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Objective To evaluate the changes in the cardiac structure and function in older patients with essential hypertension, and as to assess the effect of age and hypertension on above changes.

Methods Those whose age ≥ 80 are considered very older people, and those whose age ≥ 60 and < 80 are 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 older patients, hypertension results in significant left ventricular hypertrophy, which may lead to decrease of systolic function. Increasing duration of hypertension, is associated with severe left ventricular hypertrophy, increase of left ventricular mass, and decrease of cardiac contractile function. Therefore, in the elderly hypertensive patient, decreasing blood pressure to an optimal range is advisable and recommended strategy.

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CARDIAC STRUCTURE AND FUNCTION IN OLDER SENILE PATIENTS WITH ESSENTIAL HYPERTENSION

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