Effects of Telmisartan on Myocardial Remodeling in Wistar Rats Induced by High-Salt Diet

Geng-hui Shi¹, Qian-hui Shang¹, Qin Wu,¹ and Xiao-chun Wang¹

¹Institute of Clinical Medicine of Zunyi Medical College, Department of Cardiology, Affiliated Hospital of Zunyi Medical College, Zunyi Guizhou, China. Correspondence: Shang Qian-hui (qianhui-shang@hotmail.com)

Background: We sought to study the effects of telmisartan on myocardial remodeling in Wistar rats induced by high-salt diet and its mechanisms.

Methods: Wistar rats fed a high-salt diet (8% sodium chloride in drinking water) for 24 weeks were divided into high-salt hypertension (HSH; n = 12), high-salt normal blood pressure (HSN; n = 12) and high-salt with telmisartan treatment (n = 12; telmisartan 40 mg/kg/d) groups. Rats fed a normal-salt diet (0.5% sodium chloride in drinking water) were used as controls (n = 13). Myocardial morphology and superoxide dismutase (SOD) activity were determined. Tumor necrosis factor α (TNF-α) and high-sensitivity C-reactive protein (hsCRP) were analyzed by enzyme-linked immunosorbent assay. The expression of nuclear factor-κB p65 (NF-κB p65) was evaluated by Western blotting.

Results: Compared with the control group, left ventricular (LV) mass index, cardiomyocyte diameter, area of myocardial fibrosis, hsCRP, TNF-α, and NF-κB p65 levels were significantly increased (P < 0.05) in HSN and HSH groups, whereas LV SOD activity was decreased. The LV mass index, cardiomyocyte diameter, and area of myocardial fibrosis were negatively correlated with LV SOD activity (P < 0.05) and positively correlated with LV NF-κB p65 expression (P < 0.05). Telmisartan treatment partially reversed myocardial remodeling, increased SOD activity, and decreased NF-κB p65 and TNF-α levels in the left ventricle (P < 0.05).

Conclusions: Long-term high-salt diet induces myocardial remodeling in Wistar rats possibly through oxidative stress and inflammation. Telmisartan treatment may partially inhibit oxidative stress and inflammation to reduce myocardial remodeling induced by high-salt diet.

Sexual Function of Hypertensive Patients

Feng Zhao,¹ Rui-xin Ma,¹ Xin Lin,¹ Long-quan Yang,¹ Xiao-wei Zhang,¹ Xiu-li Li,¹ and Jing Yu¹

¹Cardiology Department, Second Hospital of Lanzhou University, Lanzhou Gansu, China. Correspondence: Yu Jing (yujing2304@126.com).

Background: We sought to investigate sexual function and related factors in hypertensive patients.

Methods: A total of 300 hypertensive persons (n = 140 men and 160 women) and 129 normotensive persons (n = 79 men and 50 women) were enrolled. Sexual function was evaluated using international index of erectile function and female sexual function index questionnaires.

Results: The scores of erection function were lower in male patients with hypertension compared with normotensive participants (20.94 ± 6.28 vs. 23.48 ± 3.89; P = 0.001), whereas the scores of sexual desire, orgasm ability, sexual satisfaction, and overall satisfaction showed no statistical difference. The prevalence of erectile dysfunction was higher in the male hypertensive participants than in the normotensive participants (29.3% vs. 10.1%; P < 0.01). Compared with the normotensive women, the hypertensive women had lower scores of sexual desire (2.92 ± 1.01 vs. 3.58 ± 0.74; P < 0.01), sexual arousal (3.51 ± 0.96 vs. 4.47 ± 0.67; P < 0.01), vaginal lubrication (4.38 ± 1.02 vs. 5.29 ± 0.59; P < 0.01), and pain (4.86 ± 1.10 vs. 5.50 ± 0.61; P < 0.01), as well as lower total score (23.83 ± 4.50 vs. 27.56 ± 3.28; P < 0.01). The differences in the scores of orgasm and satisfaction were not statistically significant. The prevalence of female sexual dysfunction in hypertensive patients was higher than in normotensive participants (60.4% vs. 26.0%; P < 0.01). Systolic blood pressure (men: β = 0.149, P = 0.006; women: β = 0.148, P = 0.045) and age (men: β = 0.158, P = 0.04; women: β = 0.263, P = 0.001) were risk factors of erectile dysfunction and female sexual dysfunction in hypertensive patients.

Conclusions: Hypertension inhibits sexual function in both male and female patients.