

Diagnosis including Optimal Method to Measure BP in Patients with AF, Out-of-office BP (HBPM and ABPM) & Central Aortic Pressure

Hao-min Cheng, M.D., Ph.D.

**Professor, School of Medicine, National Yang Ming Chiao Tung University,
Taipei, Taiwan
Center for Evidence-based Medicine, Taipei Veterans General Hospital**

Currently, the management of high blood pressure (BP) is still based on BP measured at clinics (office BP) given it is time-honored and most clinical trials adopt this technique for scientific inquiry. Subsequently, out-of-office BP measurements including ambulatory BP and home BP monitoring have been developed. One of the most important roles of measuring out-of-office BP is to exclude white-coat hypertension. Many publications have reported findings of no increased cardiovascular risk with white-coat hypertension compared with true normotension. In addition, the NICE guidelines have recommended the use of ambulatory BP monitoring (ABPM) for detecting white-coat hypertension.

Another recently introduced technique, automated office blood pressure (AOBP), refers to BP measurements obtained using a fully automated electronic sphygmomanometer that records multiple BP readings with the patient resting undisturbed in a quiet place without medical staff being present. The story of AOBP parallels the increased interest in white coat effect (WCE) associated with office BP which is not seen with AOBP measurement and have been heightening after the publication of the landmark trial, SPRINT study.

The measurement of blood pressure (BP) aims to quantify the mechanical stress that BP exerts on the arterial tree, namely, the perpendicular force over the unit of area applied from the blood to the inner surface of the arterial wall. Despite major developments in the management of hypertension in the last half century, important issues related to BP measurement methodology remain astonishingly untackled and/or difficult to address, which are largely attributed to 2 interrelated but quite discrete fact, the well-known inherent physiological BP variability, which is subject-, time-, and arterial site dependent magnitude of the so-called pulse pressure (PP) amplification (aortic versus brachial BP difference). In response to such a physiological phenomenon, central BP monitoring has been developed and mushrooming on the market. In this talk, the history of BP

measurement and the practical use of these modality including the novel disruptive BP measurement technique, cuffless BP monitoring will be briefly presented and discussed.