## THE INFLUENCE OF DYSLIPIDAEMIA CORRECTION ON KIDNEY HEMODYNAMICS AND CALCIUM METABOLISM IN PATIENTS WITH ESSENTIAL HYPERTENSION AND OSTEOARTHRITIS.

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**Purpose**: To investigate the effect of dyslipidemia (DL) correction with atorvastatin (As) on kidney mechanisms of calcium (Ca) reabsorption in patients (pts) with co-existent hypertension (H) and osteoarthritis (OA).

**Methods**: 98 pts with H+OA (age 52-72) were examined, before initiation of therapy with lisinopril (20-40 mg per day) and As (20 mg/day) and 3 month after. The comparison groups included 50 pts with H and 30 healthy persons. Ca level was determined by spectrophotometry; Ca-uretic renal function - by the oral calcium-tolerance test (CaTT) which determined the following indexes: renal Ca excretion (RCaE), Ca filtration charge (CaFC) and Ca excretion fraction (CaEF); bone resorption intensity - by C-terminal telopeptide (C-tt).

Results: RCaE was observed in pts with H+OA. It was proved by retarded transport of Ca between kidneys and extracellular fluid (ECF) (+0.089±0.010 mmol/min) in comparison with Ca transport in pts with H (+0.108±0.009 mmol/min). CaEF dynamics indicates a decrease in tubular reabsorption of Ca in pts with H+OA (4.23±0.11%, against 3.76±0.11% in pts with H and 2.94±0.08% in control). Besides effective correction of DL (total cholesterol decreased from 5.97±0.14 to 4.11±0.11 mmol/l; low-density lipoproteins (LDLP) - from 3.78±0.12 to 2.12±0.09 mmol/l, p<0.05), RCaE decreased after Ca loading by 24.6% as a result of Ca reabsorption elevation by 1.45% (p<0.05), which contributed to acceleration of Ca transport ECF into bones nearly in 2 times (from -0.047±0.007 to -0.092±0.006 mmol/min; p<0.05). Correlation was determined between a decrease of serum LDLP and RCaE (r=+0.33; p<0.05). The mechanism of tubular changes is associated with improvement of peritubular hemodynamics as a result of increase (p<0.05) of kidney blood supply by  $102\pm23$  ml/(min×1.73M<sup>2</sup>) and decrease of total renal vascular resistance from 7022±90 dyn×c×sm-5 to 6519±94 dyn×c×sm-5, predominantly (72.4%) efferent (p<0.05). After treatment with As, C-tt concentration decreased by 2.34 times (from 252.2±16.1 to 108.0±13.3 mkg/mmol), correlation between LDLP and C-tt (r=+0.42; p<0.05). Conclusions: Anticalciuretic effect of As is caused by the improvement of renal hemodynamics increase of renal blood flow due to the decrease of efferent renal vascular resistance. Kidney effects of As increase with simultaneous intake of lisinopril