POSTER SESSION

POSTERS' SESSION PS08:
INNOVATIVE TECHNIQUES AND DEVICES

PP.08.01 BLOOD PRESSURE TELEMONITORING EFFECTIVENESS IN PATIENTS WITH UNCONTROLLED HYPERTENSION, IMPACT OF ANXIETY AND DEPRESSION

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Objective: To estimate the efficacy of home blood pressure (BP) telemonitoring in patients with uncontrolled hypertension (UCHT) from specialized hypertension excellence center.

Design and method: 62 ambulant patients with prior diagnosis of UCHT were invited to assign into this pilot study with use of secure web-site designed for patient-doctor communication only. All patients signed the informed consents and filled in HADS. 37 patients were enrolled to the procedures of BPTM for 3 month follow-up period: 27 males (73%), 10 female (27%) 45 ± 9 years old in comparison to 25 hypertensive patients matched by age and sex (15 males and 10 females 48 ± 8 years old) randomized to usual care.

Parameter	BPTM (M±m)	Control (M±m) Usual care
Number of patients	37	25
Age, years	45±9	48±8
BMI, kg/m2	29,5±4	27,6±5
ofice SBP baseline, mm Hg	158±8	157±9
Office DBP baseline, mm Hg	89±9	90±7
Office SBP3months FU, mm Hg	134±6	148±9
Office DBP 3 months FU, mm Hg	78±7	85±8
24hSBP baseline, mm Hg	157±9	155±11
24hDBP baseline, mm Hg	88±7	85±7
24hSBP 3 months FU, mm Hg	131±5	145±10
24hDBP 3 monts FU, mm Hg	76±6	81±5
Anxiety≥8 points	20 (54%)	5(20%)
Depression≥8 points	10 (27%)	3(12%)

BP level changes were evaluated by office BP measurements initially, at 8 and 12 week visits in intervention group also confirmed by ABPM. Mean number of home BP self-measurements by subjects was 14 per week.

Results: Mean office BP level (158 ± 8/89 ± 9 mmHg) reduced to 134 ± 6/78 ± 7 mmHg ($p < 0,95$) after 3 months in BPTM group. In 35 cases (95%) target BP levels have been achieved at the end of follow-up period. Furthermore, 21(57%) subjects achieved BP targets at first 8 weeks and 14(38%) patients achieved target BP by the end of study. Truly resistant HTN was detected in 2 (5%) patients. Systolic BP level reduction was associated with male gender ($OR = 1,6$, $p < 0,05$), age ($r = –0,37$, $p < 0,05$) also with high levels of anxiety (8 points HADS or higher) – $r = 0,4$, $p < 0,05$ and depression (8 points HADS or higher) - $r = 0,5$ $p < 0,05$. Usual care group characterized by higher values of office BP at the end-point (157 ± 9/90 ± 7 to 148 ± 9/85 ± 8 mmHg) and lower levels in HADS scale.

Conclusions: Home BPTM is an effective method for clinical improvement in patients with UCHT. This method is can be even more effective in males, in younger age and in the presence of anxiety and depression.

PP.08.02 AUTOMATIC IMAGE ANALYZER TO ASSESS RETINAL VESSEL CALIBER (ALTAIR) TOOL VALIDATION FOR THE ANALYSIS OF RETINAL VESSELS

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Objective: To assess the reliability and validity of the tool Automatic image analyzer to assess retinal vessel caliber (ALTAIR) to analyze the vascularization of the retina and cardiovascular risk prediction.

Design and method: Cross-sectional of tools validation study. We included 250 subjects in total, aged 62 ± 9 years, 51% males. We have made a validation of reliability analyzing the intraclass correlation (ICC) intra observer, inter observer and inter device (compared with AVindex calculator) to the thickness, area and length of arteries and veins of the retina in 3 concentric circles from the disc in 120 retinographies. The concurrent validity was performed with 250 subjects and 497 retinographies, analyzing the relationship with age, blood pressure, parameters of vascular structure and function, renal function and cardiovascular risk estimated with scales.

Results: In the sample, the 32% are obese, 68% hypertensive and 17% diabetic. The interobserver ICC for thickness, area and length of veins and arteries ranged from 0.809 to length of arteries to 0.916 to veins area. The intra observer ICC for intra thickness, area and length of veins and arteries ranged from 0.640 for the length of the veins and 0.906 for the area of the arteries and the inter device ICC was for arteriovenous ratio (AVR) 0.887, thickness of arteries 0.590 and veins thickness 0.677. We found a moderate correlation of the age (r between 0.30 and 0.50, $p < 0.001$) with the retinal vascular parameters analyzed.
In multiple linear regression analysis after adjusting for age and sex, the association of AVR and arterial thickness with the diastolic blood pressure and albumin creatinine ratio and arterial area and length with systolic arterial blood pressure and carotid intima-media thickness remains. Also the thickness area and length of the vessels show an association with cardiovascular risk estimated SCORE scale.

Conclusions: The ALTAIR tool shows a good reliability in the concordance inter observers, intra observer and inter device measurements and a concordant validity to show an association with vascular parameters, target organ damage and cardiovascular risk.

PP.08.03 COULD FLOW MEDIATED SLOWING CONSTITUTE A METHODOLOGICAL ALTERNATIVE TO THE CONVENTIONAL ECHO-TRACKING FLOW-MEDIATED DILATION TECHNIQUE FOR THE EVALUATION OF ENDOTHELIAL FUNCTION?

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Objective: The Moens-Korteweg equation predicts changes in pulse wave velocity (PWV) following changes in arterial radius, therefore an increase in arterial radius, as seen in a reactive hyperaemia (RH) condition, should slow PWV over a given arterial segment. If this assumption is true, than the deceleration of PWV over the brachial artery (flow-mediated slowing – FMS) should be an equivalent signal of endothelial function during a conventional RH flow-mediated dilation (FMD) procedure. Our aim was to compare FMS with FMD after RH in healthy subjects, as part of a study that seeks to evaluate the clinical usefulness of FMS.

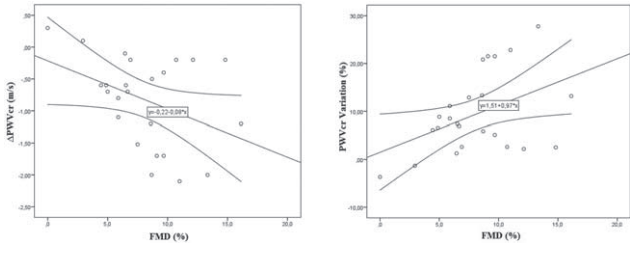

Figure 1. Correlation of FMS and FMD.

Design and method: Cross-sectional study including 25 healthy participants (72% females), mean age 21.12 ± 0.73 years. FMD and FMS were simultaneously measured at baseline and 1 min after a ischemia period. Ischemia was induced by inflating a cuff for 5 min on the right forearm, 50mmHg above each participant's systolic blood pressure. FMS was measured as the absolute (d) and percentual (%) change in carotid-radial PWV (PWV), measured with the Complior Analyse.