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EPIDEMIOLOGY OF HYPERTENSION AND METABOLIC DISORDERS

LACK OF LIFESTYLE MODIFICATIONS IN GLOBAL HYPERTENSION MANAGEMENT

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Objective: The aim of this study is to analyze the role of lifestyle modifications in global arterial hypertension management in France.

Design and method: This retrospective cross-sectional study is an analysis of the database of ESTEBAN study which was led by Santé Publique France from 2014 to 2016 on a representative sample of the French population. Our study focused on the aware hypertensive adults of the ESTEBAN final sample: 440 participants aged 18 to 74. The main criteria are the proportion of participants who received lifestyle advice(s) in their overall arterial hypertension management, with or without associated pharmacological treatment, and the proportion of recommendations of the three main lifestyle advices: physical activity practice, weight reduction and dietary modifications.

Results: More than half (57%) of participants declared not to have received any lifestyle advice in the framework of their arterial hypertension management, including 39% who were not treated pharmacologically (Figure 1). Physical activity practice was recommended to 31.8% of sedentary participants and weight reduction to 26.8% of overweight participants. Less than a quarter (20.1%) received dietary recommendations (Figure 2), 69% of them for the limitation of salt intake and 10.7% for the limitation of alcohol intake.

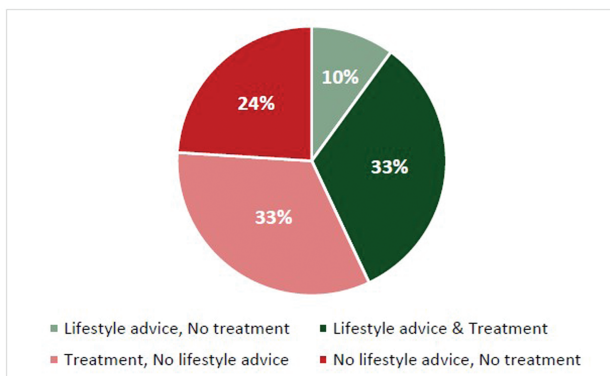


Figure 1: Distribution of aware hypertensive adults according to their overall hypertension management

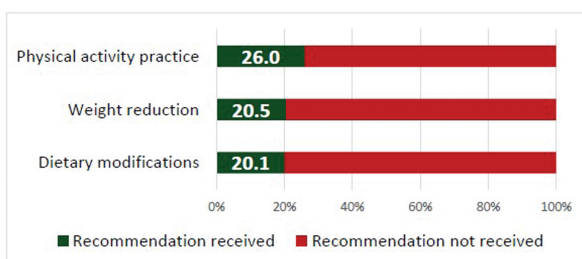


Figure 2: Recommendation rate of the main lifestyle modifications

Conclusions: Lifestyle modifications remain too rarely recommended. Time of a medical visit is probably too short, although lifestyle advices should be discussed with the hypertensive patient at the time of diagnosis and throughout the follow-up, with the triple goal of a more efficient treatment, a better treatment persistence and finally a better blood pressure control.

POOR HYPERTENSION CONTROL AND DISAPPEARANCE OF MEDITERRANEAN LIFE STYLE ON THE CROATIAN ADRIATIC ISLANDS. HUNT ON THE SILENT KILLER (HSK) – OPPORTUNISTIC PUBLIC HEALTH ACTION

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Objective: Mediterranean lifestyle is slowly disappearing along the Croatian coast and Croatian islands were supposed to be the last part of healthy living. Unfortunately, healthcare system is poorer on islands than in other parts of Croatia. Our aim was to analyse lifestyle and hypertension (HT) treatment and control among inhabitants of the Croatian islands.

Design and method: HSK was organised by the Croatian Society of Hypertension and conducted by the WG- medical students in hypertension. A screening site was set up at the boat by which students traveled from island to island. Adult volunteers were recruited through opportunistic screening on five Adriatic islands. Trained medical students collected information through an extended questionnaire. HT was defined as blood pressure (BP) > 140/90mmHg (single occasion; an average of 2nd–3rd measurement; Omron M3) and/or self-reported use of drugs for HT. Results were compared with results from the general Croatian population (EHUH 2 cohort).

Results: A total of 424 participants were included (196 men, average age 61 years). There were less obese and current smokers at islands than in the general Croatian population (26.5% vs. 33.1%; 21.5% vs. 25%, respectively, $p < 0.05$). Islanders were more physically active (> 1 time/week), eat more frequently fish (> 1 time/week), and use more frequently olive oil (daily basis) (44.1% vs. 26%, 79.9% vs. 32.5%, 72.6% vs. 14.9%, respectively; $p < 0.01$). However, there were no differences in consumption of red meat, processed meat, cookies and cakes ($p > 0.05$). Less hypertensive patients were treated and control was achieved in less subjects on islands than in the general population (60.7% vs. 72.9%; 27.2% vs. 39.3%, respectively; $p < 0.01$).

Conclusions: Some elements of Mediterranean life are still present on Croatian islands. However, several poor lifestyle habits are equally present on islands and in other Croatian regions. Treatment and control of HT are poorer on islands reflecting inadequate healthcare and lack of physicians. Public health authorities should reorganize health care on islands. In the meantime, such public health actions are warranted and must continue.

CLINICAL IMPLICATIONS OF CARDIAC TROPONIN-I IN PATIENTS WITH HYPERTENSIVE CRISIS VISITING THE EMERGENCY DEPARTMENTS

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Objective: Cardiac troponin-I (cTnI) is the representative marker of myocardial injury. Elevation of cTnI is frequently accompanied in patients with hypertensive crisis, but there are few studies on its prognostic significance in hypertensive crisis. The aim of this study was to determine whether cTnI could predict the all-cause mortality in patients with hypertensive crisis visiting the emergency department (ED).

Design and method: In this observational study, we enrolled patients aged > = 18 years who visited an ED between 2016 and 2019 for hypertensive crisis, which was defined as systolic blood pressure > = 180 mmHg and/or diastolic blood pressure > = 110 mmHg. Among the 6,467 patient, 3,938 patients who performed assay for cTnI were finally analyzed.

Results: Among the 3,938 patients, 596 (15.1%) patients had cTnI levels above the 99th percentile upper reference limit (elevated cTnI, > 0.04 ng/mL) and 600 (15.2%) patients had cTnI levels between the detection limit ($> = 0.01$ ng/mL) and the 99th percentile upper reference limit (borderline cTnI). The 3-year all-cause mortality in elevated cTnI group, borderline cTnI groups, and normal cTnI groups were 41.6%, 36.5%, and 12.8%, respectively. After adjusting for confounding variables, patients with elevated cTnI (adjusted hazard ratio [HR] 2.01; 95% confidence interval [CI], 1.61–2.52) and patients with borderline cTnI (adjusted HR 1.64; 95% CI, 1.32–2.04) showed significantly higher risk of 3-year all-cause mortality than patients with normal cTnI.

Conclusions: In patients with hypertensive crisis, cTnI levels provide useful prognostic information and permit the early identification of patients with an increased risk of death. Moreover, borderline cTnI was also significantly associated with higher risk of all-cause mortality. More intensive treatment and follow-up strategies are needed for patients with hypertensive crisis with elevated cTnI.

IMPACT OF PROTEINURIA ON LONG-TERM MORTALITY IN PATIENTS WITH HYPERTENSIVE CRISIS VISITING THE EMERGENCY DEPARTMENT

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Objective: Hypertensive crisis is associated with poor clinical outcomes. Proteinuria, frequently observed in hypertensive crisis, is a risk factor for cardiovascular and all-cause mortality in patients with hypertension. However, in patients presenting with hypertensive crisis and proteinuria, the impact of proteinuria on long-term mortality are unknown. We investigated the association of proteinuria with all-cause mortality.

Design and method: This retrospective study at a tertiary referral center conducted with adult patients who were admitted to the ED between 2016 and 2019 with hypertensive crisis, which was defined as systolic blood pressure ≥ 180 mmHg and/or diastolic blood pressure ≥ 100 mmHg. Of 10,219 patients with hypertensive crisis, 5,421 patients with an assay for proteinuria were enrolled in this study. Proteinuria was defined as a trace or more of protein on a urine dipstick test performed at ED.

Results: Proteinuria was present in 2,855 (52.7%) of the 5,421 patients. At 3 years, crude all-cause mortality rates were 9.6% for patients who were negative proteinuria, 17.9% for those with trace proteinuria, 25.7% for those with proteinuria (1+), 28.9% for those with proteinuria (2+), 33.6% for those with proteinuria ($\geq 3+$). After adjusting for sex, age, blood pressure, and comorbid condition, the hazard ratio (95% CI) for dipstick proteinuria was 1.74 (1.44–2.10) for those with trace proteinuria, 2.24 (1.84–2.72) for those with proteinuria (1+), 2.21 (1.76–2.78) for those with proteinuria (2+), 2.30 (1.75–3.01) for those with proteinuria ($\geq 3+$) compared with the reference of negative proteinuria.

Conclusions: Proteinuria, which was detected on a urine dipstick test, was a significant predictor of all-cause mortality in patients with hypertensive crisis.

IMPACT OF THE ESTIMATED GLOMERULAR FILTRATION RATE ON LONG-TERM MORTALITY IN PATIENTS WITH HYPERTENSIVE CRISIS VISITING THE EMERGENCY DEPARTMENT

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Objective: The association between renal function and all-cause mortality among patients with hypertensive crisis is unclear. We aimed to identify the impact of the estimated glomerular filtration rate (eGFR) on all-cause mortality in patients with hypertensive crisis visiting the emergency department (ED).

Design and method: This retrospective study included patients aged ≥ 18 years admitted to the ED between 2016 and 2019 for hypertensive crisis (systolic blood pressure: ≥ 180 mmHg and/or diastolic blood pressure: ≥ 110 mmHg). They were classified into four groups according to the eGFR at admission to the ED: > 90 , 60–89, 30–59, and < 30 mL/min/1.73 m².

Results: Among the 4,821 patients, 46.7% and 5.8% had an eGFR of ≥ 90 and < 30 mL/min/1.73 m², respectively. The patients with a lower eGFR were older and more likely to have comorbidities. The 3-year all-cause mortality was 7.7% and 41.9% in those with an eGFR of ≥ 90 and < 30 mL/min/1.73 m², respectively. After adjustments for confounding variables, those with an eGFR of 30–59 (hazard ratio [HR], 2.00; 95% confidence interval [CI], 1.53–2.62) and < 30 mL/

min/1.73 m² (HR, 2.45; 95% CI, 1.79–3.37) had significantly higher 3-year all-cause mortality risks than those with an eGFR of ≥ 90 mL/min/1.73 m². The patients with an eGFR of 60–89 mL/min/1.73 m² had a higher mortality (21.1%) than those with an eGFR of ≥ 90 mL/min/1.73 m² (7.7%); however, the difference was not significant (HR, 1.23; 95% CI, 0.96–1.58).

Conclusions: Renal impairment is common in patients with hypertensive crisis visiting the ED. There is a strong independent association between decreased eGFR and all-cause mortality in these patients. The eGFR provides useful prognostic information and permits early identification of patients with hypertensive crisis with an increased mortality risk. Intensive treatment and follow-up strategies are needed for patients with a decreased eGFR visiting the ED.

WHAT ARE THE FACTORS ASSOCIATED WITH UNCONTROLLED BLOOD PRESSURE IN BRAZILIAN HYPERTENSIVE PATIENTS?

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Objective: Uncontrolled arterial hypertension (AH) is defined by BP $> = 140/90$ mmHg. It has a high prevalence, is associated with the causes of pseudo-resistance and is related to several complications and negative health outcomes. Thus, the objective of this study was to investigate the factors associated with the lack of blood pressure control in hypertensive Brazilians treated in public and private services.

Design and method: Cross-sectional, analytical, multicenter and national study, carried out with hypertensive adults and elderly individuals, followed by 45 outpatient clinics, included from September 2013 to October 2015 and submitted to interview, clinical and anthropometric evaluation. The outcome variable was uncontrolled pressure (BP $> = 140$ mmHg systolic and/or $> = 90$ mmHg diastolic). Simple and multiple logistic regression analysis was performed.

Results: A total of 2,643 participants with a mean age of 61.6 (11.9), 55.7% female and 46.4% with uncontrolled BP were evaluated. Uncontrolled BP was associated: age over 60 years (OR: 1.31 [1.11 - 1.55]); practice of irregular physical activity (OR: 1.28 [1.06 - 1.55]); attending the emergency room for hypertensive crises in the last six months (OR: 1.80 [1.46 - 2.22]); increase in body mass index (OR: 1.02 [1.01 - 1.04]); low adherence to drug treatment (OR: 1.22 [1.04 - 1.44]) and menopause (OR: 1.36 [1.07 - 1.72]). The following were negatively associated: fruit consumption (OR: 0.90 [0.85 - 0.94]); presence of dyslipidemia (OR: 0.75 [0.64 - 0.89]), acute myocardial infarction (OR: 0.59 [0.46 - 0.76]) and peripheral arterial disease (OR: 0.52 [0.34 - 0.78]).

Conclusions: Factors associated with non-BP control were: advanced age, increased body mass index, practice of irregular physical activities, need for emergency care and low adherence to pharmacological treatment and protective factors: presence of acute myocardial infarction and peripheral arterial disease, and higher daily fruit intake.

LIPIDS' METABOLISM AND ANGIOTENSINOGEN GENE (AGT, RS699) POLYMORPHISM ASSOCIATION IN PATIENTS WITH ESSENTIAL ARTERIAL HYPERTENSION

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Objective: The study purpose was to analyze the association of angiotensinogen AGT (rs699) gene polymorphism with lipids' metabolism in patients with essential arterial hypertension (EAH).

Design and method: The study involved 72 patients suffering from EAH with target-organ damaging, moderate, high or very high cardiovascular risk. Among them, 70.84% (51) women and 29.16% (21) men, mean age 59.87 ± 7.98 y o. The control group involved 50 practically healthy persons, matched by age and sex distribution. To examine polymorphism of AGT (rs699) gene a qualitative polymerase chain reaction was made in real-time regimen. The state of lipids' metabolism was studied by means of determination of total cholesterol (TC), high-density lipoprotein cholesterol (HDL-C), low-density lipoprotein cholesterol (LDL-C), triglycerides (TGs) content in the blood plasma using diagnostic standard sets produced by „ACCENT-200” firm (Poland).

Results: The genotypes distribution of the AGT (rs699) gene in patients vs control group did not differ reliably and was as follows: TT- genotype - 13.89%