vestigate quantitative and qualitative lipoprotein abnormalities, including LDL density and oxidation, in naïve KS patients, focusing on lipoprotein phenotypes as compared to age-matched.
Methods. Anthropometric data, fasting blood samples (glycaemia, HbA1c, HOMA, LH, FSH, testosterone, SHBG, TSH), lipid profile, qualitative lipoprotein analysis by density gradient ultracentrifugation (DGUC), and oxidized LDL (ox-LDL) were analyzed in 30 naïve KS patients, 30 male and 40 age-matched female controls.
Results. KS patients are characterized by significantly higher total and HDL-cholesterol, and triglycerides than male controls, and significantly higher total, LDL-cholesterol, and triglycerides than female controls. By DGUC, KS patients show increased HDL and VLDL-cholesterol, and reduced dense LDL particles vs male (all $p<0.05$), and increased VLDL-cholesterol vs female controls. KS patients in the two upper tertiles of waist circumference (WC>91.3 cm) had a proatherogenic lipid profile with higher triglycerides, lower HDL, increased dense LDL (Rf=0.369 vs 0.392; $p<0.05$), and ox-LDL (61.1±16 vs 46.8±10 U/L, $p<0.05$) vs. the lower WC tertile group. We found a significant correlation between ox-LDL and dense LDL fractions by DGUC (all with $p<0,05$). By multivariate analysis, low testosterone levels were associated with increased WC (OR=0.73, 95%CI 0.54-0.97; p=0.029).
Conclusions. KS patients are characterized by a peculiar lipoprotein profile as compared to age-matched controls. In KS an increased WC is associated with a highly atherogenic lipid profile (increased triglycerides, dense and ox-LDL, reduced HDL). Low testosterone levels independently and significantly contribute to an increased WC.

SYMPATHETIC NEUROTRANSMISSION DURING ATHEROSCLEROSIS DEVELOPMENT: AN UNRECOGNIZED TARGET OF DYSLIPIDEMIA?

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Aim. With the aim of discovering new genes/pathways involved in dyslipidemia-driven atherosclerosis, transcriptomic analysis was conducted on aortas of several transgenic mouse lines, with different lipid/lipoprotein profiles and different susceptibility to atherosclerosis.
Methods. C57Bl/6, apoE-deficient (EKO), apoE/apoA-I deficient (EKO/A-IKO) and apoE/apoA-I-deficient mice overexpressing human apoA-I (EKO/A-IKO/hA-I) were studied. Mice were fed chow or Western diet, starting from 8 weeks of age and were analyzed after 22 weeks of diet for plasma lipoprotein profile by FPLC and for aortic atherosclerosis by en-face analysis. The entire gene expression profile of murine aortas was investigated by a high-throughput sequencing approach (transcriptomics).
Results. On chow diet, plaques were visible only in the aortic arch of EKO and EKO/A-IKO mice, characterized by low or absent HDL, respectively, and cholesterol accumulation in VLDL-LDL. Western diet worsened hyperlipidemia and plaque formation in the aortic arch of EKO and EKO/A-IKO mice and led to modest atherosclerosis development in EKO/A-IKO/hA-I mice, characterized by elevated VLDL-LDL cholesterol levels and a large HDL cholesterol peak.
Out of a total of 23,000 genes, about 2,300 genes were identified as differentially expressed in at least one condition. In the athero-prone genotypes, Western diet dramatically lowered the expression of genes coding for key enzymes of catecholamine synthesis and synaptic vesicular structure. A similar down-regulation was found in the low-HDL phenotype (EKO/A-IKO) compared with the high-HDL phenotype (EKO/A-IKO/hA-I), in both dietary conditions.
Conclusions. The sympathetic nervous system plays an established role in regulating vascular tone. In addition, some studies indicated that sympathetic neurotransmission deficiency may affect plasma cholesterol levels and lead to aortic cholesterol accumulation. Our data suggest that dyslipidemic conditions predisposing to atherosclerosis development (i.e. hyperlipidemia; low HDL levels) may interfere with the arterial sympathetic innervation by down-regulating the expression of genes involved in catecholamine biosynthesis, as well as in synaptic plasticity and transmission.

RENAL SODIUM HANDLING AND RISK TO DEVELOP HYPERTENSION AFTER 8-YEAR FOLLOW-UP: RESULTS OF THE OLIVETTI HEART STUDY

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Aim. The aim of this investigation was to estimate the predictive role of the renal sodium handling on the risk to develop HP and BP changes in an 8 year follow-up of a sample of men (The Olivetti Heart Study).
Methods. This study included 294 untreated normotensive non diabetics men, with normal renal function evaluated twice in 1994-95 and in 2002-04. Renal tubular sodium handling was estimated by exogenous lithium clearance and for this analysis FPRNa and distal sodium reabsorption (FDRNa) were considered.
Results. At baseline, higher tertile of FPRNa was associated with lower diastolic BP (DBP) and higher prevalence of smokers than lower tertile. Prevalence of baseline smoking habit was also greater in the last tertile of FDRNa. After 8-year of follow-up, there was a significant increase in BP from first to third tertile of FPRNa (SBP: I=9.8±11.0, II=14.9±14.2, III=16.4±15.2 mmHg; DBP: I=6.9±8.8, II=8.1±9.1, III=11.2±8.9 mmHg), confirmed also accounting for main potential confounders. While, there was not difference in BP changes across tertiles of FDRNa. In consideration of HP incidence of 52% in this sample, a significant difference was found across tertiles of FPRNa (p for trend =0.02), but not across FDRNa tertiles. In addition, multivariate analysis supported that baseline FPRNa was a significant predictor of HP, independently of potential confounders (OR: 1.63, 95%CI: 1.15 -2.33).
Conclusions. The results of this investigation indicated a predictive role of FPRNa on the changes in BP over time and on the risk to develop HP in a sample of healthy adult men.

RESPONSE TO TREATMENT AND OCCURRENCE OF CARDIOVASCULAR (CV) COMPLICATIONS IN PATIENTS WITH AUTOSOMAL RECESSIVE HYPERCHOLESTEROLEMIA (ARH): A RETROSPECTIVE ANALYSIS

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