algorithmic treatment and home BP monitoring (HBPM) in men and women <75 years with uncomplicated hypertension (UH).

Design and method: Per protocol cohort of PERFECT-BP prospective observational study (ISRCTN79570562) included 430 newly diagnosed (18.3%) or treated but uncontrolled (BP>160/100mmHg) UH patients (pts) aged 57.6 ± 0.5, 197(45.8%) male, 74(17.2%) diabetics. HBPM was performed by standardized automatic Microlife BPA3G1 device with individually selected cuff. At visit 1, pts were given training and written instructions for HBPM and recording (twice per day for 7 consecutive days before each visit) and were prescribed or switched to perindopril/amlodipine fixed-dose combination (FDC) (doses at discretion of MDs). Step 2 was FDC uptitration, step 3 – indapamide SR, step 4 – spironolactone, step 5 – mexitolone or desoxazosin.

Results: At baseline men differed from women by younger age (56.1 ± 0.7 vs 59.2 ± 0.6 years, p < 0.01), higher glomerular filtration rate (106.4 ± 2.0 vs 88.3 ± 0.2 mL/min/1.73m², p < 0.001), lower incidence of obesity (39.1 vs 59.9%, p < 0.01), higher smoking rate (6.7% ± p < 0.001), higher office and home BP (Table). Maximal FDC dose (10/10 mg) prescription obtained 48.7% men vs 33.9% women (p < 0.05), triple therapy – 25.4% vs 28.3%, and 4 or more drugs – 11.7% vs 9.5% (all p > 0.05). By 6 M, target office BP was attained in 145(73.6%) men vs 206(84.8%) women, normal home BP – in 110(55.5%) vs 179(76.8%), both target office and normal home BP – in 104(52.8%) vs 169(72.5%, all p < 0.01). Masked uncontrolled hypertension at 6M was identified in 41(20.8%) and 37(15.9%) pts, white coat one – in 6(3%) and 10(4.3%) respectively, (all p > 0.05).

Conclusions: Standardized algorithmic treatment based on FDC in real life setting provided lower rates of office and home BP control in men compared to women. Sex differences did not affect the incidence of masked uncontrolled and white-coat hypertension.

1C.04 COFFEE CONSUMPTION IS A PREDICTOR OF CARDIOVASCULAR EVENTS IN YOUNG AND MIDDLE AGED HYPERTENSIVE SUBJECTS

L. Mos1, C. Fania2, E. Benetti1, P. Bratti1, G. Maraglino3, A. Mazer1, S. Couzzo5, G. Garavelli5, E. Casiglia1, P. Palatini1, 1Town Hospital, San Daniele del Friuli, ITALY, 2University of Padua, Padua, ITALY, 3University Hospital der Universidad di Viterbo, ITALY, 4Town Hospital, Trento, ITALY, 5Town Hospital, Cremona, ITALY

Objective: Controversy still exists about the long-term cardiovascular and metabolic effects of coffee consumption in hypertension. Aim of the study was to assess the predictive capacity of coffee use for cardiovascular events (CVE) and to ascertain whether the coffee-CVE association was mediated by the long-term effects of coffee on blood pressure (BP) and glucose metabolism.

Design and method: The analysis was made in 1201 participants from the HARVEST, a prospective cohort study of non-diabetic subjects aged 18–45 years with uncomplicated hypertension (UH).

Results: Among the participants, 26.3% were abstainers, 62.7% were moderate coffee drinkers (1–3 cups/day) and 10.0% were heavy coffee drinkers (>3 cups/day). During a 12.5 year follow-up there were 60 CVE. In multivariable Cox analyses, coffee consumption was a significant predictor of development of hypertension needing treatment with hazard ratios (HR) of 1.5 (CI 1.1–1.9) for heavy drinkers and 1.1 (0.9–1.3) for moderate drinkers compared to abstainers. Also, coffee was a predictor of future prediabetes with HRs of 2.0 (1.3–3.1) and 1.3 (0.9–1.7), in the heavy and moderate drinkers, respectively. In multivariable Cox analyses, including other lifestyle factors, age, sex, parental CVE, BMI, total cholesterol, 24 h ambulatory BP, 24 h ambulatory heart rate and follow-up changes in body weight, both coffee categories were independent predictors of CVE with HRs of 4.3 (1.3–13.9) for heavy coffee drinkers and 2.9 (1.04–8.2) for moderate drinkers. Inclusion of hypertension development in the regression attenuated the strength of the coffee-CVE association with HRs of 3.9 (1.2–12.5) for heavy and of 2.8 (0.99–7.8) for moderate drinkers. When future prediabetes was also incorporated, the relationship was of borderline significance for heavy coffee drinkers (HR, 3.2, 0.94–10.9) and was no longer significant for moderate drinkers (HR, 2.3, 0.8–6.5).

Conclusions: Coffee use is linearly associated with increased risk of CVE in stage 1 hypertension. The effect of coffee on CVE seems to be at least partially mediated by its long-term effects on BP and glucose metabolism. Coffee consumption should be reduced in young-to-middle-age patients with hypertension.

1C.05 MORNING SURGE AND SLEEP-TIME BLOOD PRESSURE AS PROGNOSTIC MARKERS OF CARDIOVASCULAR RISK: THE HYGIA PROJECT


Objective: The extent of blood pressure (BP) surge upon waking has been associated with increased cardiovascular (CVD) risk in some, but not all, studies. Numerous studies, however, have consistently shown the association between elevated sleep-time BP mean and a rising BP pattern with increased CVD risk, leading to a paradox, as patients with sleep-time hypertension or non-dipper/riser BP pattern have attenuated morning BP surge. We evaluated the comparative prognostic value for CVD events of the morning BP surge and sleep-time BP among the participants in the ongoing Hygia Project.

Design and method: This study involved 11255 subjects, 6028 men/5227 women, 59.8 ± 14.5 years of age, prospectively evaluated throughout a 4.0-year median follow-up. BP was measured at 20-min intervals from 07.00 to 23.00 h and at 30-min intervals at night for 48 h. During monitoring, subjects maintained a diary listing the times of going to bed and awakening.

Results: We documented 1539 total events, including 400 deaths, 176 strokes, 144 myocardial infarctions, 147 coronary revascularizations, and 193 heart failures. A greater prewakening systolic BP surge was associated with significantly lower, not higher, CVD risk in a Cox proportional-hazard model adjusted for the significant influential characteristics of age, sex, diabetes, chronic kidney disease, cigarette smoking, waist perimeter, and history of previous CVD event (hazard ratio [HR] 0.83 [95%CI 0.78–0.88] per each 1 SD increment; P < 0.001). The HR was progressively and significantly higher in the first three than in the last two quintiles of increasing prewakening BP surge. The significant value of morning surge markedly decreased after correcting by the asleep BP mean, the single most significant prognostic marker of total CVD events (HR = 1.37 [1.29–1.44], P < 0.001).

Conclusions: Our findings document that, when properly analyzed as a continuous variable, a larger morning BP surge is associated with a significantly lower CVD risk, in line with the markedly greater risk associated with decreasing dipping of the BP pattern, and the most highly significant prognostic value of progressively elevated asleep BP, an independent prognostic marker of CVD risk that has also been prospectively validated as a relevant therapeutic target for CVD risk reduction.

1C.06 AMBULATORY PULSE PRESSURE IS NEGATIVELY ASSOCIATED WITH EXCRETIONS OF URINARY CAFFEINE AND ITS METABOLITES

I. Guessous1, M. Pruijna2, B. Ponte3, G. Ehlers4, N. Ansermota, 1VU University, Department of Cardiovascular Sciences, Amsterdam, 2University Hospital Nijmegen, 3Centre for Neuroimaging, Leiden University, 4VU University, 5Maastricht University, 6University of Economics and Applied Sciences, Maastricht, 7University of Maastricht, 8Maastricht University, 9Maastricht University, Department of Social and Preventive Medicine, Maastricht, 10Maastricht University, 11University Leuven, Research Unit Hypertension and Cardiovascular Epidemiology, Leuven, 12Belgium, 13Integrisig, Clinic for Nephrology, Hypertension and Clinical Pharmacology, Bern, SWITZERLAND

Objective: Systolic blood pressure (BP) has been associated with urinary caffeine and its metabolites such as paraxanthine and theophylline. Caffeine and caffeine metabolites could influence arterial pulse pressure (PP) via sympathomimetic effects, smooth muscle relaxation, and phosphodiesterase inhibition. The purpose of this analysis was to explore the association of ambulatory PP with urinary caffeine and its related metabolites in a large population-based sample.

Design and method: Families were randomly selected from the general population of three Swiss cities (2009–2013). Ambulatory BP monitoring was conducted