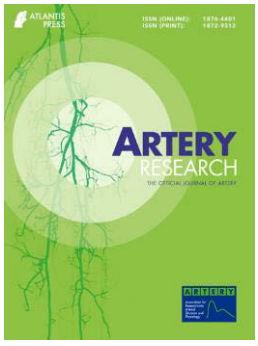

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P82: REDUCTION IN ENDOTHELIAL, BUT NOT MICROVASCULAR, FUNCTION DURING ACUTE INFLAMMATION: PRELIMINARY RESULTS

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Context: School adolescents in Porto Alegre have a mean physical inactivity (PI) <300 min/week of 43%, and another 13% do not perform physical activities. In this scenario, endothelial cells that regulate vascular homeostasis by the expression of bioactive mediators may be influenced by inflammatory responses and dysfunction. To date, there is no evidence that the level of PI can influence the preservation of endothelial function in this population.
Objectives: To describe the characterization of the hemodynamic and vascular profile of adolescents and to correlate the level of PI with endothelial function.
Methods: This cross-sectional study evaluated 39 volunteer men between 12 and 18 years of age, allocated to different percentiles of body mass index, recruited from the school network. The variables collected were: anthropometry, questionnaire on the behavior of adolescents and dilation mediated by the flow of the brachial artery (FMD). Parametric data are presented as mean and standard deviation and the level of correlation between the level of PI and endothelial function was assessed by the Pearson test.
Results: Age mean was 14.5 ± 4 years, BMI percentile mean was 78.2 ± 38, PI level mean was 210.8 ± 154.7 minutes/week, and FMD mean was 9.7 ± 2.9%. At this moment, with 46% of the sample collected, we found a probability of correlation between the PI and mean arterial diameter until the peak of dilation ($r = 0.41$, $p < 0.01$) and between the PI level and time to peak ($r = 0.35p < 0.05$).
Conclusions: In view of the preliminary findings, these adolescents are classified as sedentary, presenting hemodynamic and endothelial damage.

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P82
REDUCTION IN ENDOTHELIAL, BUT NOT MICROVASCULAR, FUNCTION DURING ACUTE INFLAMMATION: PRELIMINARY RESULTS

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Acute inflammation is associated with increased risk for cardiovascular events and leads to reductions in conduit artery (flow-mediated dilation, FMD) and resistance vessel endothelial function. Whether this dysfunction during acute inflammation is further transmitted down the arterial tree to the microvasculature, inhibiting its ability to dilate or be recruited in response to a hypoxic stimulus, has yet to be investigated. Microvascular function and reactivity can be non-invasively measured using near-infrared spectroscopy (NIRS) during and following an occlusive stimulus.
Purpose: To investigate whether acute inflammation impairs microvascular function.
Methods: The typhoid vaccine was used to induce acute systemic inflammation in 16 young, healthy adults (8 male, 26.3 ± 3.0 years; 21.7 ± 2.4 kg/m^2). Blood pressure, FMD of the brachial artery, and NIRS of the forearm flexor muscles were measured at baseline and 24-h following the vaccination. NIRS was analyzed during a 5-min arterial occlusion to obtain markers of microvascular function and reactivity from the tissue saturation index (TSI): occlusion slope (muscle oxidative capacity); and reperfusion slope, reperfusion magnitude, and peak hyperemic response (microvascular reactivity).
Results: Mean arterial pressure did not change during the inflammatory episode (90 ± 9 mmHg to 90 ± 7 mmHg, $p = 0.83$) and FMD was significantly reduced at 24 h (5.6 ± 2.6% to 4.1 ± 1.7%, $p = 0.03$). No change was noted in the TSI occlusion slope, reperfusion slope, reperfusion magnitude, or peak hyperemic response ($p > 0.05$).
Conclusion: Vaccination-induced acute inflammation reduced endothelial function. However, no differences were noted in microvascular reactivity or oxidative capacity. Further investigation with a larger sample size is necessary to confirm these results.

P83
DIFFERENT PROTOCOLS FOR EARLY CARDIAC REHABILITATION MODULATE THE VASCULAR FUNCTION OF INDIVIDUALS UNDERGOING CORONARY ARTERY BYPASS GRAFTING: RANDOMIZED CLINICAL TRIAL

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Background: Cardiac rehabilitation with aerobic exercises is the first strategy as a non-pharmacological treatment in the postoperative period of individuals undergoing coronary artery bypass grafting (CABG) to improve functional capacity and vascular health. However, other exercise modalities remain uncertain as to the same benefits. Purpose: To evaluate the effect of different modalities of exercise, such as early cardiac rehabilitation, on subjects submitted to CABG on the percentage of flow-mediated dilatation (FMD) of the brachial artery and vascular resistance.
Methods: A randomized clinical trial in which 15 patients (62.7±6.5 years) underwent CABG were randomly assigned to the following groups: isometric (IG, Handgrip Jamar Ò), ventilatory muscle training (VG, PowerBreathe Ò) and control (CG, conventional respiratory and motor physiotherapy). All patients received physical attendance twice a day (20 minutes/session) for a consecutive week after the CABG (hospital admission). Endothelial function was assessed through the technique FMD before and after (~7 days) admission to CABG. The doppler ultrasound videos were analyzed by CardiovascularSuite Ò software to measure %FMD. Statistics: Generalized estimation equation, followed by Bonferroni post-hoc ($p < 0.05$).
Results: Systolic, diastolic and mean arterial pressure (SBP/DBP/MAP, respectively) was of 133, 76, 95 mmHg. The groups presented %FMD before and after intervention of: IG 9,2 - 2,7% $p = 0,71$; VG 9,7 - 10,9% $p = 0,82$; CG 10,4 - 2,9% $p = 0,15$ and medium flow of: IG 245,5 - 207,6 mL/min $p = 0,84$; VG 83,7 - 58,7 mL/min $p = 0,04$; CG 94,6 - 101,2 mL/min $p = 0,89$.
Conclusions: Different protocols for early cardiac rehabilitation modulate the vascular function of individuals undergoing CABG.

P84
RELATIONSHIP OF ARTERIAL STIFFNESS AND ANKLE-BRACHIAL INDEX

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The ankle-brachial index (ABI) is widely accepted as a diagnostic test used to evaluate the presence of peripheral arterial disease (PAD). 1. We investigated the associations between central arterial stiffness evaluated by measurement of aortic pulse wave velocity (aPWV), augmentation index