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Life style and nutritional status as risk factors of coronary artery disease in of Korean hypertensive patients: data from Korea National Health and Nutrition Examination survey (KNHANES IV)

Introduction: The Fourth Korea National Health and Nutrition Examination Survey (KNHANES IV) data revealed considerable prevalence of ischemic heart disease (IHD) in Korean hypertensive population. The purpose of this study was to clarify the value of life style and nutritional status as risk factors of coronary artery disease from nationwide registry data.

Methods: We analyzed 1476 patients (male 44.8%, Age 63.6±12.1y) with diagnosed hypertension from KNHANES IV. We checked baseline demographic data and various parameters of lifestyle and nutritional status including socio-economic status, physical exercise, educational status, social habit, working environment, total calory intake and distribution of each nutrient. Cross sectional analysis was performed to determine risk factors of coronary artery disease in selected patient cohort.

Results: Diagnosis of coronary artery disease was confirmed in 83 patients (5.6%). There was no significant difference in socioeconomic status, educational status and total calory intake. In univariate analysis, insufficient physical exercise, insulin using, smoking, stressful working environment and low sodium intake had statistically significant correlation with presence coronary artery disease. After multivariate analysis, stressful working environment (p=0.003, HR=3.088), low sodium intake (p=0.015, HR=2.294) remained independent predictors of coronary artery disease.

Conclusion: In addition to classical risk factors for coronary artery disease, stressful working environment and low sodium intake were independent risk factors of coronary artery disease in Korean hypertensive population.

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Cardiac magnetic resonance T1 mapping pre and post contrast characterizes the myocardium in orthotopic heart transplantation recipients without active rejection

Methods: We studied 33 heart transplant patients (Tx) (7 Females), mean age 63±10.66 mo (range 2-1288) and 12 normals (N), age 48±6.13 and 40±11 p=0.04. Absence of active rejection was confirmed by EMR. CMR was performed on a 1.5 Tesla scanner (Siemens). Short axis SSFP cine images covering the LV were acquired; image position was used for T1-mapping and late gadolinium enhancement (LGE). MOLLI T1 maps were generated from 5-7 SSFP images with variable inversion preparation time as described by Messroghli (2007) before and after gadobutrol i.v. (0.15 mmol/kg). Region of interest were drawn on 3 short axis (base, mid, apex) average T1 values pre and post contrast administration (msec) were fitted by a non-linear curve. Data are mean±SD.

Results: Systolic function was similar in both groups Tx 65±10 vs N 67±5 p=0.69, LV Mass Index was slightly higher in Tx 76±17 vs 66±8 N p=0.16. In Tx pre - contrast T1 was longer 1020±93 vs 957±45 msec p=0.001, whereas post contrast was shorter 406±46 msec vs 455±35 msec p=0.001. In Tx with cytomegalovirus infection (n=17) T1 mean pre - contrast was significantly higher 1043±15 vs 981±46 p=0.018. T1 post - contrast but not pre - contrast was inversely correlated to time interval from Tx y=4925-0.327x: p<0.05. Patients with LVH (n=7) had a significantly higher T1 both pre (p=0.007) and post contrast (p=0.04). LV mass index directly correlated to T1 pre P<0.05 and inversely correlated to T1 post (p=0.002). Twentythree out of 33 Tx had patchy LGE distribution mainly in the inferior RV insertion, 2 had a previous myocardial infarction and 8 did not show LGE (n=22).

Conclusion: Patient transplanted with no active rejection show a significant increase of interstitial fibrosis which builds up over time. CMR beside anatomofunctional parameters combining LGE and T1 mapping can provide a useful non-invasive characterization of the collagen deposition in transplanted hearts and allow a better insight into the progression of restrictive physiology.

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Dynamic changes of myocardial fibrosis in hypertrophic cardiomyopathy: initial phenotypic expression and the fibrosis extent are both key players determining the dynamic natures

Methods: Methods: We included 269 consecutive adult patients with well-controlled hypertension. All underwent 24-hour ambulatory ECG monitoring and their UA, UK, and UNaK ratio from 24-hour urinary excretion specimens were evaluated.

Results: No significant correlation was found between premature supraventricular contractions and the parameters that were examined. However, the percentage of premature ventricular contractions (PVC%) showed a weak positive association with UA (r=0.2, p=0.01) and a moderate negative association with UK (r=-0.396, p<0.001). The partial correlation coefficient of PVC% with the UA/UK ratio remained significant even after controlling for left ventricular mass index (r=0.437, p<0.001).

Conclusions: A higher UA/UK excretion ratio is significantly associated with PVC%, indicating an increased susceptibility to ventricular arrhythmias even among hypertensives with well-controlled blood pressure. Our findings reinforce recommendations for dietary interventions in those populations.