mild stimuli such as salt feeding or low doses of ang II. These studies provide further insight into how the adaptive immune system promotes hypertension.

Keywords: Immunological memory; T cells; Cytokines; CD70

OR-3

Association of the metabolic syndrome and its components with the brachial-ankle pulse wave velocity

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Introduction: Brachial-ankle pulse wave velocity (baPWV) can reflect both central and peripheral arterial stiffness. Metabolic syndrome (MS) and its components may increase arterial stiffness and the risk of cardiovascular diseases. However, the correlation of MS and its components with arterial stiffness has not been well studied. The aim of this study was to investigate the correlation between MS and its components with the arterial stiffness by measuring baPWV in Spanish population with intermediate cardiovascular risk.

Methods: Cross-sectional study. 2384 participants of the MARK study were analyzed, aged 35 to 74 years (mean 61.3±7.7), 61.7% male. Measurement: Brachial-ankle pulse wave velocity was estimated by equation. Metabolic syndrome was defined according to the NCEP ATP III definition. Waist circumference, blood pressure (BP), fasting plasma glucose (FPG) and lipid profile were measured. The relationship between baPWV and MS and its components was analyzed.

Results: baPWV was significantly higher in subjects with MS (15.54±2.82) than in those without MS (14.96±3.07) ($p<0.001$ for both genders). By multivariate regression analysis, after adjusting for age, weight, height, antihypertensive drugs, lipid-lowering drugs and antidiabetic drugs, the baPWV maintained a positive association with the MS ($\beta=0.661$ and $\beta=0.666$; $p<0.001$) in both genders. Also, there is an association with the BP and FPG ($\beta=1.451$ and $\beta=0.602$; $p<0.05$) in females and with the BP and higher waist circumference ($\beta=1.664$ and $\beta=0.436$; $p<0.05$) in males. Low HDL-C and high triglycerides do not keep any association.

Conclusion: Metabolic syndrome was positively correlated with baPWV. The association of the MS and its components with baPWV differs by gender. Monitoring baPWV can be helpful to identify the early stage of arterial stiffness in those people with MS.

Keywords: Metabolic syndrome; Arterial stiffness; Vascular function

OR-4

Association between incidence of cardiovascular events and masked hypertension: a systematic review and meta-analysis

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Background: Masked Hypertension is recognized in individual who has elevated ambulatory blood pressure, but has normal office blood pressure. Little is known about long-term effect of this condition and risk of cardiovascular events is still unclear. We performed a systematic review and meta-analysis on the incidence of cardiovascular events in masked hypertension comparing to true normotension.

Methods: We comprehensively searched in databases of MEDLINE and EMBASE from their inception to December 2015. We used search terms including ''masked hypertension'', ''ambulatory blood pressure'', ''office blood pressure'', ''cardiovascular disease'', and ''cardiovascular events''. Inclusion criteria were published prospective observational studies that compared incidence of cardiovascular events between masked hypertension and normal blood pressure. We calculated pooled hazard ratio (HR) and reported the effect estimate with 95% confidence intervals (CIs) using random-effects model.

Results: Initial search revealed 136 full-text articles. Data was extracted from eight prospective observational studies, which were included in the meta-analysis. There was a significant increase incidence of cardiovascular events in masked hypertension with pooled HR of 1.87 (95% CI 1.52 - 2.31, $p<0.001$), compared with normal blood pressure. Funnel plot was done and did not suggest publication bias. Egger's regression test for publication bias was not significant (P=0.44).

Conclusions: Incidence of cardiovascular events is higher in patients with masked hypertension comparing with normal blood pressure. Future interventional studies should assess mortality benefits after treating masked hypertension.

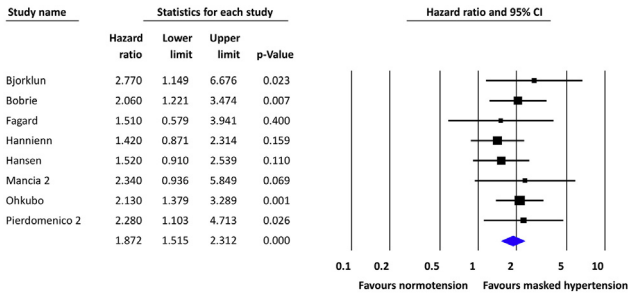

Figure 1.

Keywords: Masked hypertension; ambulatory blood pressure; meta-analysis; cardiovascular events

OR-5

Endothelial Nogo-B regulates sphingolipid biosynthesis to promote the transition from hypertrophy to heart failure during chronic pressure overload

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Recently we discovered that endothelial Nogo-B, a membrane protein of the ER, regulates sphingolipid de novo biosynthesis by inhibiting the activity of serine palmytoiltransferase (SPT), the rate limiting, to control vascular function. Endothelial dysfunction is an early event in the pathogenesis of heart failure, and has been correlated with cardiac hypertrophy and function. Here, we discovered that endothelial-derived sphingolipids, particularly S1P, protect the heart from inflammation, fibrosis and dysfunction following pressure overload. Our data show that SPT activity is upregulated in banded hearts in vivo as well as in TNF-alpha-activated endothelium in vitro, and that the loss of Nogo leads to further hyperactivation of SPT and S1P production; hence mice lacking Nogo-B, systemically or specifically in the endothelium, are resistant the onset of pathological cardiac hypertrophy. Furthermore, pharmacological inhibition of SPT with myriocin reinstates permeability, inflammation and heart dysfunction in Nogo-A/B-deficient mice to the WT levels, whereas SEW2871, an agonist of S1P1 receptor, markedly reduced myocardial inflammation in WT banded mice. Our study identifies a critical role of the endothelial sphingolipid biosynthesis, and its regulation by Nogo-B, in the development of pathological cardiac hypertrophy, and proposes a potential new therapeutic target for the attenuation or reversion this clinical condition.

Keywords: Cardiac Hypertrophy; sphingolipid; Endothelial dysfunction; pressure overload