[gw22-e0280] **CHANGES IN LEFT VENTRICULAR STRUCTURE AND FUNCTION IN PATIENTS WITH METABOLIC SYNDROME**

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Objective To determine the changes in left ventricular function and types of ventricular remodelling in patients with metabolic syndrome with hypertension (HMS), metabolic syndrome without hypertension (MS-none) and essential hypertension.

Methods A total of 206 patients were included according to the Chinese Diabetes Society (CDS) inclusion criteria; average age of 64.0±11.4 years old, including 101 male patients and 105 female patients. Patients were classified into two groups: 107 patients HMS with average age of 64.7±11.1 years old, including 83 male and 87 female patients; and 36 patients with MS-none with average age of 60.8 ±12.2 years, including 18 male and 18 female patients. Forty three cases of essential hypertension with an average age of 60.1±13.2 years old, including 24 male and 19 female patients; and 53 normal controls with an average age of 63.4±12.8 years old, including 22 male and 31 female patients. Routine physical examination: blood pressure, pulse, body height, body weight, heart rate, waist and hip circumference. Laboratory tests: Measurement of liver and kidney function following an 8-h fast, fasting blood glucose, total cholesterol, triglyceride high density lipoprotein-cholesterol, low-density lipoprotein-cholesterol. All subjects were measured by echocardiography.

Results (1) Interventricular septal thickness, left ventricular posterior wall, left ventricular mass, left ventricular mass index in patients with HMS have significantly higher than that patients with MS-nonEH and patients with essential hypertension. (2) In HMS patients left ventricular hypertrophy accounted for 28.2% with mainly concentric hypertrophy; in MS-nonEH patients left ventricular hypertrophy accounted for 16.6% with mainly concentric hypertrophy and eccentric hypertrophy; in essential hypertension patients left ventricular hypertrophy accounted for 16.3% with mainly concentric hypertrophy. (3) Multivariate regression analysis: in HMS group left ventricular mass index have significant correlation with history of hypertension and diabetes, systolic blood pressure, pulse pressure and fasting blood glucose ($p<0.01$). (4) Multivariate logistic regression analysis: in HMS group, systolic blood pressure and fasting blood glucose influence the left ventricular mass index, systolic blood pressure regression coefficient $\beta=0.081$, RR 1.085 (95% CI 1.052 to 1.118), diabetes regression coefficient $\beta=0.194$, RR 1.214 (95% CI 1.066 to 1.383). In HMS group, systolic blood pressure influence the E/A, the regression coefficient $\beta=0.038$, RR 1.038 (95% CI 1.016 to 1.061).

Conclusions (1) Both metabolic factors (MS-nonEH) and haemodynamic factors (essential hypertension) can lead to increase interventricular septal thickening, increased left ventricular mass. (2) The left ventricular mass index in patients with HMS have significant correlation with history of hypertension and diabetes, systolic blood pressure, pulse pressure and fasting blood glucose. (3) HMS patients have higher frequency of left ventricular diastolic dysfunction than patients with MS-nonEH and patients with essential hypertension. Using multiple regression analysis, in HMS group the systolic blood pressure significantly affected left ventricular diastolic function.