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First Review article on Central Aortic Blood pressure in India is published in Hypertension Journal authored by Dr.S.Ramasamy.

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Hypertension is vastly under-diagnosed and poorly treated, one of the major risk factors for the future development of cardiovascular disease. Measuring blood pressure in the arm is considered as a gold standard to assess the blood pressure numbers namely systolic and diastolic pressure. These two pressure parameters are considered as the major determinant of damage caused by hypertension to brain, heart, and Kidney. As the technology advances now there is a changed belief that the pressure at the Brain, heart, and kidney is not the same which is measured in the arm. Central blood pressure the pressure in the major vessel closed to all these organs now can be measured Non- Invasively.



Review Article

Central Aortic Blood Pressure: An Evidence-based Approach

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This article is published as Review Article in the Hypertension Journal October-December 2018 Vol.4. No.4. This journal is an official publication of CURRENT MEDICAL CONCEPTS and endorsed by The Indian society of hypertension and the world hypertension league. This article was authored by Dr.S.Ramasamy international expert in EECP treatment and currently serving as a research fellow in Chettinad University Chennai. The second author was Prof and Head of the department of cardiology Dr. M.Ravichandran from Tirunelveli Government Medical College and the Third author is Prof Dr.Pradeep G. Nayar senior interventional cardiologist from MIOT hospital Chennai.

Abstract

The conventional brachial blood pressure measurement remains as a principle tool to assess cardiovascular risks and monitor the effect of drug therapies. The convenience of measuring the blood pressure in the brachial artery and its cost-effectiveness made it a gold standard for measuring the blood pressure across the world. Even though the diastolic pressure and mean arterial pressure are close to constant throughout the arterial tree, the systolic pressure is not. The systolic pressure widely varies in different segments of the arterial system. This makes the measured brachial pressure inaccurate reflection of load in the central hemodynamics. All the major end organs such as the heart, brain, kidneys, and large arteries, which bear the brunt of hypertension, actually perceive the pressure on the central elastic arteries and certainly not on the brachial artery. Due to the complex mechanism of the presence of wave reflection, pulse pressure amplification, and arrival of the reflected wave to the aorta, the central aortic systolic pressure and brachial pressure were never identical. To add to this complexity, the drug has a differential effect on the brachial and central aortic pressure. In future, the management of hypertension will revolve around central blood pressure and central aortic pressure waveform analysis.

Key words: Central blood pressure, wave reflection, pressure amplification, arterial stiffness, cardiovascular events

This is the first article to be published in India to review in detail the data supporting central blood pressure as the gold standard and more accurate in predicting cardiovascular events than brachial pressure. This article also discusses in detail about the historical perspective of pulse wave analysis along with the concept of wave reflection and pressure amplification in the vascular tree. This review article will be informative for cardiologist and physician who wants to set up an advance hypertension clinic and base their antihypertensive medication individualised.

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