

# Automated device that complies with current guidelines for office blood pressure measurement: design and pilot application study of the Microlife WatchBP Office device

George S. Stergiou<sup>a</sup>, Che-Wei Lin<sup>b</sup>, Chia-Ming Lin<sup>b</sup>, Shih-Lung Chang<sup>b</sup>, Athanasios D. Protogerou<sup>a</sup>, Dimitris Tzamouranis<sup>a</sup>, Efthimia Nasothimiou<sup>a</sup> and Ty-Minh Tan<sup>c</sup>

**Objective** Current guidelines for office blood pressure (BP) measurement recommend mercury devices, both arms measurement in the initial assessment and at least duplicate measurements at follow-up visits. This study presents the design and a pilot application study of an automated device that fulfils American, European, and International guidelines for office BP measurement.

**Design and functions** The Microlife WatchBP Office is a professional electronic mercury-free device with three function modes designed for: (a) initial assessment: triplicate automated simultaneous oscillometric both arms measurement at 60-s intervals and when there is a consistent interarm difference more than 20 mmHg systolic and/or more than 10 mmHg diastolic, the arm with the higher BP is indicated. (b) Follow-up assessment: triplicate automated oscillometric single arm measurements at 60-s intervals and their average is displayed. (c) Auscultatory measurement: by an observer using a stethoscope and a digital countdown BP display for patients with arrhythmias and other individuals in whom the oscillometric measurement is not accurate.

**Pilot application study** The 'initial assessment' mode was applied by three physicians in 63 patients (189 readings). Average interarm systolic BP difference was

$0.04 \pm 5.1$  mmHg and diastolic  $0.4 \pm 3.2$  mmHg. A value more than 10 mmHg interarm difference in nine systolic BP readings (5%) and three (2%) diastolic. No patient had a consistent interarm difference more than 10 mmHg in all three or two of the three readings.

**Conclusion** The Microlife WatchBP Office professional device fulfils current international requirements for office BP measurement and seems to overcome several limitations of this method when applied in clinical practice. *Blood Press Monit* 13:231–235 © 2008 Wolters Kluwer Health | Lippincott Williams & Wilkins.

*Blood Pressure Monitoring* 2008, 13:231–235

**Keywords:** automated device, clinic blood pressure, office blood pressure, oscillometric device, professional device

<sup>a</sup>Hypertension Center, Third University Department of Medicine, Sotiria Hospital, Athens, Greece, <sup>b</sup>Microlife Corporation, Nei-Hu, Taipei, Taiwan, Republic of China and <sup>c</sup>Microlife AG, Microlife AG, Widau, Switzerland

Correspondence to Dr George S. Stergiou, MD, Hypertension Center, Third University Department of Medicine, Sotiria Hospital, 152 Mesogion Avenue, Athens 11527, Greece  
Tel: +30 210 776 3117; fax: +30 210 771 9981;  
e-mail: gstergi@med.uoa.gr

Received 16 January 2008 Revised 18 February 2008  
Accepted 28 February 2008