of available data suggests, however, that in children, at variance with adults, day time ABP is no lower and sometimes slightly higher than OBP (J Hypertens 2009;27:1719–42). The aim of the present study was to compare OBP with ABP in children of different age, based on the working hypothesis that the relation between OBP and ABP may differ within age.

Method: We retrospectively compared OBP (S and D) and mean 24 hrs, day and night ABP in 440 individuals aged 4–18 yrs (11.8y ± 3.8; 253 M) divided in 7 age groups 2 years apart. All individuals diagnosed as hypertensive,180 (41%) on antihypertensive treatment. Data were statistically analized by ANOVA. Results: We found a specific, and statistically significant ($p < 0.0002$ for SBP and < 0.0001 for DBP), pattern among groups with ABP being higher than OBP in children < 10 years old and equal or lower in older. Tables hereafter show the distribution of 24 h ABP differences for S and D in respect to office value. No gender difference was observed and the same results were found both during the day and night. Conclusions: In younger children ABPM measures higher BP values than the office measurements, while the pattern in older children is more similar to that of adults (office higher than ABP). It can be speculated that younger children either are more sensitive to the discomfort caused by ABPM or their higher level of activity is responsible for the reported pattern.Whatever the interpretation, it is of paramount importance to keep this age specific pattern into consideration when using ABPM to diagnose hypertension and to control the efficacy of the treatment in this age group.

8C.04 INTER ARM DIFFERENCES CAN ONLY BE DETERMINED ACCURATELY WHEN MULTIPLE MEASUREMENTS ARE PERFORMED ON BOTH ARMS SIMULTANEOUSLY WITH AN AUTOMATIC OSCILLOMETRIC DEVICE

F.W. Lohmann[1], S. Eckert[2], W.J. Verberk[3]. *[1]Department of Internal Medicine, Neukölln Hospital, Berlin, Germany, [2]Heart and Diabetes Center Northrhine-Westphalia, Department of Cardiology, University Hospital Bochum, Bad Oeynhausen, Germany, [3]Department of Research and Development Microlife Corporation, Taipei, Taiwan*

Background: Screening for inter arm differences (IADs) of blood pressure (BP) at each first visit is recommended by many guidelines. However, the method of how this should be performed is much less clearly described.

Objective: The present study aimed at comparing two methods for double arm measurements: 1) conventional measurement (CM) and 2) simultaneous automatic measurement (SAM).

Methods: 118 patients with two or more cardiovascular risk factors and a mean age of 59 ?b 17 years were referred to two internal clinics.

CM was performed with a validated aneroid manometer in sitting position on the right and left arm subsequently and v.v. SAM was performed three times in sitting and standing position using a validated automatic oscillometric device (WatchBP Office, Microlife, Taipei, Taiwan) equipped with two cuffs for double-arm measurements.

Results: Systolic BP values were significantly higher at the first measurement than at the second for all three BP measurement methods. The average absolute IADs were significantly higher ($p < 0.01$) for CM (4.9/3.7 mmHg) than for SAM in sitting (3.7/3.1 mmHg) and standing (4.4/3.4 mmHg) position for systolic and diastolic pressure, respectively. The standard deviations of IADs were significantly higher ($p < 0.01$) for CM (4.1/3.1 mmHg) than for SAM in sitting (3.2/2.5 mmHg) and standing (3.9/ 2.9 mmHg) position for systolic and diastolic pressure, respectively.

Conclusions: SAM provides smaller and more reproducible IADs than CM. As BP is constantly fluctuating and manual measurements are more liable to observer bias SAM is most likely to provide a better estimation of a patient¡¦s true IAD than CM.

8C.05 RELATIONSHIP BETWEEN NOCTURNAL BLOOD PRESSURE PATTERNS AND DAYTIME BLOOD PRESSURE VARIABILITY IN THE SPANISH AMBULATORY BLOOD PRESSURE MONITORING REGISTRY

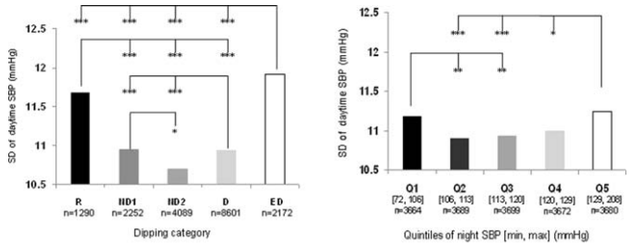
G. Bilo[1,2], S. Hoshide[1,3], A. de la Sierra[4], J.R. Banegas[5], M. Gorostidi[6], J. Segura[7], L.M. Ruilope[7], G. Mancia[2], G. Parati[1,2]. *[1]Dept. of Cardiology, Istituto Auxologico Italiano, Milan, Italy, [2]Dept. of Clinical Medicine and Prevention; University of Milano-Bicocca, Milan, Italy, [3]Dept. of Cardiology, Jichi Medical University School of Medicine, Tochigi, Japan, [4]Department of Internal Medicine. Hospital Mutua Terrassa. University of Barcelona, Barcelona, Spain, [5]Department of Epidemiology and Public Health. Autonomous University, Madrid, Spain, [6]Department of Nephrology. Hospital San Agustín, Avilés, Spain, [7]Hypertension Unit, 12 de Octubre Hospital, Madrid, Spain*

Objective: Different abnormal patterns of nocturnal blood pressure (BP) including nocturnal hypertension, absent or excessive night-time BP fall, as well as increased short-term BP variability have been reported to be associated with an increased risk of cardiovascular events. However, it is not clear whether any relationship exists between different nocturnal BP patterns and daytime BP variability. The aim of the present study was to address this issue taking advantage of the large number of subjects included in the Spanish Ambulatory Blood Pressure Monitoring Registry.

Methods: We studied 18405 subjects (mean age: 52.7 ± 14.3 years, male 54%) not on antihypertensive medication for at least 2 weeks. Ambulatory BP monitoring was performed with Spacelabs 90207 devices. BP variability was quantified as standard deviation (SD) of daytime (10 a.m.-10 p.m.) values. Data were analyzed by different models, subdividing subjects into: 1) categories of day/night systolic(S) BP pattern [risers (R): < 0% nocturnal SBP fall, nondippers: 0–5% (ND1) and 5–10% (ND2), dippers (D): 10–20%, extreme dippers (ED): >20%] and 2) quintiles of mean night-time (midnight-6 a.m.) SBP. The differences between categories were assessed by means of an ANCOVA model adjusted for age, BMI, gender, smoking, diabetes, dyslipidemia, previous cardiovascular disease, renal insufficiency and mean 24 h SBP (Model 1) or mean awake SBP (Model 2). Post hoc analysis with Bonferroni correction was used for multiple comparisons.

Results: Significant differences in daytime SBP SD were found between day/night SBP fall categories ($p < 0.0001$) and between night-time SBP quintiles ($p < 0.0001$) (see Figure).

Conclusions: Untreated subjects with very high or very low nocturnal BP, as well as with ''riser'' and ''extreme-dipper'' SBP profile show increased short-term BP variability during the awake period even after adjustment for major confounders. This relationship may reflect an increased sympathetic activity in these subjects. Studies on the clinical relevance of these ambulatory BP patterns should thus not disregard such an association.



* - p<0.05; ** - p<0.01; *** - p<0.001

8C.06 IMPACT OF IMPROPER CUFF SIZE FOR HOME BP DEVICES ON THE PREVALENCE OF WHITE COAT AND MASKED HYPERTENSION

J. Mourad, M. Lopez-Sublet, S. Aoun-Bahous, F. Villeneuve, O. Jaboureck, C. Dourmap, C. Mourad, T. Denolle, J. Fourcade, E. Tison, J.P. Baguet. *Club des Jeunes Hypertensiologues, Paris, France*

Background: Masked hypertension has been associated with obese and overweight individuals; however, most studies do not mention the use of large cuffs for home BP measurements in patients with oversized arms. Our goal was to test the impact of cuff size on hypertension status in patients with oversized arms.

Patients and Methods: 53 treated hypertensive patients (mean age 60 ± 13 y; mean BMI 36 ± 5 kg/m^2 (range 25–48)) with an arm circumference >33 cm (range33–45 cms) have been included. After the office visit, they performed two cycles of home blood pressure measurements according to the French Society of Hypertension protocol with a standard cuff, and a large cuff, using the Microlife® BP A100 PLUS validated device. Home BP < 135/85 mmHg was the cut-off used to classify the patients in terms of BP control.

Results: Mean office BP was 143 ± 17/85 ± 11 mmHg. Home BP measurements were 141 ± 14 / 84 ± 11 mmHg and 134 ± 13 / 80 ± 10 mmHg with the standard and the large cuff respectively (mean difference 6.9 / 4.0 mmHg for SBP/DBP $p < 0.0001$). The prevalence of white-coat and masked hypertension with the 2 different cuffs is summarized in the figure.