Abstracts from the 18th Congress of the Italian Society of Cardiovascular Prevention (SIPREC) Napoli 19-21 March 2020

Prevalence of cardiovascular risk factors and coronary artery events between immigrant patients from south-east asia and south italian patients with acute coronary syndrome

Vincenzo Sucato, Egle Corrado, Salvatore Novo, Luca Riggio, Salvatore Evola, Giuseppina Novo, Alfredo Ruggero Galassi
Unit of Cardiology, Department of Health Promotion, Mother and Child Care, Internal Medicine and Medical Specialties (ProMISE) 'G. D'Alessandro', Paolo Giaccone Hospital, University of Palermo, Italy

Thematic area: Health of migrants

Aims: The aim of this study is trying to better define determinants of the greatest risk of coronary events in Asian patients compared with south Italian group. In every patient we evaluate the incidence of risk factors, the extent of coronary artery disease and the incidence of major cardiovascular adverse events (MACE) after follow-up (average of 36 months).

Methods and Results: In this study, 56 patients with Acute coronary syndrome (ACS) from south-east Asia were recruited, originating mainly from Bangladesh, India and Sri Lanka, hospitalized between 2013 and 2018. In the study, we compared the characteristics of the Asian population with a control group made up of 56 Sicilian patients who were also hospitalized for ACS in the same period. The demographic, clinical and procedural characteristics were analyzed by consulting an electronic archive. The incidence of MACE was assessed by 36-month follow-up, analyzing the namely death, re-ima, angina and possible death from non-cardiovascular events.

The group of Asian patients (88% of males and 13% of females) have an age of 48 years whereas the control group of Italian patients (82% of males and 18% of females) have an average age of 58. In the assessment of risk factors, we observed a significant difference in incidence regarding obesity, in fact only 5% of Asians are obese despite 88% of Italian patients. It is also possible to highlight a higher incidence of type 2 diabetes mellitus in Asians, an expression of a greater predisposition to insulin resistance. Remarkable is the difference between smokers, more Italian than the Asians (77% vs 36%). We also focused our attention on coronary angiography, studying vessels with critical stenoses (occlusion of the lumen greater than 70%) and comparing the data of the two populations. With reference to coronary stenoses, it is noted that in the group of Asian patients, the multiple lesions are 36%, while in Italian patients the multiple lesions result to be 50%. Finally, we compared the incidence of major cardiovascular adverse events (MACE) with a mean follow-up of 36 months comparing the two populations. In Asian patients, 75% had new episodes of angina, 4% had a heart attack, 17% died from a cardiovascular cause, while mortality due to 'other' causes was not confirmed. In the group of Italian patients only 8% of patients had angina, while none had a re-heart attack or death.

Conclusion: From our study we can see an important prognostic difference between Asian patients and Italian patients in a medium follow up. Therefore, it is advisable to pay attention to the different impact of cardiovascular risk factors and to the need to ensure surveillance of the health status of minorities present in the Europe country, to guarantee a better adherence to therapy and positively change the burden of cardiovascular diseases.

Arterial-ventricular coupling in different hypertension phenotypes

Ilaria Figliuzzi[1], Barbara Citoni[1], Vivianne Presta[1], Ludovica Carducci[1], Francesca Miceli[1], Vincenzo Cesario[1], Giovanna Gallo[1], Roberta Coluccia[2], Andrea Ferrucci[1], Massimo Ciavarella[1], Paolo Trambaiolo[2], Massimo Volpe[1,3], Giuliano Tocci[1,3]
[1]Hypertension Unit, Division of Cardiology, Department of Clinical and Molecular Medicine, Faculty of Medicine and Psychology, University of Rome Sapienza, Sant'Andrea Hospital, Rome, Italy, [2]ICCU, Sandro Pertini Hospital, Roma, Italy, [3]IRCCS Neuromed, Pozzilli (IS), Italy

Introduction: Left ventricular arterial coupling (VAC) can be defined as the ratio between arterial (Ea) and ventricular elastance (Ees). It is now considered as a reliable and effective measure of cardiovascular performance, but its role in hypertension management and control is poorly recognised

Aim: To investigate the relationship between VAC and home, clinic and 24-hour ambulatory blood pressure (BP) levels in a cohort of adult hypertensive outpatients.

Methods: We evaluated adult outpatients who underwent full blood pressure (BP) assessment, 12-lead electrocardiogram and advance echocardiography examinations, including parameters for non-invasive evaluation of Ees, Ea and VAC (left ventricular ejection fraction [LVEF], stroke volume [SV], left ventricular pre-ejection time [PET], and left ventricular total ejection time [TET]) at our Hypertension Unit, Rome IT. All BP measurements were performed according to international guidelines. Included patients were stratified either according to hypertension classification or presence/absence of antihypertensive medications.

Results: We included an overall population sample of 212 outpatients (35,5% female, mean age $53,4\pm14,7$ years, clinic BP $146,1\pm20,7/88.7\pm12,1$ mmHg, home BP $136,5\pm16,2/83,3\pm10,0$ mmHg, 24-hour BP $135,6\pm16,1/84,6\pm11,8$ mmHg, SCORE risk $16,2\pm21,6\%$, Ea $1,67\pm0,5$, Eas $1,84\pm0,7$, VAC $0,97\pm0,3$), among whom 26,8% were untreated, 24,5% were treated with monotherapies and the remaining 48,7% were treated with at least two antihypertensive drugs. Outpatients with uncontrolled BP showed higher Ea ($1,79\pm0,5$ vs $1,53\pm0,5$, p<0,001) and Eas values ($1,93\pm0,6$ vs $1,73\pm0,8$; p=0,041) than the group with controlled BP; VAC didn't show significant differences between groups (p=0,937). Both Ea and Eas resulted significantly related with daytime (p<0,001 and p=0,05, respectively) and 24-hour systolic BP (p<0,001 and P=0,045, respectively) levels.

Conclusions: Uncontrolled BP resulted to be positively and significantly associated with Ea and Eas. An assessment these parameters may provide incremental value for global cardiovascular risk stratification in hypertensive patients, possibly identifying patients with a "stiffer" cardiovascular function at high risk of developing congestive heart failure.

Pulse wave velocity and hypertension-mediated organ damage: analysis of database of adult outpatients with essential hypertension

Vivianne Presta[1], Ilaria Figliuzzi[1], Barbara Citoni[1], Francesca Miceli[1], Vincenzo Cesario[1], Giovanna Gallo[1], Roberta Coluccia[2], Andrea Ferrucci[1], Massimo Volpe[1,2], Giuliano Tocci[1,2]
[1]Hypertension Unit, Division of Cardiology, Department of Clinical and Molecular Medicine, Faculty of Medicine and Psychology, University of Rome Sapienza, Sant'Andrea Hospital, Rome, Italy, [2]IRCCS Neuromed, Pozzilli (IS), Italy

Introduction: Search for hypertension-mediated organ damage (HMOD) is recommended in all hypertensive patients for both diagnostic and therapeutic purposes. Recently, the assessment of pulse wave velocity (PWV) has been proposed to further stratify individual global cardiovascular risk.

Aim: To estimate clinic and 24-hour ambulatory PWV in patients with or without cardiac HMOD and to evaluate potential correlation with left ventricular (LV) mass and function.

Methods: We collected data derived from a cohort of outpatient affected by hypertension, who consecutively underwent home, clinic and ambulatory BP and PWV assessment at our Hypertension Unit. Clinic BP and PWV was measured with Mobil-O-Graph AND UA-1030T (A&D Medical, Sidney, Australia) and 24-hour BP and PWV with Mobil-O-Graph PWA 24 hours (IEM GmbH, Stolberg, Germany). Diagnostic evaluation of hypertension-mediated organ damage included 12-lead electrocardiogram, echocardiogram, and renal function. LV hypertrophy was defined as LV mass indexed by BSA (g/m2) >115 in men and >95 in women. Systolic and diastolic LV function was also assessed.

Results: We analysed a sample of 123 adult outpatients (37.4% female, mean age 47.6 ± 16.3 years, BMI 26.6 ± 4.9 kg/m2, clinic BP $145.7\pm19.0/90.0\pm11.9$ mmHg, 24-hour BP $131.5\pm13.8/80.2\pm21.3$ mmHg, SCORE risk $5.7\pm9.5\%$), among whom 61.8% had normal LV geometry, 14.66% had LV remodelling, 10.6% had eccentric LVH, and 13.0% had concentric LVH. 24-hour PWV resulted significantly higher in patients with LV concentric geometry (7.8 ± 1.7 vs. 6.3 ± 1.1 m/s; P<0.001) and significantly and positively correlated with LV mass indexed by BSA (Pearson: r=0.418; P<0.001) and height2.7 (r=0.385; P<0.001). Both clinic and 24-hour ambulatory PWA resulted inversely and significantly related with diastolic dysfunction, expressed as E/A ratio (clinic PWA: r=-0.428; P=0.001) (24-hour PWA: r=-0.440; P=0.005) and Em/Am ratio (clinic PWA: r=-0.371; P=0.007) (24-hour PWA: r=-0.325; P=0.053).

Conclusions: 24-hour ambulatory PWA showed significant correlation with cardiac HMOD, thus suggesting a potential clinical application for better stratifying individuals at apparently low-to-moderate cardiovascular risk profile.