Design and method: This observational program (held in the Russian Federation) involved 392 doctors (internists and GPs) which included 1969 patients whose hypertension was uncontrolled on combination antihypertensive treatment. Patients were previously treated with free-dose or fixed-dose combinations in 86% and 14% of cases, respectively. Implementation of the Programme had been approved at a meeting of the Inter-University Ethics Committee, protocol number 06–14 of 06/20/2014 (Moscow).

Results: Switching to a fixed-dose combination of perindopril arginine/indapamide 10/2.5 mg resulted in a mean reduction of 39.5 mm Hg in systolic BP and 18.7 mm Hg in diastolic BP after 3 months. The target BP (<140/90 mm Hg) was achieved in 76% patients. Patient adherence to treatment (assessed by the Morisky-Green scale) and well-being (assessed by a visual-analogue scale) increased significantly. The change in treatment was not only effective, but also safe. Adverse events were recorded in 28 patients (1.4% of the general study population), and down-titration was required in only 1 case, due to symptomatic hypotension. The magnitude of BP reduction and the rate of achievement of target BP were similar whether or not free- or fixed-dose combinations were used previously, and whether or not additional education of doctors and patients was provided; however, they were correlated with BP at baseline and duration of treatment. Predictors of failure to achieve target BP included: age, male sex, low adherence to treatment at baseline, a high score on the well-being scale, a higher BP level at baseline, high total cholesterol, body mass, heart rate, and low glomerular filtration rate.

Conclusions: Treatment regimen simplification using fixed-dose perindopril arginine/indapamide combination at full doses plays a major role in increasing treatment efficacy in hypertensive patients.

PP.25.05 EFFECT OF MEDITATION UPON ARTERIAL BLOOD PRESSURE

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Objective: Regarding the guidelines of the American Heart Association 2013 on the treatment of hypertension, meditation constitutes a „level of evidence B“, which means that “it may be considered as a therapeutic strategy for (pre)hypertensive patients”. In order to prove this, however, further research is required. The American Heart Association’s conclusion along with other case-studies listed in the bibliography, reflect the growing interest in meditation as an easy and affordable technique with few side effects.

Design and method: Here, we studied 113 publications related to meditation and it´s effect upon arterial hypertension. Firstly, research reveales that stress plays an important role in the development of essential hypertension. Therefore, stress-relief is directly linked to lower blood pressure. Stress-reducing effects of mediation were demonstrated in studies by measuring levels of stress hormones, skin resistance, heart rate variability and EEG. Patients reactions to stressful situations also showed improvements after the implementation of meditation as a coping strategy due to a decrease in blood pressure as response to stress tests. Thus, stress-reducing effects of meditation have been argued to play an important role in treatment of hypertension. In addition, it has been claimed that both, decreased sympathetic tone and changes in hormone levels, could lead to blood pressure lowering effects.

Results: On the one hand, published data of numerous studies show a significant reduction of blood pressure in pre-hypertensive and hypertensive patients through meditation. On the other hand, the majority of studies suffered from small patient numbers, poor study design and insufficient statistical analyses. Moreover, some of the results were inconsistent and, in some cases, even contradictory. Interestingly, descriptions of side effects of meditative practices were also found. We shall present a complete review of the available literature.

Conclusions: In conclusion, the effectiveness and safety of meditation as a sole therapeutic measure to lower blood pressure in (pre)hypertensive patients could not be proven at this point as distinct from the recommendations of the AHA. However, mediation could be accepted as a component of life-style modifications suggested like physical exercise, weight loss, reduction of sodium absorption and, if necessary, additional medication.

PP.25.06 ACUTE EFFECTS OF AEROBIC AND RESISTANCE EXERCISES IN INFLAMMATORY MARKERS IL-10 AND IL-1RA IN PATIENTS WITH RESISTANT HYPERTENSION: RATIONALE OF A RANDOMIZED, CONTROLLED TRIAL

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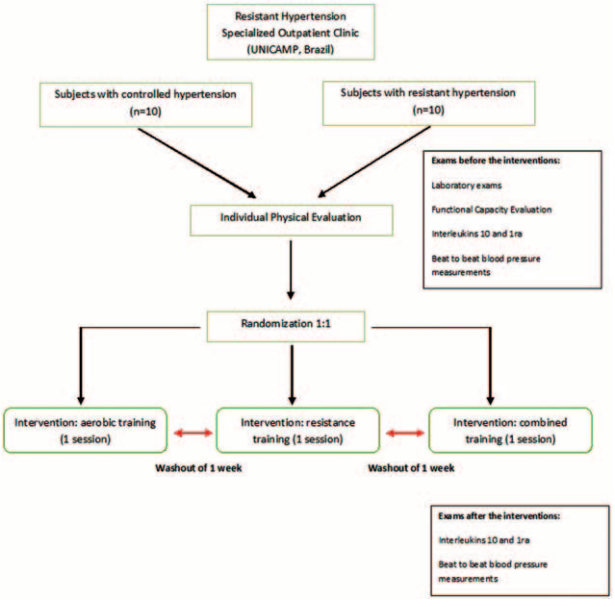
Objective: The role of regular physical activity on blood pressure (BP) and inflammatory process have been investigated in hypertension. This study aims to evaluate the acute effects of either aerobic, resistance or both combined exercises on inflammatory markers IL-10 and IL-1ra in resistant (RH) and controlled hypertensive (HT) subjects. Secondly, we will assess those effects on BP levels.

Design and method: This randomized, single-blind, crossover non-pharmacological intervention study will include 20 patients, 10 RH and 10 HT, who are regularly followed at the Outpatient Resistant Hypertension Clinic (UNICAMP, Brazil). This study will comprise two parts: (1) to determine the type and duration of each exercise individually for each volunteers, and (2) to perform all the three types of exercise in a crossover way in all subjects, which will consist of: 1) aerobic exercise: activity on a treadmill lasting 45 minutes with intensity of 50–60% of maximum heart rate obtained from ergometer test; 2) resistance exercise: 4 series of 12 repetitions of resistance exercises at moderate intensity (until moderate fatigue), for 45 minutes; 3) combined exercise: aerobic (25 minutes) + resistance (20 minutes), with an interval of 2 minutes between sessions totalizing 45 minutes. We will perform blood test before and after the interventions to assess inflammatory biomarkers IL-10 and IL-1ra. Also, we will determine the beat-to-beat BP levels (using the Finometer device).



Results: We expect that the acute practice of exercise modulates the inflammatory biomarkers, IL-10 and IL-1ra, and secondly, the BP levels.

Conclusions: This study may provide a better understanding of the acute mechanisms of this non-pharmacologic treatment in RH, in order to make this more effective in this high-risk population.

PP.25.07 EFFECTIVENESS OF A SMARTPHONE APPLICATION IN INCREASING PHYSICAL ACTIVITY AND DECREASE SEDENTARY LIFESTYLE. THE EVIDENT II STUDY

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Objective: The present study evaluates the effects of adding an APP in support of standardized counselling in order to increase physical activity and decrease sedentary lifestyle.

Design and method: A randomized, controlled, multicenter clinical trial was carried out. Six primary care centers in Spain. A total of 833 subjects from family practice offices were recruited through random sampling: 415 in the APP + counseling

group (APPG) and 418 in the counseling group (CG). Counseling on physical activity was given in both groups. The APPG subjects additionally received training in the use of an APP designed to promote physical activity and decrease sedentary lifestyle over a three-month period. Main outcomes and measures: Physical activity was measured with the 7-day Physical Activity Recall(PAR) questionnaire and an accelerometer, and sedentary lifestyle with Marshall sitting questionnaire. The measures were performed basal, 3 and 12 months.

Results: Participants were predominantly female in both APPG (n = 249; 60%) and in CG (n = 268; 64%), with a mean age of 51.4 (12.1) and 52.3 (12.0) years, respectively. Leisure time moderate/vigorous physical activity (MVPA) by 7-day PAR increased at 3 months in APPG (29 [95%CI:5 to 53] min/week; p = 0.02) but not in CG (17.4 [95%CI: -18 to 53] min/week; P = 0.38). However, both groups decrease at 12 months without differences between them. The accelerometer recorded a decrease in physical activity after three months in both groups, -55.3 (-75.8 to -34.9) in AAPG and -30.1 (-51.8 to -8.4) in CG of MVPA minute /week. At 12 months both groups decreased physical activity, but more in intervention group (MVPA decreased -41.7 (-75.1 to - 8.4) min/week (p < 0.05)). We did not found differences in Marshall sitting questionnaire between both groups at 3 or 12 months.

Conclusions: Physical activity, evaluated with the 7-day PAR, increased more in APPG than CG at 3 month, in reference to leisure time MVPA, although no difference were found when comparing the increase between the two groups at 3 or 12 months. Both groups decrease physical activity with accelerometer, more the intervention group. The intervention not modified the sedentary lifestyle.

PP.25.08 THERAPEUTIC DRUG MONITORING IN RESISTANT HYPERTENSIVES PREVIOUSLY TREATED WITH INVASIVE APPROACHES

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Objective: Renal denervation (RDN) and baroreflex activation therapy (BAT) are invasive therapeutic approaches for resistant hypertension (RH), indicated when antihypertensive drug therapy is inefficacious. Several reports have found an unsatisfactory response to these approaches; one of the factors called upon to account for the failure of these devices is the lack of therapeutic adherence. The aim of this study was to retrospectively evaluate the therapeutic adherence, using an objective assessment as the therapeutic drug monitoring (TDM), in a group of patients who have undergone invasive approach in previous years, either RDN or BAT, and correlate it with the answer to the invasive procedure.

Design and method: We retrospectively analysed 12 patients with RH (9 females). Before performing invasive procedure, all patients were considered adherent according to the physician intuition and the answers given to the Morisky questionnaire. Serum TDM, by Ultra High Performance Liquid Cromatography (UHPLC) method, was done during a routine follow up visit, after at least one year from the last invasive approach. A clinical response to invasive approaches was considered as a reduction in 24 h Ambulatory Blood Pressure Monitoring (ABPM) systolic blood pressure (SBP) of at least 10 mmHg at 12 months from the procedure. Patients were considered adherents (AD) if all the prescribed drugs were found or only one was not found; patients were considered non-adherents (NAD) if none of the prescribed drugs were found.

Results: 4 patients were AD and 8 NAD. In the whole sample a clinical response was found in 41% of the patients. Among AD the clinical response rate was 75%, whilst among NAD the clinical response rate dropped to 25%. No significant clinical and social differences were found between NAD and AD, but NAD had significant higher office SBP and 24 h ABPM SBP than AD (p < 0.05).

Conclusions: Lack of therapeutic adherence is associated to a limited clinical efficacy of invasive approaches in apparent RH. Our data underlines the importance of adherence therapeutic evaluation before and after performing invasive procedures, whose effectiveness can be undermined by poor therapeutic adherence.

PP.25.09 MASS ASSESSMENT OF VASCULAR AGE IN STUDENTS AS MOTIVATIONAL TECHNIQUE TO ACHIEVE LIFESTYLE CHANGES AMONG THE YOUTH

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Objective: Estimation of the motivational significance of instrumental assessment of vascular age in healthy students to improve the efficiency of student's health school in format of university dispensary system.

Design and method: They were examined 107 students (50 boys and 57 girls) with diagnostic system VaSeraVS-1500 (FUCUDA DENSHI & CO, LTD, Japan) in the framework of preventive action The University - the Territory of Health at the student's health center of StGMU. It was determined vascular age (VA) for information of students about availability of match or mismatch VA with their passport age, that is ranged from 21 to 23 years. Also evaluated the profile of risk factors. It was analyzed the indicators of development of educational module in Health's School groups formed depending on the fact of instrumental examination: 1 group -instrumentally surveyed (107persons) and 2 g.- instrumentally unsurveyed (98 persons). For the processing of data used packet of statprograms BIOSTAT.

Results: It turned out that among 107 students surveyed defined vascular age was higher than the passport age in 13 people, that is 12.2% students. It was also found out that among 107 surveyed individuals in school for the basic module of health lifestyle were enrolled 95.4%. Among 98 students who did not pass instrumental studies to assess the vascular age, were enrolled only 37.8%. It was mastered educational module developed in accordance with the health center curriculum in the first group 90,2% among enrolled students, while in the second group – only 54.1%. Also revealed significant differences in the dynamics of indicators of increase of consumption of fiber and reducing salt intake. The least positive developments observed on the use of sausage, frankfurters and other byproducts.

Conclusions: Mass instrumental assessment of VA among medical students allowed to determine excess biological age in almost every tenth future physician. This angiologic screening during student's examination has established itself not only as an effective method for estimating VA of the youth, but also as reliable motivator for initiation of students in educational projects aimed to formation of their positive behavior patterns and correction of identified RF.

PP.25.10 VALIDATING RENAL NERVE STIMULATION-INDUCED BLOOD PRESSURE CHANGES AS A PREDICTOR OF CLINICAL RESPONSE TO RENAL SYMPATHETIC DENERVATION

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Objective: Renal nerve stimulation (RNS) can be used to elicit increases in blood pressure (BP) during renal denervation (RDN) to target sympathetic nerve tissue. In a smaller cohort RNS induced BP changes proved to predict ambulatory BP response to RDN during follow up. The goal of the current study was to validate the correlation between RNS-induced BP changes during RDN and the ambulatory BP changes during follow up

Design and method: Forty-two patients with drug-resistant hypertension were included in a single-center prospective cohort. RNS was performed under general anesthesia at different sites in the right and left renal arteries, both before and after RDN. RNS-induced BP and heart rate changes were monitored.

Results: RNS resulted in a mean maximum systolic BP increase of 46 ± 20 mmHg before RDN and a mean increase of 13 ± 12 mmHg after RDN (P < 0.001). Average systolic ABPM was 145 ± 15 mmHg before RDN and decreased to 135 ± 12 mmHg at 3- to 6-month follow-up (P = 0.005). Changes in RNS-induced BP increase before versus immediately after RDN and changes in ABPM were correlated, both for systolic BP (R = 0.39, P = 0.039) and diastolic BP (R = 0.40, P = 0.034). RNS-induced maximum BP increase before RDN had a correlation of R = 0.45 (P = 0.013) for systolic and R = 0.51 (P = 0.004) for diastolic ABPM changes.

Conclusions: RNS-induced BP changes before versus after RDN were correlated with changes in 24-hour ABPM 3 to 6 months after RDN. This finding strongly support the use of RNS as a procedural endpoint for RDN.

PP.25.11 EFFECTS OF SINGLE-PILL TRIPLE FIXED DOSE COMBINATION THERAPY COMBINED WITH SINGLE COMPONENT THERAPEUTIC DRUG MONITORING IN TREATMENT-RESISTANT HYPERTENSION

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Objective: Non-adherence to antihypertensive drug therapy represents a leading cause for lack of blood pressure (BP) control and apparent treatment-resistant