

# **Their Clinical Values of the Instruments to assess Pressure Wave and Its Reflection**

## **Central blood pressure and augmentation index**

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BP measurement using cuff at the brachial artery has been proved fundamental over the years in managing patients with hypertension and with high cardiovascular risk. However, the paradigm is changing as the understanding central hemodynamics is better than a traditional gold standard, the value of brachial BP, in assessment and management of cardiovascular risk. The arterial pressure wave is a composite of the forward outgoing wave modified by backward reflected waves. Wave reflection is created by impedance mismatch at the branch point of artery and very small resistance arterioles and the occurrence of reflected waves makes a progressive boost in wave amplitude and these amplification causes concurrent changes in shape along the arterial tree. Amplification differs in extent at peripheral vs. central artery and so these differing determine central systolic pressure and pulse pressure (vs. peripheral pressure). So far, several techniques have been developed for noninvasive analysis of pulse waveforms. Here I introduce device to measure central hemodynamics using applanation tonometry and transfer function, which are now most widely used in clinical studies.