P11.25: DETERMINANTS OF ARTERIAL STIFFNESS IN YOUNG INDIVIDUALS AT LOW CARDIOVASCULAR RISK: THE ROLE OF AUTONOMIC NERVOUS SYSTEM

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with history of cardiovascular events had higher: number of swollen and
tender joints, disease activity score (DA528), body mass index (BMI), level of
ESR, CRP, total cholesterol, triglyceride, augmentation index, aortic pulse
pressure. Cases with cardiovascular event were also more likely to have
taken higher doses of corticosteroids compared to controls. In statistical
analysis, only triglyceride level and aortic pulse pressure were significant
risk factor for the development of cardiovascular events (p < 0.05). The other
mentioned factors have drawn near but haven’t crossed the level of statis-
tical significance.
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DETERMINANTS OF ARTERIAL STIFFNESS IN YOUNG INDIVIDUALS AT LOW
CARDIOVASCULAR RISK: THE ROLE OF AUTONOMIC NERVOUS SYSTEM
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Our aim was to study the influence of autonomic nervous system and other
factors on arterial stiffness in young individuals at low cardiovascular risk.
The study involved 136 healthy individuals (mean age 23.5 ± 6.7 years, 89
men and 47 women). The examination included: cardiovascular risk factors
screening, heart rate variability (HRV), vascular stiffness, and endothelial
function evaluation. Stiffness index was measured at baseline (SI0) and after
500 mcg of sublingual nitroglycerine (SIaug). Endothelial function was deter-
mined as the change of resistance index after inhalation of 400 mcg of sal-
butamol (EF). Vascular responses were calculated from digital pulse waves
(DPW) registered using photoplethysmography. Vascular parameters did
not differ between men and women. On multivariate analysis age and dia-
stolic blood pressure were the only determinants of SI0 among the conven-
tional risk factors (R2 = 0.37, R2 = 0.14, p < 0.001). Age, systolic blood
pressure, and EF were independent predictors of SIaug (R2 = 0.57, R2 = 0.33,
p < 0.001). Among HRV parameters added to the above models low parasym-
pathetic activity and elevated sympathetic activity evaluated by pNN50 and
low frequency waves spectrum (LF), respectively, were independent predic-
tors of higher levels of SIaug (p < 0.00001 for each parameter). The model
explained nearly 40% of SIaug variability (R2 = 0.62, R2 = 0.38, p < 0.00001).
Only pNN50 was independently related to SIaug in multivariate model
(p < 0.01) marginally increasing its predictive value (R2 = 0.64, R2 = 0.41,
p < 0.00001). Thus, autonomic nervous system significantly affected baseline
arterial stiffness evaluated by DPW analysis in young individuals. Whereas
SIaug is minimally influenced only by parasympathetic tone and more
precisely reflects cardiovascular risk factors effects on arterial wall.

P11.26
CARDIOVASCULAR RISK IN THE VIEW OF INDIVIDUAL RISK FACTORS
IN PATIENTS WITH MORE THAN 1 RISK FACTOR PRESENT
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Context and objective: It is known that patients, with a diagnosis of meta-
bolic syndrome (MetS) having three or more cardiometabolic risk factors
(CmRF) are associated with an increased cardiovascular risk. The study
aimed at evaluating the increase of the risk depending on a number of indi-
vidual CmRF while evaluating early subclinical atherosclerosis indicators
measuring arterial markers, such as PWV and Aix, as well as eGFR.
Results: A total of 530 patients with at least two CmRF according to the NCEP
ATP III metabolic syndrome definition were screened for the assessment of
subclinical atherosclerosis (measuring PWVradial, PWVfemoral, AixH@HR75),
as well as eGFR (using the MDRD formula). A correlation between AixH@HR75
and eGFR (Pearson Correlation Coef. 0.435, p < 0.001) was found. Between
the groups with two, three or four CmRF, increasing PWVradial (ANOVA,
p < 0.032) (Figure 1), decreasing AixH@HR75 (p < 0.01) and deteriorating eGFR
(p < 0.01) (Figure 2) with an increasing number of CmRF were noted. The
difference in PWVfemoral between the groups was not statistically significant.
Conclusion: For CVD risk prediction, every individual trait and a number of
traits of CmRF must be considered. While Aix increases, eGFR decreases with
an increasing number of CmRF. Affected arterial markers were detected in
patients with just two CmRF and further worsening was observed with each
additional factor, suggesting that individual CmRF is important when
defining the CVD risk for patients with or without MetS.

P11.29
THE COMPARISON OF ENOS MUTATION T786C AND ITS RELATIONSHIP
WITH ARTERIAL STIFFNESS
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Background: Arterial stiffness represents a strong predictor of the cardio-
vascular events and mortality, but seems to be influenced by eNOS mutations
(responsible for alteration of NO release).
Purpose: to investigate the relationship between T786C mutation and arte-
rional rigidity. Material and method 70 patients were investigated (63.4%
females), mean age 59.01 ± 11.01 years, without significant differences
between genders. Genetic polymorphism of T786C (using PCR method),
and arterial rigidity (using a TensioMed™Ateriograph) were determined.
Results: The distribution according to the presence of genotypes was: 49.3% were
negative (TT), 33.8% heterozygous (CT) and 16.9% homozygous (CC).
Globally, there was significant difference of the PWV values between
the relationship was also present in women (for PWVAo, CC genotype women
had 17.24% vs 34.46% CC patients vs 9.75% vs 18.11% CT patients showing higher levels of
AixAo (42.71 m/sec in CT patients vs 9.75 m/sec in TT patients (p < 0.005). Even though statistical significance was not reached for the rest of the parameters, an ascending trend can still be noticed, CC
in comparison with CT, respectively) patients showing higher levels of
PWVAo (42.71 ± 15.24 vs 37.97 ± 17.24 vs 34.46 ± 18.11, p = NS) , Aixb
(15.68 ± 31.33 vs 13.1 ± 26.85 vs 2 -0.7 ± 31.96, p = NS). In the same time, the
relationship was also present in women (for PWVAo, CC genotype women

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