## SECONDARY HYPERTENSION

### P-243

**Cardiovascular disorders in hypertensive pheochromocytoma patients**

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**Objective:** To study frequency and peculiarities of cardiovascular disorders in hypertensive pheochromocytoma (pheo) patients (pts).
**Design and methods:** 250 hypertensive pheo pts (112 males and 138 females, mean age 41.7 ± 11.8 y) were retrospectively studied. Tumors were located in adrenals in 232 (right - 120, left - 92, both - 20) and were extraadrenal in 18 pts. 38 pts had recurrent pheo. All pts were operated and pheo was verified as benign (n=108), malignant (n=139) and borderline (n=3) by histology. Tumor's weight varied from 15 to 900 g and size from 1.5 to 12 cm.
**Results:** In 41 of 250 pts (16.4%) hypertension was malignant (M), in 141 pts including 3M (56.4%, 2.1 %M) - paroxysmal, in 70 pts including 31M (28.0%, 44.3 %M) - sustain with crises, in 39 pts including 7M (15.6%, 17.9 %M) - sustain without crises. Pulmonary edema was diagnosed in 8 of 250 pts (3.2%). Renal arteriography (n=40) revealed renal artery stenosis (RAS) in 3 cases (7.5%), in 2 of them RAS was reversible. According to ECHOCG (n=40) cardiac valve prolapse was registered in 19 pts (47.%), left ventricular hypertrophy - 16 pts (40.0%). Myocardial infarction (MI) - like changes were seen in 12 of 250 pts (4.8%), and postinfarction cardiosclerosis in 2 pts with recurrent pheo (0.8%). ECG 12 was normal in 20 pts (8%); different arrhythmias, conduction disorders were registered in 66 pts (26.4%). Holter ECG-monitoring (n=40) revealed different arrhythmias in 19 pts (47.5%), dangerous ventricular arrhythmias (VA) in 7 pts (17.5%) and life-threatening VA in 2 pts (5%). Transient stroke was diagnosed in 14 (5.6%), both severe stroke and retinal detachment in 4 (1.6% each) of 250 pts.
**Conclusions:** MI-like changes and reversible RAS were most likely caused by coronary or renal artery spasm, and were resolved after therapy with alpha-blockers and pheo removal. MI related to coronary atherosclerosis was observed in patients with recurrent pheo. Stroke, pulmonary edema and retinal detachment were related to high BP during hypertensive crises. Various arrhythmias were registered with Holter ECG-monitoring in 47.5% pheo pts, but dangerous and life-threatening ventricular arrhythmias in 17.5% and 5% respectively. Cardiac valve prolapse was revealed in nearly half of the pheo pts, most frequently mitral valve prolapse was seen. Most complications of high BP took place in pheo pts with malignant hypertension. In most cases (44.3%) malignant hypertension was observed in patients with sustain hypertension with crises.
**Keywords:** Pheochromocytoma; Hypertension; Stroke; Renal artery stenosis

### P-244

**Pheochromocytoma, a diagnostic challenge**

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Secondary forms of hypertension are underdiagnosed in many countries, but the evolution and complications can be dramatic.
Our research is a retrospective study during 2004-2013 and includes a group of 24 patients admitted to the surgical ward of Emergency Hospital of Bucharest. These patients were evaluated clinically and by means of laboratory tests and computer tomography. Following diagnosis of pheochromocytoma, they were referred to surgery.
Mean age of patients was 49.5 years, minimum age 24 years, maximum 75 years and the gender distribution was 70.83% feminine and 29.17% masculine.
In terms of cardiovascular history, 17.39% of patients had a history of myocardial infarction (MI) and 4.34% history of ischemic stroke.
Left ventricular hypertrophy was present in 16.66% and renal failure (calculating eGFR by CKD- EPI) in 45.83% of patients. Other endocrinopathies were documented in 20.83% of the subjects, with the prevalence of thyroid pathology.
Metanephrine dosage levels was performed in 83.83% of patients and 55% of them had elevated values, while normetanephrine dosage levels made for the same patients were diagnosed in 85% of patients. Dosing of urinary normetanephrines, metanephrines was done in 29.16% of patients and chromogranin A at 33.33% of patients; values for chromogranin A were increased in 87.5% of cases.
Imaging performed by abdominal computed tomography revealed a right adrenal tumor in proportion 58.33%, histological diagnosis was positive for pheochromocytoma in all cases.
Mean systolic blood pressure at admission was 151.45 mmHg. Patients received tumor resection with subsequent favorable evolution in the days after surgical intervention, with a value of 112.37 mmHg for mean systolic blood pressure.
Pheochromocytoma was diagnosed in our cohort in the age group of 40-50 years, more frequent in females. Biochemical diagnosis by determination of catecholamines and tumor localisation were of vital importance in therapeutic sanction. Surgical treatment led to a significant improvement of BP values.
**Keyword:** Pheochromocytoma

### P-245

**Protective effects of amiloride monotherapy on blood pressure, hemodynamics, and arterial stiffness in glucocorticoid-remediable aldosteronism (GRA)**

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**Background:** GRA, a rare autosomal dominant mutation in aldosterone (Aldo) synthase, causes lifelong hyperaldosteronism with hypertension often refractory to non-specific drugs. In animal models, Aldo causes abnormal collagen deposition in the heart and aorta but there is little evidence that Aldo has a similar effect in humans. Sodium-channel blockade (amiloride) is highly effective in normalizing BP in GRA patients but does not lower Aldo or directly block its receptor; its effectiveness in maintaining normal hemodynamics and arterial elasticity in GRA patients has not been demonstrated.
**Methods:** We studied a mother and daughter of a known GRA kindred whose BPs had been very well controlled with amiloride monotherapy (5-10 mg daily for >20 and >10 years, respectively). In addition to standard clinic BP values determined by oscillometry (Omron905CP), 24-hour ambulatory hemodynamic monitoring was done by IEM Mobilograph. We also used a Colin VP2000 to determine heart-femoral (hf), heart-carotid (hc), carotid-femoral (cf), brachial-ankle (ba) and femoral-ankle (fa) pulse