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CARDIAC STRUCTURE AND FUNCTION IN OLDER SENILE PATIENTS

J Hu,¹ F Zhu,¹ J Xie,¹ X H Cheng,² G Y Chen,² H F Tai,³ S H Fan³ ¹Senile Department, XuHui Central Hospital, Shanghai, China; ²Medical Institute, Nantong University, Jiangshu, China; ³Medical Institute, Jiangsu University, Jiangshu, China

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Objective To evaluate the changes of the cardiac structure and function in older patients with essential hypertension, so as to assess the effect of the increase of age and hypertension on above changes, and understand the general rules and characteristics of them.

Methods Age ≥ 80 are the very older people, age ≥ 60 and < 80 are the older people. Patients were divided into very older people with hypertension (α group, 84 cases), very older people without hypertension (α group, 18 cases), and older people with hypertension (β group, 48 cases). All above 132 cases hypertensive patients were divided according to duration of hypertension into four subgroups: Group A: > 0 and ≤ 10 years (29 cases), > 10 and ≤ 20 years (32 cases), > 20 and ≤ 30 years (44 cases), > 30 and ≤ 40 years (27 cases). All those patients were tested the following index by echocardiography: the thickness of interventricular septum (IVS), left ventricular wall thickness (LVPW), left ventricular end-diastolic diameter (LVDd), left ventricular end-systolic diameter (LVDs), end-systolic left atrium before and after the diameter (LAD), left ventricular mass (LVM), left ventricular mass index (LVMI), left ventricular ejection fraction (EF), Left Ventricular Fractional Shortening (FS). The 24 h systolic blood pressure (24 hSBP) were measured by using ambulatory BP monitoring (ABPM) method. Weight and height were measured and calculated to be BMI. Totalcholesterol, triglyceride, High-density lipoprotein, Low-density lipoprotein, haemoglobin A1c (HbA1c) and glucose levels were measured in blood samples obtained after a 12 h fast.

Result The value of 24 hSBP between the very older people with hypertension and the very older people without hypertension (129.02 ± 1.75 vs 118.39 ± 3.04 mm Hg, $p=0.009$) is different, but no difference in BMI, FPG, HbA1c, TC, LDL, HDL ($p>0.05$). The value of 24 hSBP between the very older people with hypertension and the older people with hypertension (129.02 ± 1.75 vs 125.77 ± 1.96 mm Hg, $p=0.298$) is similar, as well as FPG, HbA1c ($p>0.05$), but lower in TC, LDL, HDL, BMI ($p=0.006$, 0.017 , 0.001 , 0.002 , respectively) in the very older people with hypertension. The very older people with hypertension group had significantly higher levels of LVMI and LVM than the very older people without hypertension (both $p=0.000$), but had no difference with the older people with hypertension ($p=0.616$ and $p=0.778$, respectively). The value of LVMI ($r=0.266$, $p=0.000$), LVM ($r=0.282$, $p=0.000$), IVS

($r=0.171$, $p=0.025$), LVPWd ($r=0.242$, $p=0.002$), LVDd ($r=0.217$, $p=0.004$), LADs ($r=0.210$, $p=0.006$) were positively correlated with the duration of hypertension, FS ($r=-0.152$, $p=0.047$), EF ($r=-0.195$, $p=0.011$) were negatively correlated with the duration of hypertension.

Conclusion In senile patients, hypertension may develop further serious left ventricular hypertrophy, which leads to the decrease of systolic function. With the increasing of duration of hypertension, accompanied severe left ventricular hypertrophy and the increase of heart weight, the decrease of cardiac contractile function. Therefore, in senile hypertensional patient, decreasing blood pressure stably in a rational range is advisable and recommendable strategy. With the decrease of serum lipid level in senile period, left ventricular hypertrophy may be postponed.