SHR with enalapril of 0.4 mg respectively. The effects of these drugs on blood pressure were 40 mmHg in SHR with enalapril, 15 mmHg in WR and 19 mmHg in SHR with nitroglycerin. Mean durations of continuous VT and VF per minutes after reperfusion in each WR without any drugs, SHR without any drugs, WR with nitroglycerin and SHR with nitroglycerin were shown in Figures 1, 2, 3, and 4. Each above and below parts in them were mean durations of continuous VT and VF.

**<Conclusion>** Frequency and durations of VT and VF in SHR were longer than those in WR. VT in SHR and WR with nitroglycerin were decreased. VF in SHR and WR with nitroglycerin were not decreased and appeared longer than that in SHR and WR without any drugs. The incidence of reperfusion arrhythmias were more frequent in SHR than WR. However, the mechanism of these observation is not clear farther investigation of need.