Results: In the whole hemodialysis population of participating centers including 735 patients, 440 (60%) were invited to participate in the study. Among these patients 119 patients (27%) refused to undergo ABPM recording. Reasons for refusal are detailed in the table. Among the 321 patients who performed the 48h ABPM recording, 29 patients (9%) did not complete it and the main reason for interrupting the recording were discomfort (41%) and device failure (34%). Frequent interruption of sleeping because of noise or discomfort was a symptom reported by 32% of patients, followed by itching (24%) and pain during the measurements (20%). The detailed list of symptoms is reported in the table.

Reasons for refusal	**N. (%)**
Fear of discomfort	30 (25%)
Measurement too long	22 (18%)
Logistic problems	17 (14%)
Previous negative experience	13 (11%)
Clinical reasons	12 (10%)
Other reasons	25 (22%)
Symptoms developed during the ABPM study	**N. (%)**
Itching	77 (24%)
Pain during the BP measurements	63 (20%)
Continuous pain during the whole procedure	11 (3%)
Inability to fall asleep or staying asleep	55 (17%)
Frequent interruption of sleeping because of noise or discomfort	102 (32%)

Conclusions: About 25% of hemodialysis patients consider 48h ABPM a laborious and discomforting test and prejudicially refuse to undergo it. Among patients who undergo 48h ABPM, itching and interruption of sleeping are complained by about 1/3 of patients. These figures are substantially higher than those reported in studies in the general population and in hypertensive patients and point to peculiar barriers at applying extended ABPM recordings in the hemodialysis population. Studies applying more tolerable instruments and a minimum set of measurements over a shorter time are clinical research priority for extending the use of ABPM in the hemodialysis population.

AUTOMATED ATRIAL FIBRILLATION DETECTION DURING ROUTINE BLOOD PRESSURE MEASUREMENT: DIAGNOSTIC ACCURACY OF THE OSCILLOMETRIC BLOOD PRESSURE MONITOR MICROLIFE BP B3 AFIB ADVANCED

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Objective: To evaluate the diagnostic accuracy of the oscillometric upper-arm cuff home blood pressure (BP) monitor Microlife BP B3 AFIB Advanced in detecting atrial fibrillation (AF) during automated BP measurement.

Design and method: Participants with permanent AF aged >60 years (AF group) and others with sinus rhythm (SR) matched for age and sex (control group) were recruited. Electrocardiography (ECG) recording and blood pressure (BP) measurements were simultaneously conducted twice for each participant. Using an AF specific diagnostic algorithm of the BP monitor, the rhythmicity of heart rate was evaluated three times during each automated BP measurement. When AF is detected in at least 2 of the 3 assessments, the device reports the presence of AF detection. A single wide-range cuff of the test device was used for arm circumference 22-42 cm.

Results: A total of 108 individuals were analyzed, (50%/50% with AF/SR, 59%/59% men, mean age [SD] 76±10.5/73±9.5 years for AF/SR, systolic BP 123.4±19.6/131.5±17.9 mmHg [p<0.01], diastolic BP 74.2±11.7/73.4±10.6 mmHg [p=NS]). False negative and false positive AF detection in AF and control group respectively are shown in Table. The sensitivity of the test device in detecting AF was 87%, specificity 100%, positive predictive value 100% and negative predictive value 88.5%.

Conclusions: These findings indicate that the Microlife BP B3 AFIB Advanced automated BP monitor equipped with an AF detecting algorithm with triplicate assessment of the cardiac rhythm during each automated BP measurement, has an exceptional diagnostic accuracy. Thus, this novel technology can be employed as a reliable screening tool for detecting asymptomatic AF in elderly adults during routine screening or long-term monitoring of treated hypertension.

Table. False negative and false positive AF detection during automated BP measurement.

	1st assessment	2nd assessment	1st or 2nd assessments
AF GROUP			
AF detected, N	48	46	53
AF not detected, N	6	8	1
CONTROL GROUP			
AF detected, N	0	0	0
AF not detected, N	54	54	54

VALIDATION OF A NOVEL PROFESSIONAL AUTOMATED AUSCULTATORY BLOOD PRESSURE MONITOR KOROT V2 DOCTOR IN GENERAL POPULATION ACCORDING TO THE AAMI/ESH/ISO UNIVERSAL STANDARD

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Objective: A novel automated auscultatory upper arm-cuff blood pressure (BP) monitor KOROT V2 Doctor was developed for professional use. This device is equipped with an electronic stethoscope integrated into the cuff to enable recording of Korotkoff sounds. These auditory signals are graphically displayed during the deflation process, offering to the healthcare professionals a visual tool for assessing the quality of each automated reading. The device was validated according to the Association for the Advancement of Medical Instrumentation/European Society of Hypertension/International Organization for Standardization (AAMI/ESH/ISO) Universal Standard (ISO 81060-2:2018) and its Amendment 1.2020-01.

Design and method: Participants were recruited to fulfil the age, sex, BP, arm circumference and cuff distribution criteria of the Universal Standard and its Amendment in a general population using the same arm sequential measurement method. Three cuffs of the test device were tested for arm circumference 23-28, 28-35 and 33-42 cm.

Results: Data from 85 individuals were analyzed (mean age 56.4±16.0 [SD] years, 50 men, arm circumference 23-42 cm). For validation Criterion 1, the mean difference ±SD between the test device and reference BP readings (N=255) was -1.3±6.0/1.5±5.0 mmHg (systolic/diastolic; threshold <= 5±8 mmHg). For Criterion 2, the SD of the averaged BP differences per individual (N=85) was 4.61/3.48 mmHg (systolic/diastolic; threshold <= 6.82/6.78 mmHg).

Conclusions: The KOROT V2 Doctor electronic device developed for professional use, which provides automated auscultatory measurements with visual display of the Korotkoff sounds, comfortably fulfilled all the requirements of the AAMI/ESH/ISO Universal Standard (ISO 81060-2:2018) in a general population and can be recommended for clinical use. This novel device offers potential additional advantages for clinical practice, as it simulates the gold standard manual auscultatory method and allows healthcare professionals to visually assess Korotkoff sounds during each measurement, allowing the rejection of poor-quality readings.

VITAMIN D AND INDICATORS OF AMBULATORY BLOOD PRESSURE MONITORING IN WOMEN WITH ARTERIAL HYPERTENSION IN THE EARLY POSTMENOPAUSAL PERIOD

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Objective: To assess plasma 25(OH)D levels and indicators of ambulatory blood pressure monitoring (ABPM) in women with arterial hypertension (AH) stage II risk 3 in the early postmenopausal period.

Design and method: We investigated 52 women with AH stage II risk 3 aged 52 (50; 54) years of age who are in the early postmenopausal period - group I. Serum level of 25(OH)D was determined by the immunoenzymatic assay. The level of 25(OH)D in the blood plasma was determined by enzyme immunoassay. In group I we identified subgroup IB (n=21) with vitamin D deficiency/insufficiency - level of 25(OH)D<30ng/ml and subgroup IA (n=31) without vitamin D deficiency.

ABPM was carried out with a Watch BP 03. Statistical analysis was performed by means of «STATISTICA 10.0».

Results: The level of 25(OH)D was lower (p<0,05) in subgroup IB (18,2±9,5 ng/ml) than in the comparable to subgroup IA (27,4±10,5 ng/ml). In subgroup IB, compared with subgroup IA, the values of mean night diastolic (DBP) were higher (p<0,05) (73,0 (69,0;79,0) mm Hg versus 68,8±7,4 mm Hg), time index (TI) DBP at night (14,3 (12,5; 33,4)%, versus 12.5 (0,0;12,5)%,), speed of morning rise DBP (16,5(11,0;22,0) mm Hg/hour versus 10,0(8,5;17,3) mm Hg/hour), systolic variability (SBP) during the day (36,0(29,0;43,0) mm Hg versus 25,0(22,0; 38,0) mmHg). TI DBP at night exceeded the threshold value in 42,9% of women in subgroup IB versus 17,2% (p< 0,05) of subjects in subgroup IA. Morning rise speed DBP in subgroup IB did not correspond to the norm in 81% of cases compared to subgroup IA – 37,9% (p = 0,004). Inverse moderate correlations were established in subgroup IB between the level of 25(OH)D in the blood plasma and a number of ABPM indicators: average night SBP (R =-0,37, p=0,004), TI SBP night (R=-0,42, p=0,04), average night DBP (R=-0,43, p=0,03), TI DBP night (R=-0,39, p=0,05).

Conclusions: In women with AH stage II risk 3 in the early postmenopausal period, with a deficiency/insufficiency of the level of 25(OH)D in the blood plasma, excess of a number of ABPM indicators was more common than with its optimal level.

ARTERIAL STIFFNESS AND LEFT VENTRICULAR HYPERTROPHY IN PATIENTS WITH WHITE COAT HYPERTENSION:

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Objective: White coat hypertension (WCHTA) is not a benign process as previously believed. In many cases they end up being true hypertensives. Little has been published on the index of arterial stiffness and pulse pressures, as well as central pressures in such patients.

To assess the arterial stiffness index, left ventricular hypertrophy and central pressures in patients with WCHTA and compare them with normotensive (PN) patients (P).

Design and method: MATERIAL AND METHODS: we studied 100 P with WCHTA and compared them with another group of 100 normotensive P in whom a study was performed with ABPM, an echocardiogram to assess hypertrophy and central pressures were measured (Central sys, Central diast), as well as the augmentation index (AI). The results were compared and shown below:

Results:

RESULTS:

DATA	SYSTOLIC	DIASTOLIC	Central systolic	Central diastolic	LV hypertrophia	AI	E/A mitral
WCHTA	138±5*	87±4*	128±5*	87±3*	30%*	21*	30%*
PN	110± 4	81±2	105±5	79±4	3	4	5%

*means p value les tan 0.05

Conclusions: P with WCHTA have higher blood pressures than those considered normotensive in both peripheral and central measurements. Likewise, these P have greater arterial stiffness than normotensives, more hypertrophy of the left ventricle and there is more diastolic dysfunction measured by the E/A index of mitral flow, which we will have to take into account when we encounter this type of P, since they also entail a greater cardiovascular risk.