HYPERTENSION.

There is still debate over whether subjects with white coat hypertension (WCH) have increased target organ damage compared to normotensive controls (NT) with similar ambulatory blood pressure (BP). Aim of this study was to investigate whether this may be due to a selection bias. We studied 117 newly treated hypertensives from the HARVEST who underwent two ambulatory BP monitoring (ABPM) 3 months apart and M-mode echocardiography, and 95 NT. Data were adjusted for confounders. At 1st ABPM, 90 subjects (15.9%) were classified as WCH (mean daytime BP < 130/80 mmHg). Their 24h BP was similar to that of the NT (118±1/73±1 vs 117±1/72±1 mmHg, ns), but their left ventricular mass index (LVMi) was greater (89±2 vs 82±2 g/m², p<0.001). At 2nd ABPM, only 38 of the 90 subjects were still WCH (24h BP-118±1/71±1 mmHg, ns vs NT), while in the others 24h BP rose beyond the WCH limit (128±1/73±1 mmHg, p<0.001/0.001 vs NT). In the 38 subjects with WCH at both ABPMs, LVMi (89±3 g/m²), wall thickness (18.0±0.2 mm) and relative wall thickness (0.36±0.01%) were still greater than in the NT (82±2 g/m², p<0.03; 17.0±0.2 mm, p<0.005 and similar to those in the 52 subjects no longer WCH (88±2 g/m², 18.5±0.2 mm and 0.38±0.01%, p=all ns). Diastolic diameter was similar in the 3 groups. Due to a regression towards the mean, 58% of the WCH could no longer be classified as such at repeat ABPM, indicating that the current diagnosis of WCH is subjected to a selection bias. Cardiac remodeling was present also in the subjects confirmed WCH at repeat ABPM, suggesting that the WCH effect has an actual impact on target organ damage.

Key words: ambulatory monitoring, white coat effect, borderline hypertension.

C070

REPRODUCIBILITY OF THE CIRCADIAN VARIABILITY BY 24-H ABPM IN ESSENTIAL HYPERTENSION (EH)

The aim of the study was to assess the reproducibility of the 24-h blood pressure circadian profile defined by current criteria using ABPM. Forty never-treated mild-to-moderate EH of both genders (22 males, 16 females), mean age 51.8±15.5 years, visited in Hypertension Units of 6 Community hospitals consecutively included. ABPM was measured using invasive oscillometric device (SpaceLabs 90207) in baseline conditions. After one month without any drug treatment ABPM was repeated in the same environmental conditions. BP was registered at 20 minutes intervals for the 24-h, including waking or daytime period and sleeping or nighttime period. These periods were defined in three different approaches: I) individualized (patient's report); II) fixed narrow windows (daytime: 8:00 to 22:00; nighttime 0:00 to 6:00); and III) fixed wide windows (daytime: 7:00 to 22:00; nighttime 23:00 to 7:00).

Mean values and SD of SBP, DBP and HP of both periods were obtained for all three approaches. The diurnal profile (D) was defined by nighttime reduction of both SBP and DBP higher than 10%. When reduction was lower than 10% were defined as non-dippers (ND). The reproducibility of mean daytime and nighttime BP values was similar for all criteria (r=0.6 for SBP and r=0.7 for DBP, p<0.001). However, 5 patients (12.5%) changed the circadian profile after one month when patient's report were used to define D and ND profiles. Using fixed narrow windows 6 patients (15%) changed, and 9 patients (22.5%) changed their profile by using fixed wide windows. We conclude that despite acceptable reproducibility of both daytime and nighttime BP mean values, methods used to arbitrarily define the circadian profile are not reproducible nor reliable. The concept of diurnal and non-dipper profile should be revised.

Key words: Essential Hypertension, Ambulatory Blood Pressure Monitoring, Circadian Profile.

C071

CAN SELF-MONITORING OF BLOOD PRESSURE AT HOME REPLACE AMBULATORY MONITORING IN THE ASSESSMENT OF THE WHITE COAT EFFECT?

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This study was designed to investigate whether home blood pressure (HBP) is a reliable alternative to ambulatory blood pressure (APB) for the detection of the white coat effect (WCE). Hypertensive patients were randomised to measure HBP for 2 weeks (6 workdays) or APB for 24 hours. The ambulatory measurement was performed first. Blood pressure (BP) was measured in the beginning and the end of the study. Subjects had a difference of ≤20 mmHg systolic and ≤10 mmHg diastolic BP between APB and HBP, and BP was classified as clinic reactors. A total of 189 patients completed the study (57% men, mean age 52±11.5 [SD] years, 42% on antihypertensive treatment). There was no difference in the magnitude of WCE assessed using the ABP (6.8±13.7/4.7±7.8 mmHg, systolic/diastolic) or the HBP method (5.4±13.1/3.6±3.4) (mean discrepancy -1.5±11.7 mmHg, 95%CI -3.2±0.2, for systolic and 0.6±7.0, 95%CI -0.1±1.9 for diastolic BP). A strong association existed between WCE calculated using the HBP or the APB method (r=0.80±0.59 systolic/diastolic, p<0.001). No difference existed between treated and untreated patients in the magnitude of WCE assessed using either of the two methods. The proportion of patients classified as clinic reactors was identical using the HBP or the APB method (25.5%). Agreement between methods in the classification of clinic reactors was found in 147 cases (78%) (28 with and 119 without WCE). The sensitivity, specificity, positive and negative predictive value of ABP and HBP method to classify clinic reactors correctly (ABP method used as the standard) were 57% (95%CI 43%, 71%), 85% (79%, 91%), 57% (43%, 71%) and 65% (70%, 91%), respectively. These results indicate that HBP is not appropriate as an alternative to APB diagnostic test in the detection of WCE. Nevertheless, HBP appears useful as a screening test for the detection of this phenomenon and on the long-term followup of both untreated white coat hypertensives and treated patients with the WCE.

Key words: white coat effect, white coat hypertension, home blood pressure, ambulatory blood pressure, blood pressure measurement

C072

WHICH IS THE BEST STRATEGY TO DIAGNOSE HYPERTENSION BASED ON HOME, AMBULATORY OR CLINIC BLOOD PRESSURE MEASUREMENTS?

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This study was designed to investigate whether self-monitoring of home BP (HBP) or ambulatory BP (ABP) are reliable alternatives to the traditional strategy based on succeeding clinic blood pressure (CBP) measurements on succeeding visits, for the diagnosis of hypertension. Newly referred patients with diastolic CBP 90-115 mmHg untreated, were evaluated using CBP in 5 clinic visits over 3 months. HBP on 6 workdays between 1st and 2nd clinic visit, and ABP on 2 occasions before and after HBP monitoring. Hypertension was defined as (a) diastolic CBP ≥90 mmHg on final clinic visit or (b) ≥115 mmHg on 3rd visit), or (c) average awake ABP of two recordings ≥120 mmHg. Of 63 patients recruited, 43 were followed for 3 months, 7 were treated at visit 3 or 4 according to the CBP strategy and were withdrawn. Mean age was 49±9.1 [SD] years (48% men). Hypertension was diagnosed in 27 patients (54%) according to the CBP strategy, and in 28 (56%) and 25 (52%) on the basis of ABP and HBP measurements respectively (p=NS). Agreement among all three methods was found in 33 cases (56%) (19 with and 14 without hypertension). Agreement between CBP/ABP was found in 39 cases (78%), CBP/HBP in 41 (82%) and ABP/HBP 36 (72%). The sensitivity, specificity, positive and negative predictive value of ABP diagnosis of hypertension correctly (the CBP method used as the standard) were 81% (95%CI 61%, 94%), 74% (52%, 90%) and 79% (56%, 92%) respectively and of HBP 83% (62% 94%), 83% (91%, 95%) and 85% (95%, 96%). The HBPS strategy appeared advantageous in terms of cost effectiveness, the ABP strategy being the most expensive. In conclusion, the ABP and the HBP strategy can reliably diagnose or exclude hypertension in as many as 80% of cases. However, incorrect diagnosis is uncommon with either of the two strategies. The HBP strategy appears the most cost-effective strategy in the diagnosis of hypertension.

Key words: home blood pressure, ambulatory blood pressure, diagnosis of hypertension.