

4A.04 OSCILLOMETRIC DETERMINATION OF THE ANKLE-BRACHIAL INDEX VERSUS DOPPLER

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Objective: The ankle-brachial index (ABI) is a simple and non-invasive measure for the assessment of peripheral arterial disease (PAD) and the prediction of cardiovascular risk. Its wide clinical application however is limited by the need for specialized equipment and the time required for its derivation. This study validated automated ABI measurement by a professional oscillometric blood pressure monitor (Microlife WatchBP Office ABI) compared to the reference Doppler method.

Methods: Sixty-two patients (mean age 62.6 ± 11.6 years, 33 men) with various cardiovascular risk profile (hypertension 84%, diabetes 32%, dyslipidemia 69%, smoking 13%, cardiovascular disease 21%) who attended a hypertension outpatient clinic were included in the study. ABI was measured manually by Doppler (single measurement) and by the oscillometric device (triplicate simultaneous measurements) in randomized order.

Results: Mean ABI was slightly higher by the oscillometric method (first measurement) compared to Doppler (1.10 ± 0.18 vs. 1.06 ± 0.20 respectively, $p = 0.001$). The correlation coefficient between the Doppler and the oscillometric ABI was 0.81, 0.85 and 0.87 for single, average of two, and of three oscillometric readings respectively ($p < 0.001$ for all). The mean \pm SD difference between Doppler and oscillometric ABI (first reading) was 0.04 ± 0.12 (0.03 ± 0.10 for average of two readings; 0.03 ± 0.09 for three). The oscillometric device failed to measure ABI in one leg of two patients (both with Doppler ABI < 0.9). The sensitivity and specificity of the oscillometric device to diagnose legs with PAD (defined as Doppler ABI < 0.9) was 85% and 97% respectively. Average time for ABI derivation was 11.1 min with Doppler vs. 4.2 min with oscillometry.

Conclusions: These results suggest that automated ABI determination using the professional oscillometric device Microlife WatchBP Office ABI is a quick, easy and reliable screening test for the detection of PAD.

4A.05 A NEW PROGRAMMABLE HOME BLOOD PRESSURE MONITORING DEVICE FOR THE ASSESSMENT OF NIGHTTIME BLOOD PRESSURE OF TOTAL 40 NORMOTENSIVE SUBJECTS

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Objective: Recent evidences indicate that both ambulatory blood pressure monitoring and home blood pressure monitoring are more useful than the measurement of office blood pressure for evaluating cardiovascular risks in subjects with hypertension. The major advantage of ambulatory blood pressure monitoring over home blood pressure monitoring is the ability to measure night time blood pressure and ambulatory blood pressure during the day. A newly developed, programmable home blood pressure monitoring device (HEM-5041, OMRON Healthcare, Kyoto, Japan) can record blood pressure up to 600 times and measure night time blood pressure automatically.

Design and Methods: To validate the utility, feasibility and safety of this device, we measured blood pressure by home blood pressure monitoring using HEM-5041 and by ambulatory blood pressure monitoring and compared the values in healthy volunteers.

Results: A total of 40 participants (28 men and 12 women; age ranging from 21 to 47, averaged age was 24.9 ± 0.8 years) were enrolled in this study. Average height, body weight, and body mass index were 168.2 ± 1.2 cm, 61.7 ± 1.5 kg, and 26.7 ± 0.4 kg/m², respectively. Night time blood pressures did not significantly differ between home blood pressure monitoring and ambulatory blood pressure monitoring. However, as compared with ambulatory blood pressure monitoring, daytime blood pressures, coefficients of variation for systolic blood pressure, diastolic blood pressure, and pulse rate, and the % night time fall in these variables were significantly lower with home blood pressure monitoring. The results of a questionnaire survey indicated that the subjects were more comfortable when blood pressure measured by home blood pressure monitoring than by ambulatory blood pressure monitoring, whereas the quality of sleep was similar.

Conclusions: Our results suggest that HEM-5041 is useful for evaluating night time blood pressures as well as night time blood pressure falls, without causing clinically significant discomfort.

4A.06 IN 2009, THE FRENCH GP MORE OFTEN PRACTICE HOME-BLOOD PRESSURE MEASUREMENTS THAN IN 2004, WITHOUT FULL COMPLIANCE WITH THE RECOMMENDED METHODOLOGY

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Objectives: Main: to assess the daily implementation of home blood pressure measurement (HBPM) by French general practitioners (GP) in 2009. Secondary: to assess a) the evolution of this implementation between 2004 and 2009; b) the perceived benefits and limitations of the method c) compliance to the French (HAS 2005) and European (ESH 2007) methodological guidelines in 2009.

Methods: Two phone surveys on a representative random sample of French GPs were performed in 2004 (n = 540), then from April 2008 to March 2009 (n = 801).

Results: 511/500 participated in 2004 and 2009, respectively, including 214 taking part in both surveys. In 2009, the study participants used HBPM more frequently as compared to 2004 (occasionally; vs %, p = ; majority of patients: vs %, p = ; never: vs. p =). 74% from the 58 GPs who didn't use HBPM in 2004, were using HBPM in 2009. 153 from 156 former users in 2004, still used HBPM in 2009. In 2009, ESH methodology was still rarely used (3% of the users), HAS more frequently (33%), with however an incomplete adherence to the proposed methodology (at least 3 days of measurements AND computation of the mean AND upper-arm cuff: 12%), and exceptionally total (same conditions AND written report, after 5 minutes rest, before breakfast and after diner: < 1%). In 2009, the still non-users highlighted a lack of device reliability (53%), patient anxiety (29%). Among users, the expected benefit was firstly the detection of a white-coat effect (70%), treatment titration (36%), diagnosis (25%), a better compliance (14%). Masked hypertension detection (2%) and prognostic value (0.7%) were marginal.

Conclusion: Despite an increased HBPM use after the guidelines publications, the recommended methodology was only poorly used, making its diagnostic and prognostic values questionable in this setting.

4A.07 BLOOD PRESSURE CONTROL IN TREATED HYPERTENSIVES: RESULTS FROM DIGIT (STUDIO ITALIANO SULLA GESTIONE DELL'IPERTENSIONE) A LARGE OBSERVATIONAL STUDY ON ITALIAN TREATED HYPERTENSIVES

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Background: BP control is known to be limited worldwide. This has serious consequences for public health because in hypertensive patients an uncontrolled BP is associated with a much greater incidence of cardiovascular events, particularly stroke.

Aim and Methods: Aim of the present study was to determine the rate of BP control in treated hypertensive patients under general practitioner care. Data were collected on 8.572 individuals from all Italian regions. Clinic BP was measured by standard methodology in a sitting position first after 5 min of rest and then few minutes later. Data were complemented by patients' history, physical examination and other information among which current and previous antihypertensive treatment and use of self-BP measurements at home.

Results: Male prevalence was 54.1% and mean age (\pm SD) for the group as a whole 64.3 ± 10.5 years. Based on the 1st measurement BP control ($< 140/90$ mmHg) was seen in 26.6% of the patients the rate being much lower for systolic than for diastolic BP (29.2% vs 56.9%). Compared to the data provided by the 1st measurement, BP control was more frequent when data obtained with the 2nd measurement were considered: systolic/diastolic BP 33.5%; systolic BP 35.9%; diastolic BP 61.3%. BP control was significantly more common in individuals reporting use of self BP measurement (61.2% of the overall sample, $p = 0.04$). In diabetic patients (n = 2007) the higher BP control recommended by guidelines ($< 130/80$ mmHg) was only very rarely present, with only a slight improvement for the 2nd as compared to the 1st BP measurement (4.4% and 5.5%, $p < 0.001$).

Conclusions: In treated hypertensive patients under care by Italian general practitioners BP control continues to remain uncommon. The tighter BP control recommended for diabetic patients is only exceptionally achieved. More favourable figures, however, are obtained for the 2nd BP measurement, indicating that basing conclusions on a single measurement only may overestimate the size of the phenomenon.