1.0± 2.05 μU/ml (p<0.0001); noradrenaline 499.2± 266.7 vs 266±165 pg/ml (p<0.001); adrenaline 41.83± 8.44 vs 20.35±8.46 pg/ml (p=0.05); PRA 0.49±0.37 vs 0.35±0.21 ng/ml/hr (NS); aldosterone 111.7± 54.5 vs 56.45±24.3 pg/ml (p<0.005); cortisol 147.27±85.9 vs 90.36±40.6 ng/ml (p=0.02).

β3 was inversely related to diastolic BP, noradrenaline, adrenaline, aldosterone and cortisol (r=0.58, p<0.004; r=.56, p<0.01; r=0.41, p<0.05; r=0.51, p<0.02; r=0.50 p<0.02; respectively); opposite correlations were found for TSH.

A sympathetic and adrenal activation was observed in hypothyroidism which paralleled the increase in arterial blood pressure and was subsequently reversed with the restoration of thyroid hormone treatment. These mechanisms can represent causal factors in the development of arterial hypertension in human hypothyroidism.

Hypothyroidism should be screened in hypertensive patients. If found affected, they could benefit from the thyroid substitutive therapy also as an antihypertensive treatment.

Key Words: Hypothyroidism, Sympathetic system, Adrenal gland

P-671
ELEVATED BLOOD PRESSURE IN PATIENTS WITH HYDRONEPHROSIS AND UNILATERAL RENAL DYSFUNCTION

Claus L. Petersen, Jytte Nielsen, Jamal A. Hanash. 1Clinical Physiology & Nuclear Medicine, Frederiksberg Hospital, H.S., University of Copenhagen, Frederiksberg, , Denmark

Our intention has been to evaluate blood pressure in patients with hydrenephrosis and substantial unilateral renal dysfunction in a population of patients with obstructive uropathy. In accordance with clinical practice a consecutive sequence of 200 elective patients were referred to scinti-renography based on clinical suspicion of obstructive uropathy. Patients were included in the study if hydrenephrosis was confirmed.

Patients with a clinical history of acute illness or pain were excluded. The study group consisted of 137 patients who fulfilled scinti-renographic criteria of hydrenephrosis. Mean age was 63 years. Eighty-five were males and 52 females.

Renography using 99mTc-DTPA tracer was performed on a general-purpose gamma camera. According to results of renography, based on standardized visual interpretation of the scintigram and tracer kinetic description of renal pelvic tracer transit time and the glomerular filtration rate (GFR), patients were categorized as hydrenephrotic with substantial unilateral renal dysfunction or hydrenephrotic without substantial unilateral renal dysfunction. Substantial unilateral dysfunction was defined as unilateral reduction in GFR of at least 50% compared to the contralateral kidney.

After 30 minutes rest in supine position, blood pressure was measured in an automated fashion using an oscilometric measuring unit (Omron HEM-705CP).

We measured systolic and diastolic blood pressure in patients (n=46) with hydrenephrosis and unilateral dysfunction. (Hydro + unilat.dysfunc.) and compared results of blood pressure in patients (n=91) with hydrenephrosis without unilateral dysfunction (Hydro - unilat.dysfunc.).

Mean systolic BP/Mean diastolic BP:
Hydro + unilat.dysfunc.: 141*84 mmHg
Hydro - unilat.dysfunc.: 132 /82 mmHg

*) p=0.02

We conclude that systolic blood pressure is elevated in patients with hydrenephrosis and unilateral renal dysfunction compared to patients with hydrenephrosis without unilateral renal dysfunction.

Key Words: Hypertension, Renography, Hydrenephrosis

P-672
PRIMARY HYPERALDOSTERONISM IN NORMOKALIEMIC PATIENTS WITH ADRENAL INCIDENTALOMAS

Angela Moretti, Giampaolo Bernini, Gianfranco Argenio, Antonio Salvetti. 1Internal Medicine, University of Pisa, Pisa, Italy, 2Internal Medicine, University of Pisa, Pisa, Italy, 3Internal Medicine, University of Pisa, Pisa, Italy

Hormonal evaluation of adrenal incidentalomas (AI) sometimes reveals the presence of primary hyperaldosteronism (PH). Therefore, we consecutively studied, after exclusion of catecholamine, glucocorticoid and androgen hypersecretion, 125 normokalemic (4.05±0.03 mEq/L, mean±se, range 3.5-5.2 mEq/L) patients with solid AI, by using the plasma Aldosterone (ALD)/PRA ratio as a screening test for PH. Ninety patients (30 males and 60 females; mean age 60 yrs, range 31-86 yrs) were hypertensives (SBP 159±1.4 mmHg; DBP 97±0.9 mmHg) and 35 (12 males and 23 females; mean age 55 yrs, range 26-80 yrs) were normotensives (SBP 124±1.8 mmHg; DBP 78±1.0 mmHg). All patients, after adequate pharmacological wash-out, underwent upright blood samples for ALD and PRA determination. Results were compared with those obtained in 82 essential hypertensives (EH) (48 males and 34 females; mean age 47 yrs, range 16-68 yrs; SBP 154±1.7 mmHg; DBP 98±0.9 mmHg; plasma potassium 3.9±0.02 mEq/L, mean±se, range 3.5-4.3 mEq/L). Patients with ALD/PRA ratio over 112 (upper 95% confidence limits from EH) were submitted to saline infusion (2 liters over 4 hours) and to the Captopril test (50 mg os) in order to confirm the diagnosis of PH. PRA values in hypertensive AI (1.05±0.13 ng/ml/h) were lower than in normotensives with AI (1.14±0.14 ng/ml/h, P<0.05) and in EH (1.68±0.15 ng/ml/h, P<0.0001). The ALD/PRA ratio in hypertensive AI (46.4±5.1) was higher than in normotensives with AI (30.7±5.8, P<0.03) and in EH (33±3.5). Two patients with EH and 2 normotensives with AI had ALD/PRA ratio over 112 but normal response to saline loading and to the Captopril test, thus excluding the diagnosis of PH. Eight hypertensives with AI (8.8%) had also high ALD/PRA ratio and 6 of those were further studied: 3 showed unsuppressible ALD to both dynamic tests, while another normalized the ALD/PRA ratio and blood pressure after surgery. Thus, in 4 out of 6 patients studied (66.6%), the diagnosis of PH was well-established. Therefore, in patients with AI, PH was found in 3.2% of cases and in 4.4% of those with hypertension.

In conclusion, our results show that the prevalence of PH in normokalemic patients with incidentally discovered adrenal masses is non negligible. Consequently, these patients, above all if hypertensives, need to be routinely studied to exclude also this hormonal disease. Evaluation of the ALD/PRA ratio seems to be a simple, reliable, accurate test for diagnosis.

Key Words: potassium, adrenal incidentalomas, primary aldosteronism

P-673
THE ROLE OF NEPHRECTOMY FOR PRESSOR KIDNEY IN THE CURRENT ERA

Garvan C. Kang, Stephen C. Textor, Alexander Schirger, Vesna D. Garovic. 1Department of Internal Medicine, Mayo Clinic, Rochester, MN, United States, 2Division of Hypertension, Mayo Clinic, Rochester, MN, United States

Despite advances in pharmacological, percutaneous, and surgical treatments of renovascular hypertension, some patients develop refractory hypertension and an atrophic nonfunctioning kidney. The modern role for removal of such kidneys is not clear.

We studied the effect of nephrectomy on long-term BP control, and the predictive value of renal vein renins in 35 patients undergoing nephrectomy at the Mayo Clinic in 1995-1999. All patients had an atrophic kidney due to renal artery disease in the setting of refractory hyperten-