Heart

5.20 Metabolic Syndrome and Obstructive Sleep Apnoea in Patients with Visceral Obesity: Effect on Left Ventricular Remodelling

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Aim. To evaluate the influence of the metabolic syndrome (MS) and obstructive sleep apnoea (OSA) on left ventricular (LV) remodelling in patients with abdominal obesity.

Methods. We enrolled 100 consecutive patients evaluated for suspected OSA, with abdominal obesity (BMI >25 Kg/m², waist circumference >88 cm in women, >102 cm in men), and without history of diabetes and cardiovascular diseases, matched for age, sex and 24-hour blood pressure (BP) values with 20 lean healthy subjects. Each patient underwent night-time cardiorespiratory examination, 24-hour ambulatory BP monitoring and LV echocardiogram.

Results. OSA was diagnosed in 65 patients (OSA+). The prevalence of MS was similar among OSA+ and in patients without OSA (OSA-) (74% and 71.4% respectively, ns). LV end-diastolic diameter was normal in all, as well as LV ejection fraction. Seventy six patients showed LV hypertrophy (LVMi >44g/m^{2.7} in women and >48g/m^{2.7} in men) and 52 patients showed LV diastolic dysfunction (at least 2 of the following: E/A < 1, E'/A' < 1, Em/Am < 1). In order to evaluate the influence of OSA, MS and their association on LV remodelling, we compared LV characteristics between the lean control group and the 100 patients, subdivided as follows: OSA+MS+, OSA+MS-, OSA-MS+, OSA-MS-. The 5 groups were similar for age and 24 hours BP values; the BMI was similar in the 4 overweight/obese groups. Subdividing the patients on the basis of OSA, all LV morpho-functional parameters, as well as the prevalence of LV hypertrophy and diastolic dysfunction, were similar between OSA+ and OSA-. The lean controls showed significantly lower LV mass index and higher indices of LV diastolic function compared to all the 4 overweight/obese groups. Among these latter ones LV mass index was significantly higher and diastolic parameters significantly lower in the 2 groups with MS than in the 2 groups without MS. Using a multiple regression analysis, the main independent determinant of LV mass was the presence of MS, followed by 24-h systolic BP and age; after removing MS from the equation, the main determinants were 24-h systolic BP, BMI and age; the AHI and the single components of the MS did not enter in the equation.

Conclusions. In patients with visceral adiposity MS is linked to abdominal obesity, not to OSA per se. Moreover abdominal obesity and MS are independently associated with LV remodelling, whereas OSA does not play a relevant role.