

program on arterial stiffness and cognitive function of a Portuguese elderly cohort, included in the AGA@4life project.

Design and method: The exercise program included aerobic and strength components, prescribed in a personalized approach according to the AGA@4life model, and implemented under direct control of two experienced professionals. The 33 included elderly participants were divided into two groups (intervention group –IG – and control group – CG) according to their willingness to participate in the physical training program. Cognitive function was evaluated with the CANTAB platform and AS by measuring aortic pulse wave velocity (PWV), both at baseline and three-months after the intervention period.

Results: The groups had similar clinical and demographic characteristics at baseline. After the intervention program, significant improvements in cognitive function were observed in the IG, but not in the CG, mainly a significant improvement in motor control, spatial working memory and visuospatial associate learning, revealing an overall better cognitive performance. A significant de-stiffening effect was also observed in the IG, with a mean reduction in PWV of -0.67 m/s (adjusted $p = .005$).

Conclusions: Tailored physical exercise as foreseen in the AGA@4life program is an effective non-pharmacological tool to positively modulate age-related decline in cognitive function and to de-stiffen the aorta in older adults.

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INCREASING OF ARTERIAL STIFFNESS INDEX IS ASSOCIATED WITH VALVULAR CALCIFICATION IN POSTMENOPAUSAL WOMEN

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Objective: Aim of our study was to elucidate possible clinical association with arterial stiffness parameters in postmenopausal women.

Design and method: We include into the study 254 women (mean age is 63,9 ± 6,97 years). All women were postmenopausal (mean menopausal duration is 14,9 ± 6,90 years). 81,4% of patients had arterial hypertension; 8,7% - diabetes mellitus; 41,1% - coronary artery disease; 9,4% of pts were smokers. 68,7% of patients get antihypertensive treatment and 49,9% - statins. We performed ABPM with arterial stiffness measurement, echocardiography, bone densitometry in all patients. Lipids levels, glomerular filtration rate, glucose and HbA1 level, vitamin D, Ca, P and calcitonin level were measured in all women.

Results: Increasing of arterial stiffness index (ASI) was correlated with mean systolic blood pressure (SBP) according to ABPM ($r = 0,526$, $p < 0,001$), daily SBP ($r = 0,522$, $p < 0,001$) and nightly SBP ($r = 0,445$, $p < 0,001$). Also non-dipper pts had higher level of ASI. The ASI was significantly higher in patients older than 65 years (170,0 ± 32,09 mmHg vs 145,7 ± 33,87 mmHg, $p = 0,039$) and in women with menopause duration more than 14 years (164,0 ± 33,99 mmHg vs 145,7 ± 20,48 mmHg, $p = 0,001$). There were no any associations between ASI and laboratory parameters or bone mineral density. In patients with valve calcification level of central pulse pressure (50,7 ± 11,04 mmHg vs 45,9 ± 8,92 mmHg, $p = 0,014$) and ASI (159,6 ± 33,11 vs 146,8 ± 22,01, $p = 0,026$) were significantly higher compared with patients without calcification of the heart valves. According to multivariate regression analysis were the age of the patients (OR 4,19 CI [1,42–12,19], $p < 0,001$), the mean daily SBP according to the ABPM (OR 1,08 CI [1,01–1,18], $p = 0,001$) and calcification of the valve structures of the heart (OR 1,74 CI [1,01–2,47], $p = 0,047$) were independently associated with an increase in the ASI.

Conclusions: This data indicates a general pathogenesis mechanism of the occurrence of valvular calcification and an increase in vascular stiffness.

MARKERS OF BONE REMODELING, 25-HYDROXYCHOLECALCIFEROL LEVEL AND LIPID METABOLISM PARAMETERS IN ELDERLY WOMEN WITH UNCOMPLETED ARTERIAL HYPERTENSION

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Objective: To make a comparative analysis of the parameters of bone remodeling lipid, calcium – phosphor exchange and 25-hydroxycholecalciferol (25(OH)D) level in elderly women with uncomplicated arterial hypertension (AH) and without it

Design and method: The study included 44 patients with AH stage I-II (mean age - 69.1 ± 0.7 years, average duration of postmenopausal period - 18.4 ± 0.9 years) and 30 practically healthy women (mean age - 69.3 ± 1.2 years, average duration of postmenopausal period - 19.4 ± 1.2 years). All patients underwent general clinical and laboratory examination with determination of lipid level in blood, level 25(OH) D, parathyroid hormone, propeptide procollagen of type 1 aminoterminal (PINP), β-isomerized C-terminal telopeptides (b-CTX), ionized calcium and phosphorus in serum, daily monitoring of blood pressure (BP), echocardiography and applanation tonometry.

Results: In patients of the main group, compared with the control group, hypercholesterolemia was revealed (total cholesterol (TCh) level of 6.3 ± 0.18 and 4.6 ± 0.1 mmol/L, low density lipoproteins (LDL) 3.8 ± 0.2 mmol / L and 2.1 ± 1.2, triglycerides (TG) 1.8 ± 0.1 and 1.0 ± 0.1 mmol / l, respectively, all $p < 0,001$), insufficiency and deficiency 25(OH)D (23, 76 ± 1.1 ng / ml and 28.18 ± 2.1 ng / ml, $p < 0,05$), secondary hyperparathyroidism (parathyroid hormone (PTH) - 64.6 ± 3.9 ng / ml and 39.56 ± 1.1 ng / ml, $p < 0,001$), accelerated resorption of bone tissue (b-CTX 0.57 ± 0.03 and 0.45 ± 0.03 ng / ml, $p < 0,01$). A direct proportional correlation between the level of TCh, LDL and PINP ($r = +0.417$; $r = +0.481$, all $p < 0,01$) indicates a link between hypercholesterolemia and bone remodeling activity in elderly patients with uncomplicated hypertension.

Conclusions: In elderly women with controlled uncomplicated hypertension compared with healthy ones of corresponding age, lesion of mineralization of bone tissue is associated with decrease in the level of 25(OH) D, hypercholesterolemia, secondary hyperparathyroidism

CORRELATION OF ANKLE-BRACHIAL INDEX WITH FRAILTY STATUS IN OLD HOSPITALIZED PATIENTS

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Objective: Frailty is a state of vulnerability due to poor recovery of homeostasis after stressor event and is a consequence of cumulative decline in many physiological systems, including the cardiovascular one. Atherosclerosis causes a chronic reduction of vascularization of tissues, contributing in this way to the functional and cognitive decline of the elderly. The Ankle-Brachial Index (ABI), obtained by the ankle-brachial blood pressure ratio, as an indicator of atherosclerosis, could be used as a marker of frailty.

Design and method: Our cross-sectional monocentric study selected 100 patients of ≥65 years old (average age 80 ± 6.9 years) hospitalized in the Internal Medicine department of our institution. Subjects were evaluated with ABI and frailty indexes (death, hospitalization length, delirium, falls, cognitive impairment, ADL and I-ADL).

Results: At the correlation analysis of the various indexes of frailty considered, the only significant correlations with the ABI were represented by the cognitive impairment ($r = -0.298$; $p = 0,003$) and the ADL index ($r = 0,198$; $p = 0,048$). At the subsequent multivariate regression, the ABI index remained a statistically significant determinant of cognitive impairment ($\beta = -5.818$; $p = 0,01$) but not of ADL ($\beta = 0.328$; $p = 0.729$).

Conclusions: Lower ABI is associated with worse cognitive performance in old age, possibly because of long-term exposure to atherosclerotic disease. This would accentuate the functional disability of the elder, even in the simplest daily actions, and support the hypothesis that the ABI can be used as a marker of frailty in elderly people.

NO ASSOCIATION BETWEEN ARTERIAL STIFFNESS AND ORTHOSTATIC HYPOTENSION IN HYPERTENSIVE PATIENTS OF OLDER AGE GROUPS

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Objective: The aim of our study was to investigate the relationship between the orthostatic hypotension identified by active and passive 5-min orthostatic test (OT) with arterial stiffness (AS) in treated patients with arterial hypertension (AH) older age groups.

Design and method: 69 pts (21 M, 48 F) with AH grade I-III, av.age 67,3 ± 5,8 years. Pts received regular antihypertensive therapy excluding the administration of drugs at day of the test.

During OT blood pressure (BP) (beat to beat) measured continuously and non-invasively using the “Task Force Monitor (“CNSystems” Austria). The criteria for initial orthostatic hypotension (IOH) and classical orthostatic hypotension (OH) was considered according to criteria ESC 2018. Blood pressure (BP) was assessed by BP-24 hour monitoring with 30 min day time intervals and 60 min at night time. (“BP Lab”, Russia). AS was determined by VaSera VS-1500 (Fukuda