PREVALENCE, CHARACTERISTICS AND PREDICTIVE VALUE OF SEVERE RESISTANT HYPERTENSION FOR THE INCIDENCE OF CARDIOVASCULAR DISEASE

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Objective: Novel therapeutic aspects, such as percutaneous renal sympathetic denervation, have emerged for the treatment of severe resistant hypertension (RH). In the present study, we investigated the prevalence and the predictive value of severe office RH for the incidence of cardiovascular disease in essential hypertensives.

Methods: We prospectively followed up for a median period of 3.5 years (IQ 2.7-5.3 years) 2329 uncomplicated hypertensives (aged 58.1±11 years). All subjects were referred or self-referred in the hypertension unit of our institution and had at least one visit annually. Severe RH at baseline was defined as office systolic blood pressure >160 mmHg despite the concurrent use of 3 antihypertensive agents one of them being a diuretic. End-points of interest were the incidence of coronary artery disease (CAD) (confirmed by coronary angiography), stroke, atrial fibrillation (AF) and their composite.

Results: The incidence of the composite end-point was 6.7% (156 patients) over the whole follow-up period [(61 patients with CAD, 21 patients with stroke, 78 patients with AF (44 paroxysmal and 34 permanent forms) and 16 with more than one event)]. The prevalence of RH was 7.9%. Patients with severe RH compared to those without were older (by 4.4 years, p<0.001) and exhibited greater waist circumference (by 4.4 cm, p<0.001), body mass index (by 1 kg/m2, p=0.001) and prevalence of diabetes (by 7%, p=0.006), as well as increased left ventricular mass index (by 14.2 g/m², p<0.001), glucose (by 10.2 mg/dl, p<0.001), creatinine (by 0.11 mg/dl, p=0.001) and triglycerides levels (by 25.2 mg/dl, p<0.001) and decreased potassium (by 0.11 meq/L, p=0.002) and HDL levels (by 2.2 mg/dl, p=0.038). Incidence of CAD (5.4% vs. 2.4%, log rank p=0.013), stroke (2.7% vs. 0.7%, log rank p=0.006), AF (7.1% vs. 3%, log rank p=0.004) and their composite (13% vs. 6.2%, log rank p=0.001) was significantly higher in patients with RH. By applying multivariate Cox regression analysis the presence of RH (HR 1.66, p=0.037) along with age (HR=1.059, p<0.001), male gender (HR 2.154, p<0.001) and smoking (HR=1.804, p=0.003) were independently associated with the incidence of the composite end-point.

Conclusions: The presence of severe office RH among all traditional risk factors turned out to be a potent independent predictor of advanced cardiovascular disease in the setting of essential hypertension.