

Validation of the Microlife Watch BP Office professional device for office blood pressure measurement according to the International protocol

George S. Stergiou, Dimitris Tzamouranis, Athanasios Protogerou, Efthimia Nasothimiou and Christos Kapralos

Objective To assess the accuracy of oscillometric and auscultatory blood pressure (BP) measurement taken using the professional electronic device Microlife Watch BP Office according to the European Society of Hypertension International Protocol.

Methods Thirty-three participants were included for the assessment of each measurement mode (oscillometric and auscultatory). Simultaneous BP measurements were taken by two observers (mercury sphygmomanometers) four times, sequentially with three measurements taken using the tested device. Absolute observer device BP differences were calculated. For each participant the number of measurements with a difference within 5 mmHg was calculated.

Results In phase 1 the device produced 32, 40 and 40 oscillometric systolic BP (SBP) measurements within 5, 10 and 15 mmHg, respectively and diastolic BP (DBP) 30, 40 and 43 (for auscultatory SBP 29, 42, 45 and DBP 33, 43, 45). In phase 2.1 the device produced 71, 90 and 96 SBP measurements within 5, 10 and 15 mmHg, respectively and DBP 71, 88 and 97 (for auscultatory SBP 72, 96, 99 and DBP 83, 96, 99). Twenty-four participants had at least two of their SBP differences within 5 mmHg and one participant

had no difference within 5 mmHg, and DBP 23 and three participants, respectively (for auscultatory SBP 29 and 0 and DBP 29 and 1). Mean SBP difference was -1.4 ± 6.3 mmHg and DBP -0.8 ± 6.0 mmHg (auscultatory SBP -1.8 ± 4.5 and DBP -0.4 ± 4.0).

Conclusion The Microlife Watch BP Office device used in the oscillometric or the auscultatory mode fulfills the validation criteria of the International protocol and therefore can be recommended for clinical use.

Blood Press Monit 13:299–303 © 2008 Wolters Kluwer Health | Lippincott Williams & Wilkins.

Blood Pressure Monitoring 2008, 13:299–303

Keywords: accuracy, European Society of Hypertension, International protocol, Microlife, office blood pressure, professional device, validation

Department of Medicine, Hypertension Center, Third University, Sotiria Hospital, Athens, Greece

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 6 March 2008 Revised 27 March 2008
Accepted 30 March 2008