vasorelaxation. This investigation tested the hypothesis that experimental atherosclerosis is characterized by local renal activation of ADM. White Male New Zealand rabbits were fed a 1% cholesterol diet for 8 weeks which resulted in atheromatous lesion in the aorta in association with marked hypercholesterolemia. Kidney medulla and cortex were obtained for quantitative mRNA analysis from normal (n=4) and cholesterol fed (n=4) rabbits. ADM mRNA was increased in atherosclerotic kidneys as compared to normals (ADMGAPDH:0.13±0.01 vs 0.05±0.01 AU, p<0.05). Immunohistochemistry was performed to determine presence of mature ADM (n=3) which revealed the presence of ADM in renal cortex and medulla but also in the vascular wall and ventricular mycardium. Intensity of immunostaining was markedly increased in these tissues in the presence of atherosclerosis. Despite marked tissue activa- tion, plasma ADM was not increased in atherosclerosis compared to normals (10.4±3.7 vs 11.0±1.9 pg/ml). Our studies demonstrate increased ADM mRNA expression in the kidney and positive ADM immuno-staining in the kidney, left ventricle and aorta without increases in circulating ADM. The current study supports the concept that the local cardiorenal ADM activation occurring in atherosclerosis may be an important endogenous humoral protective response in atherosclerosis.

Key Words: vasopressin, Spontaneously Hypertensive Rat, V1 receptor antagonist

POSTERS: Vasoactive Hormones/Autacoids

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SYMPATHOINHIBITION AND V1 RECEPTOR ACTIVATION IN SPONTANEOUSLY HYPERTENSIVE RATS
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The study aimed at investigating effects of sympathoinhibition and vasopressin V1 receptor antagonism on regional hemodynamics in spontaneously hypertensive rats (SHR) relative to normotensive control rats (NCR). Regional blood flow was monitored by electromagnetic flowmeter, which was placed along the hindquarter, or a terminus of the aorta, and the mesenteric trunk artery. Both mesentery and hindquarter vascular resistance were greater in SHR than NCR in conscious state at baseline. Ganglionic blockade with hexamethonium bromide (C6; 25mg/kg i.v.) and the mesenteric trunk artery. Both mesentery and hindquarter vascular resistance were greater in SHR than NCR in conscious state at baseline. Ganglionic blockade with hexamethonium bromide (C6; 25mg/kg weight) attenuated hindquarter resistance in both animals. A preceding non-hypotensive minor hemorrhage (0.3ml/100g weight) exaggerated the reduction induced by C6 in the hindquarter resistance in SHR and in NCR as well. The subsequent intravenous administration of a peptide vasopressin V1 receptor antagonist (V1A; 10ug/kg: [d(CH2 ) 5 NCR as well. The subsequent intravenous administration of a peptide

C-TYPE NATRIURETIC PEPTIDE IN THE CARDIAC VENTRICLE IN MICE
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C-type natriuretic peptide (CNP) is a third member of the natriuretic peptide family, which was originally isolated from the porcine brain. Subsequent investigations have revealed that CNP is localized in human, bovine and canine vascular endothelial cells and inner medullary collecting duct cells of the human kidney. Although both atrial natriuretic peptide (ANP) and brain natriuretic peptide (BNP) are present in the heart, reports have been negative for CNP in either mammalian atria or ventricles. With the increasing use of the mouse in integrative physiology, the goal of the current study was to determine for the first time, the relative quantity of the natriuretic peptide family, including ANP, BNP, CNP and Dendroaspis natriuretic peptide (DNP) in the ventricle of normal adult male mice by immunohistochemistry. The antibody employed for ANP and DNP was cross-reactive in all species, BNP was directed toward porcine, and CNP to human, porcine and rat. The relative quantity of different peptides was estimated from the staining score of microscopic observations by independent observers. In contrast to the previous findings in other mammalian ventricular myocardium, the staining score of murine ventricular CNP was significantly higher than ANP (3.0±0.5 vs. 0.4±0.2, n=7, P<0.05). There was no significant difference between CNP and DNP, which tended to be higher than BNP (3.0±0.5 and 2.4±0.4 vs 1.6±0.3, respectively, n=7) where 0=no staining and 4=marked intensity. In addition, the presence of CNP immunostaining was markedly positive in both cardiac myocytes and cardiac fibroblast-like cells. These studies importantly report that unlike other mammalian species, the normal murine ventricular myocardium may produce CNP. Based upon the known growth-inhibiting properties of CNP, this natriuretic peptide may play an important local role in the control of myocardial hypertrophy and fibrosis.

Key Words: natriuretic peptides, murine myocardium, immunohistochemistry

DESENSITIZATION OF RENAL D1 Dopamine RECEPTORS BY G PROTEIN-COUPLED RECEPTOR KINASES AND ENDOCYTOSIS
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The dopamine 1 receptor, in renal proximal tubules and thick ascending limbs, is a major determinant in renal fluid and electrolyte homeostasis. Renal D1 receptors are regulated by endogenous dopamine. However, the mechanisms(s) of the desensitization of endogenous D1 receptors has not been studied. In human renal proximal tubule cells in culture (n=3-5), the D1 agonist, fenoldopam, increased cAMP accumulation (+73±2%, 10-6M, n=5). Fenoldopam (10-6M) pretreatment gradually decreased responsiveness to subsequent fenoldopam (10-6M) stimulation to -27±5% at 15 min and -95±1 % at 30 min; there were no further changes at 60 min and 90 min. Gradual and full recovery occurred 60 min after removal of fenoldopam. Forskolin (10-7M) action was unaffected. Because G protein-coupled receptor kinases (GRKs) are involved in the desensitization of D1 receptors, we determined the effect of inhibition of GRK activity and expression with heparin/lipofectin (1µM, 15hr). Heparin, which decreases GRK activity and expression of GRK 2, 4, and 6,