Effects of the lipid lowering therapy on blood pressure and arterial stiffness in hypertensive patients with ischemic heart disease and type 2 diabetes mellitus

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Objectives: to improve blood pressure (BP) control in hypertensive patients with ischemic heart disease (IHD) disease and type 2 diabetes mellitus (T2DM).

Methods. We examined 42 hypertensive patients with IHD and T2DM (19 males, age 60.5 ± 4.7 years). Baseline characteristics of patients included history of arterial hypertension (12 ± 2.6 years), IHD (7.2 ± 2.3 years), T2DM (4.7 ± 0.5 years). The level of HbA1c was less than 7.5%. All patients were divided into 2 groups: the 1st (n = 22) - in the standard therapy received atorvastatin 20 mg, the 2nd (n = 20) - patients with hypertriglyceridemia – received atorvastatin 20 mg and fenofibrate 145 mg. All patients underwent 24-hour ambulatory BP monitoring, determination of lipid profile. Arterial stiffness (AS) was measured as brachial-ankle pulse wave velocity (ba-PWV). These parameters were evaluated at baseline and in 6 months.

Results. Lipid-lowering therapy contributed to decrease levels of LDL (17.3% and 18.1%), triglycerides (28% and 37%), to increase levels of HDL (27% and 31%) in 1st and 2nd groups respectively, resulted in a decrease ba-PWV (from 17.31 ± 1.54 to 16.58 ± 0.97 m/s vs from 18.8 ± 1.08 to 15.8 ± 0.92 m/s), significantly reduced 24-h systolic and diastolic BP by 6.4 and 2.6 mmHg in 1st group, 9.3 and 6.1 mmHg in the 2nd group. The largest decline of ba-PWV and significant additional reduction in BP values (r = 0.39; P <0.05) was in those patients who achieved target values of lipid profile regardless of BP (P<0.05).

Conclusions. Lipid-lowering therapy improves lipid metabolism, reduces AS and may provide an additional reducing of BP in hypertensive patients with IHD and T2DM.