

HO-1 gene overexpression was demonstrated by Northern blot analysis and coincided with increases in the protein expression in VSMCs and total HO activities. Tg mice developed significant elevation of the pressure at various ages, and displayed impaired nitrovasodilative responses in isolated aortic segments versus non-transgenic (Ntg) littermates while enhancing their NO production. The arterial pressure of Tg mice was unchanged markedly either to systemic administration of L-NNA or that of SNP. Furthermore, the isolated aorta in these mice exhibited lesser extents of NO-elicited cGMP elevation via soluble guanylate cyclase (sGC), while exhibiting no notable downregulation of sGC expression. Parallel experiments using recombinant adenovirus containing human HO-1 cDNA (Adv-HO-1) demonstrated that NO-induced cGMP increase was suppressed in VSMCs transfected with Adv-HO-1. Such impairment of the NO-elicited cGMP increase was restored significantly by tin protoporphyrin-IX, an HO inhibitor. On the other hand, YC-1, an NO-independent activator of sGC, increased cGMP and relax aorta from Tg mice to a level comparable to those from Ntg, indicating that contents of functionally intact sGC are unlikely to differ between the two systems. These findings suggest that site-specific overexpression of HO-1 in VSMCs suppresses vasodilative response to NO and thereby leads to an elevation of systemic blood pressure.

Key Words: Soluble Guanylate Cyclase, cGMP, Carbon Monoxide

P-322

ALTERATIONS IN BLOOD PRESSURE AND HEART RATE DURING CYCLIC CHANGES IN FOOD INTAKE

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In people trying to loose body weight, cycles of hypophagia followed by hyperphagia are quite common. The aim of the present study was to evaluate the alterations in daily mean arterial pressure (MAP) and heart rate (HR) during short-term (5-day) changes in food intake.

Adult male lop-eared rabbits were instrumented for continuous measurement of blood pressure and HR by telemetry (24 hours/day) and fed 150 g/day of maintenance diet. The animals were subjected to five 14-day periods. Each period consisted of 5 days where food intake (normal chow) was randomly set to either 225 g (+50 %), 187 g (+25 %), 112 g (-25 %), 75 g (-50 %) per day or ad libitum, followed by 9 days of recovery at 150 g/day. A 50 % increase in food intake induced an immediate and significant increase in HR and a slight increase in MAP (+24.7 ± 2.8 bpm and +2.2 ± 0.6 mmHg at day 5). Similarly, a 50 % decrease in food intake induced a decrease in HR and MAP (-29.0 ± 1.8 bpm and -5.9 ± 1.3 mmHg at day 5). Food access ad libitum induced an even more pronounced increase in HR and MAP (+43.3 ± 3.9 bpm and +4.4 ± 0.8 mmHg at day 5). Unlike the increase in HR during hyperphagia which reached plateau after 1 day, the decrease in HR during hypophagia was progressive (-29.0 ± 1.8 on day 5 vs. -17.2 ± 2.1 bpm on day 1 of -50 %). The effect of hyperphagia on MAP and HR was reversible within 1 day, except after food ad libitum. Recovery of MAP and HR following hypophagia was rapid, but not complete.

Our data suggest that short-term quantitative variations in food intake can lead to pronounced changes in daily hemodynamics, with different courses for hyper- vs. hypophagia. These alterations may play an important role in explaining the increased cardiovascular morbidity associated with weight cycling.

Key Words: Blood Pressure, Hyperphagia, Weight Cycling

P-323

EFFECTS OF NEBIVOLOL ON THE CENTRAL HEMODYNAMIC, PLATELET AGGREGATION AND LIFE'S QUALITY IN PATIENTS WITH ARTERIAL HYPERTENSION

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Object of this investigation is study of Nebivolol's influence on parameters of Central Hemodynamic, platelet aggregation and life's quality in patients with Arterial Hypertension (AH). 32 patients (men) aged 30-65 years with mild and moderate AH were examined. Nebivolol was administered in dosage of 5 mg one time daily as the 6 monthly monotherapy.

We carried out the dynamic control of Blood Pressure (BP), researched the Central Hemodynamic by Echocardiography, defined the aggregative activity of thrombocytes and also evaluated the patient's life's quality before and after treatment. Against background 6-monthly therapy we have revealed, that systolic BP decreased from 152,0±2,44 mm of mercury column (m.c.) to 128,0±1,72 mm m.c. diastolic BP-from 104,0±1,42 mm m.c. to 78,0±1,34 mm m.c. (p<0.05), the Myocardial Mass was reduced on 10%; terminal diastolic Volume decreased from 134,3±7,4ml to 107,5±6,3ml, at the same time the Ejection Fraction increased from 58,4±3,6% to 66,5±3,4%. Patients with AH had higher rate of spontaneous (0.75±0.37) and induced aggregation (2.69±1.23 and 0.83±0.30). But the therapy of Nebivolol decreased the aggregative activity of thrombocytes significantly: spontaneous aggregation became 0.59±0.32 and induced one-1.72±1.18 and 0.66±0.29. We must admit, that the indices of patient's life's quality were improved considerably, in particular the common and psychological condition, the duration, and intensity of heart's pain and tachycardia were reduced, but Nebivolol exerted influence on sexual inclination and satisfaction to improve them.

Thus, the results of our investigation demonstrated, that Nebivolol reduced systolic and diastolic DP effectively, positively affects on Central hemodynamic and the aggregation of thrombocytes simultaneously ameliorates the human's common and psychological condition and sexual satisfaction.

Key Words: Hypertension, Nebivolol, Thrombocytes

P-324

ELEVATED HYDROXYL RADICAL GENERATION IN HYPERTROPHIED MYOCARDIUM OF SHR-SP ESTIMATED IN VIVO BY MICRODIALYSIS WITH SALICYLATE

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The generation of hydroxyl radical in the myocardium of Wistar, Wistar-Kyoto (WKY) rats and SHR-SP using microdialysis technique with salicylate trapping was evaluated. Experiments were carried out on anaesthetized open-chest male rats. The linear microdialysis probe was inserted in the left ventricle (LV) wall and perfused with salicylate-containing Ringer solution. 2,3-Dihydroxybenzoic acid (2,3-DHBA) was