Hypertension Edition

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Central hemodynamics and arterial health research insights

1,436 papers and abstracts
published between 2003-2024*

Here are some of the highlights.

Vascular Phenotyping | December 2022

Vascular Phenotypes in Early Hypertension

A research team led by Eleanor Murray used machine learning to analyze vascular characteristics in newly diagnosed hypertensive patients. Their analysis revealed heightened levels of arterial stiffness and central pressures in hypertensive patients compared to normotensive controls. Furthermore, distinct subgroups were delineated based on variables such as nocturnal and central blood pressure, percent dipping, and measures of arterial stiffness.

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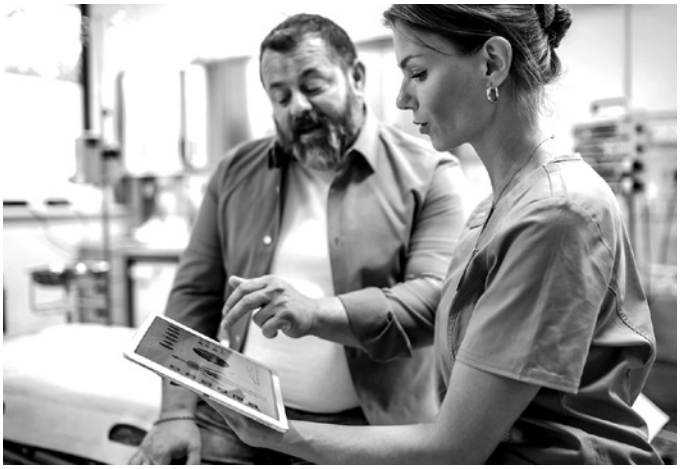

Masked and White-Coat | October 2020
Hypertension

Masked and White Coat Hypertension, the Double Trouble Of Large Arteries: A Systematic Review and Meta-Analysis

Christina Antza led a research team in conducting a systematic review and meta-analysis to probe the correlation between masked hypertension (MH) and white-coat hypertension (WCH) with arterial stiffness. Analyzing data from 2,352 subjects, they observed significantly heightened arterial stiffness, as indicated by pulse wave velocity, in both MH and WCH patients compared to normotensive groups. This discovery underscores the critical importance of monitoring arterial stiffness in hypertensive patients to effectively manage their condition.

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Hypertension in Athletes | December 2019

Weight Gain, Hypertension, and the Emergence of a Maladaptive Cardiovascular Phenotype Among US Football Players

Jonathan Kim and colleagues from the Emory Clinical Cardiovascular Research Institute conducted a comprehensive multiyear, multicenter, longitudinal observational cohort study involving collegiate US football athletes spanning three years. Their investigation revealed that athletes who experience weight gain and subsequent elevation in systolic blood pressure levels are predisposed to developing a pathological cardiovascular phenotype characterized by concentric left ventricular hypertrophy, arterial stiffening, and impaired left ventricular diastolic function.

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*As of May 2024, results from PubMed Central using "SphygmoCor" as the search term.

CONNEQT Health

Refractory Hypertension | May 2015

Refractory Hypertension: Evidence of Heightened Sympathetic Activity as a Cause of Antihypertensive Treatment Failure.

Tanja Dudenbostel and her team conducted a study focusing on refractory hypertension at the Birmingham Hypertension Clinic. Their findings revealed a prevalence of 2.7% for refractory hypertension within the resistant hypertensive population, indicating that antihypertensive treatment failure is relatively uncommon. When comparing those with controlled resistant hypertension, individuals with refractory hypertension exhibited elevated levels of urinary normetanephrine, heart rate, arterial stiffness, and systemic vascular resistance, suggesting heightened sympathetic tone as a potential underlying cause.

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Phenotyping for Target Organ Damage | November 2021

Comparison of Influence of Blood Pressure and Carotid-Femoral Pulse Wave Velocity on Target Organ Damage in Hypertension

Over a span of 5 years, Huijuan Chao helmed a study investigating the interplay among peripheral blood pressure, Carotid-femoral pulse wave velocity (cf-PWV), and target organ damage. Their research revealed a correlation between heightened peripheral blood pressure and an augmented risk of kidney damage. Conversely, elevated cf-PWV was associated with an elevated risk of left ventricular hypertrophy. These findings underscore the significance of stratifying patients based on their vascular phenotypes to better gauge risk levels.

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Melatonin Supplementation | November 2021

Essential Hypertension and Oxidative Stress: Novel Future Perspectives

Caterina Franco and her team delved into the effects of melatonin supplementation on hypertensive individuals. They initiated an open-label randomized study, initially assessing endothelial damage and vascular stiffness in hypertensive patients, before delving into the impact of melatonin supplementation. Their findings indicate a potential significance of melatonin in diminishing serum levels of total antioxidant capacity, consequently improving arterial stiffness.

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Prehypertension in Youth | April 2011

Cardiac and Vascular Consequences of Pre-Hypertension in Youth

In their investigation involving 723 adolescents and young adults aged 10-23 years, Elaine Urbina and her team found that both pre-hypertension and hypertension independently contribute to target organ damage, encompassing cardiac and vascular abnormalities. The researchers underscored that even slight elevations in blood pressure can exert substantial impacts on the cardiovascular system. They advocate for pediatricians to promptly identify and intervene in individuals with elevated blood pressure to avert long-term consequences. Furthermore, their findings accentuate the significance of contemplating pharmacologic intervention at lower blood pressure thresholds to forestall progression to sustained hypertension.

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Early Vascular Aging | October 2020

Arterial Stiffness and Hypertension in the Elderly

Stéphane Laurent and Pierre Boutouyrie from Université de Paris delved into the intricate relationship between aging and cardiovascular complications. Their study underscores the significance of arterial stiffness in elderly hypertensive patients, given its predictive capacity for cardiovascular events. With this in mind, the researchers advocate for the routine evaluation of arterial stiffness in hypertensive patients as part of clinical practice.

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