

8. Intradialytic Hypertension and Its Association with Nitric Oxide Level Changes

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Conclusion: The present study demonstrates that low blood pressure leads to increase in pain perception and this is independent of circulating level of β -Endorphin.

Keywords: β -Endorphin, Pain perception, Threshold, Tolerance, Volunteers

A17402 MID-REGIONAL PROADRENOMEDULLIN PREDICTS REDUCED BLOOD PRESSURE AND GLUCOSE ELEVATION OVER TIME DESPITE ENHANCED PROGRESSION OF OBESITY MARKERS

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Objectives: Elevated plasma levels of the vasodilating hormone adrenomedullin (ADM) predict cardiovascular disease and have been associated with hypertension and obesity. We aimed to examine the independent relationship between ADM and the progression of cardiometabolic risk factors during long-term follow-up.

Methods: We studied mid-regional pro-adrenomedullin (MR-proADM) in fasting plasma in 3298 subjects from the population-based Malmö Diet and Cancer Study-Cardiovascular cohort, re-examined after 17 years, and related baseline MR-proADM to cardiometabolic risk factors cross sectionally and longitudinally.

Results: At baseline, after full adjustment, each standard deviation (SD) increment of MR-proADM was independently related to (beta \pm standard error, P-value) higher systolic blood pressure (SBP) (0.956 ± 0.319 mmHg, $P = 0.003$), body mass index (BMI) (0.912 ± 0.061 kg/m², $P = 1.42 \times 10^{-48}$), waist (2.28 ± 0.158 cm, $P = 8.46 \times 10^{-46}$) and fasting blood glucose (FBG) (0.046 ± 0.018 mmol/L, $P = 0.01$). After full adjustment, including the baseline level of the risk factor whose degree of progression was studied, each SD increment of MR-proADM predicted significantly reduced progression of SBP (-1.170 ± 0.337 mmHg, $P = 0.001$) and FBG (-0.055 ± 0.023 mmol/L, $P = 0.015$), but greater increase of BMI (0.101 ± 0.051 kg/m², $P = 0.047$) and waist (0.600 ± 0.144 cm, $P = 3.1 \times 10^{-5}$).

Conclusion: Despite cross-sectional associations with higher levels of blood pressure and glucose, high levels of MR-proADM predict a slower progression of blood pressure and glycemia during long-term follow-up. Conversely, the cross sectional associations with higher levels of MR-proADM and obesity were paralleled by a faster progression of obesity markers over time. These results may be important for assessment of long term effects of therapies modulating levels of ADM.

Keywords: adrenomedullin, blood pressure, glucose, obesity

A17266 INTRADIALYTIC HYPERTENSION AND ITS ASSOCIATION WITH NITRIC OXIDE LEVEL CHANGES

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Objectives: Intradialytic hypertension is associated with increased morbidity and mortality, yet the mechanism is uncertain. Prior studies investigate imbalances in endothelial-derived vasoregulators nitric oxide, which these studies show conflicting results. The aim of the study was to investigate the association between intradialytic hypertension and the changes of nitric oxide level pre-to-post-dialysis.

Methods: We conducted a before-and-after experimental studies in hemodialysis unit of Mohammad Hoesin General Hospital Palembang including 12 hemodialysis subjects without (controls) and 12 with intradialytic hypertension (an increased systolic BP pre-to-post-dialysis ≥ 10 mmHg in $\geq 4/6$ consecutive HD sessions). The primary outcome was the changes of nitric oxide pre-to-post-dialysis, which was assessed in the 7th HD session, using ELISA. Dependent t-test was used to compare nitric oxide level changes.

Results: Baseline characteristics, comorbidities, and anti-hypertensive drug consumption were similar between groups. Compared with controls, nitric oxide level changes was significantly higher among subjects with intradialytic hypertension (14.21 ± 10.24 uM vs 6.45 ± 5.00 uM). The changes of nitric oxide level pre-to-post-dialysis between 2 groups showed mean difference of 9.14 ± 2.06 uM and 95%CI value was 4.87–13.41.

Conclusion: Intradialytic hypertension is associated with nitric oxide level changes. We propose that nitric oxide level changes pre-to-post-dialysis may partially explain the higher event rates observed in these patients.

Keywords: Intradialytic hypertension, nitric oxide

A17270 THE NEUROENDOCRINE PECULIARITIES OF ESSENTIAL ARTERIAL HYPERTENSION DEVELOPMENT

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Objectives: To investigate the potential role of neuropeptide Y (NPY) and vasoactive intestinal peptide (VIP) in the pathogenesis of essential arterial hypertension (EAH).

Methods: 25 patients with I-III stages of EAH and 14 practically healthy volunteers aged from 22 to 63 years were examined. The content of VIP and NPY in the blood plasma was determined by immuno-enzymatic methods using the Bachem Peninsula Laboratories, Inc. sets.

Results: We found a significant initial decrease in the levels of NPY in the plasma of all the examined patients with EAH. Depending on stage of the disease, it was shown that as EAH progressed, the plasma NPY level decreased from $1,532 \pm 0,386$ ng/ml to $1,054 \pm 0,148$ ng/ml. Level of activity of NPY was found to be inversely proportional to the degree of BP increase. Consequently, a decrease in the level of NPY stipulates higher figures of BP in patients with EAH, contributing to the further progression of the disease. However, the activity of this neuropeptide in plasma of patients with stage II was comparable to that of healthy volunteers and was $0,843 \pm 0,191$ ng/ml, which was significantly higher than in patients with stage III ($0,404 \pm 0,043$ ng/ml). That is, in the course of hypertension, compensatory normalization of VIP activity was observed at the stage of development of lesions of target organs, with the depletion of which irreversible disturbances of their function develop. The content of VIP in patients with "moderate" arterial hypertension ($0,393 \pm 0,057$ ng/ml) was significantly lower than in healthy volunteers.

Conclusion: We detected a dynamic decrease in the activity of NPY and VIP in patients with EAH which indicates the involvement of these regulatory peptides in the development of arterial hypertension.

Keywords: Essential hypertension, neuropeptide Y, vaso active intestinal peptide, endocrine

A17356 RELATIONSHIP BETWEEN NICOTINE METABOLITE CONFIRMED SMOKING STATUS AND METABOLIC SYNDROME IN 19,240 KOREAN FORMER-SMOKERS

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Objectives: Previous studies about the association between former-smokers and metabolic syndrome (MetS) have showed inconclusive results, which have been based on self-reported questionnaires. No study has also reported the relationship between nicotine metabolite confirmed smoking status and MetS in former-smokers. This study was performed to evaluate the relationship between urinary cotinine levels with prevalence of metabolic syndrome (MetS) in Korean former-smokers.

Methods: A total of 19,240 former-smokers (age, 38.7 ± 7.4 years; men, 90 %) included in Kangbuk Samsung Health Study and Kangbuk Samsung Cohort Study between 2011 and 2013 who had urinary cotinine measurements were enrolled. Cotinine-verified current-smoking was defined as urinary cotinine level of above 50 ng/mL.

Results: The overall prevalence of cotinine-verified current-smokers was 7.7% and the prevalence was higher in females than male (11.4% vs. 7.3%, $p < 0.001$). The overall prevalence of MetS was 15.2%, with rates of 16.5% for male and 3.3% for female. A multivariate logistic regression analysis adjusted for variables with univariate relationship showed that cotinine-verified current-smoking significantly increased the odds ratio (OR) for MetS compared to cotinine-verified never-smoking (OR[95% CI], 1.22[1.02, 1.47]). Furthermore, Urinary cotinine levels were significantly associated with MetS (1.04[1.00, 1.07]). These results remained significant only in male, although there was no gender interaction.

Conclusion: This study showed that urinary cotinine level and cotinine-verified current-smoking were associated with MetS in Korean former-smokers, suggesting that urinary cotinine could provide additional information on the assessment of cardiometabolic risk even in former-smokers.

Keywords: cotinine, metabolic syndrome, former smoker

A17369 APPLICATION OF CONTINUOUS NONINVASIVE ARTERIAL PRESSURE MONITOR IN PATIENTS WITH CARDIOVASCULAR DISEASES PLUS OBSTRUCTIVE SLEEP APNEA

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