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The prognostic meaning of dyslipidemia as a risk factor of arterial hypertension development

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Objective: The assessment of relationships between particularities of dyslipidemia (DL) and arterial hypertension (H).

Methods: 184 patients (pts) (85 males and 99 females, average age 52.5±3.5 years) with different cardiovascular pathology (excluding acute coronary syndrome) were enrolled in the study. DL without H was the criterion of inclusion to the study. The evaluation of total cholesterol (TC), low density lipoproteins (LDL) cholesterol, very low density lipoproteins (VLDL) cholesterol, high density lipoproteins (HDL) cholesterol and triglycerides (TG) was done as obligatory test. The investigations were performed every 6 months during 3 years.

Results: The pts were divided into 3 groups (grs) according to time of H development. 48 pts (26.1%) with history of H during 1st year of follow-up were included in 1 gr. 43 pts (23.4%) with history of H during 2nd year of follow-up were included in 2 gr. 55 pts (29.9%) with history of H during 3rd year of follow-up were included in 3 gr. 38 pts (20.7%) without H during 3rd year of follow-up were included in 4 gr. The TG elevation was detected in 69% of pts in 1 gr (1.98±0.08 mmol/l), 60% of pts in 2 gr (1.90±0.1 mmol/l) and 54% of pts in 3 gr (1.87±0.09 mmol/l).

The combined elevation of TG and LDL-cholesterol was detected in 63% of pts in 1 gr (1.96±0.10 mmol/l and 4.54±0.08 mmol/l), in 55% of pts in 2 gr (1.90±0.07 mmol/l and 4.22±0.12 mmol/l), in 63% of pts in 1 gr (1.86±0.09 mmol/l and 4.08±0.08 mmol/l). Pts from 4 gr had isolated elevation of TC (18 pts (47.4%) – 6.84±0.09 mmol/l), combined elevation of TC and VLDL-cholesterol (11 pts (28.9%), 6.72±0.07 mmol/l and 0.65±0.07 mmol/l, accordingly), combined elevation of LDL-cholesterol and VLDL-cholesterol (9 pts (23.7%), 4.12±0.06 mmol/l and 0.52±0.07 mmol/l, accordingly)

Conclusions: The elevated level of TG is the most significant factor for origin of H. Further progression of H is related to TG and LDL-cholesterol levels.

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Prevalence of metabolic syndrome and insulin resistance in atherothrombotic disease in two modes of acute clinical presentation

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Introduction: While there are much data on the risk factors involved in the onset of atherothrombotic stroke (AS) or acute coronary syndrome (ACS), few studies have compared the prevalence of metabolic syndrome (MS) and insulin resistance (IR) in the occurrence of these events.

Methods: In a pilot study, prospective, comparative, single centre, 137 patients who presented an AS (N= 68) or ACS (N= 69) were consecutively included. The cardiovascular risk factors (CRF) were collected, the prevalence of MS was determined using « the National Cholesterol Education Program Adult Treatment Panel III (NCEP-ATPIII) and the International Diabetes Federation (IDF) definitions. IR was determined using the homeostasis model assessment of insulin resistance (HOMA-IR) in patients without insulin treatment.

Results: There were no significant differences between groups for history of hypertension or diabetes, cardiovascular heredity, body mass index, nor lipid parameters. Sex ratio was similar in both groups but AS patients were older (58.2±8.4 vs. 54.0±8.8 respectively, p=0.006. Active smoking was more prevalent in the ACS group (30 vs. 18%, p=0.04). Plasma glucose and insulin levels were higher in the ACS group (5.59±1.86 vs. 5.0±1.0 mmol/l, p=0.04;

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9. ±1.04 vs. 6.7±3.6 μUI/ml, p=0.04, respectively). There was no difference in the prevalence of MS between ACS and AS groups, using NCEP-ATPIII definition (11 vs. 12 %, p=NS) or IDF definitions (26 vs. 23%, p=NS). There was a significantly higher IR in the ACS group (HOMA-IR 2.17±1.90 vs. 1.50±0.81, p=0.03).

Conclusion: In our study, distribution of cardiovascular risk factors is different according to the athero-thrombotic disease. The metabolic disturbances in particular IR seems to be predominant in the onset of ACS.

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Similar prognostic abilities of different modes of calculation of the ankle-brachial index to predict mortality in patients with coronary artery disease. A systematic prospective study.

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Background: The traditional method of calculation of the ankle-brachial index (ABI) and the usual 0.90 threshold have been recently challenged by alternate methods and values proposed as more sensitive to predict cardiovascular mortality. However the overall discriminative value of the ABI using different modes of calculation has not been systematically performed.

Methods: We assessed the ABI to predict the 5-years mortality of 705 patients who underwent coronary bypass surgery. We compared the ROC curves of 6 modes of ABI calculation, combining 3 different numerators (the highest (*high*), the mean (*mean*) and the lowest (*low*) pressure of posterior tibial and anterior tibial arteries) with 2 denominators (the highest (*high*) or the mean (*mean*) systolic pressure of both arms).

Results: During follow-up, 97 (13.8%) patients died. The area under the curves (AUC) of the 6 methods to predict 5-years mortality were similar (Table). Only the AUC of method "*High/High*" was significantly (p<0.05) higher than method "*High/Mean*" and "*Low/Mean*". The most accurate threshold to predict mortality differed for each method.

Conclusion: Each mode of ABI calculation presents its own optimal cut-off value to predict mortality. The use of the single 0.90 threshold to compare different modes of ABI calculation is inappropriate. The ABI mode of calculation and the threshold should be considered altogether. The ability of the ABI to predict mortality is almost similar among different modes of calculation.

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A randomized, double-blind placebo-controlled study of NV1FGF gene therapy in critical limb ischemia patients (TAMARIS Study).

Rationale, design and baseline patient characteristics.

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Background: Patients with critical limb ischemia (CLI) unsuitable for revascularization have a high rate of amputation and mortality (30% and 25% at 1 year respectively Local gene therapy using plasmid DNA encoding acidic fibroblast growth factor (NV1FGF, riferminogene pacaplasmid) showed promising results in a phase II trial on amputation free survival. This report provides the rationale, design and baseline characteristics of CLI patients enrolled

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Table : Comparison of 6 modes of ABI calculation to predict the 5-years mortality (abstract 237).

ABI mode of calculation	High/High	Mean/High	Low/High	High/Mean	Mean/Mean	Low/Mean
AUC	0.632*	0.620	0.615	0.610	0.618	0.598
Sensitivity with 0.90	55.7%	56.7%	60.4%	53.6%	60.8%	58.8%
Specificity with 0.90	65.1%	62.3%	60.2%	63.6%	58.5%	58.6%
Optimal cutpoint	0.94	0.97	0.92	1.00	0.97	0.92
Sensitivity for optimal cutpoint	63.9%	72.2%	64.6%	72.2%	74.2%	62.9%
Specificity for optimal cutpoint	60.3%	50.6%	58.7%	48.3%	50.3%	57.5%

* p<0.05 vs. High/Mean and Low/Mean

to the pivotal phase III trial (TAMARIS). It also describes baseline characteristics by diabetes status and region of origin.

Methods: An international, double-blind, placebo-controlled, randomized study included 525 CLI patients worldwide who were unsuitable for revascularization and had non-healing skin lesions, to evaluate whether repeated intramuscular administration of NV1FGF results in reduction of major amputations or deaths at 1 year.

Results: Mean age of the population was 70 ± 10 years including 70% males and 53% diabetic patients. Fifty four percent of the population had previous lower extremity revascularization and 22% had previous minor amputation of the index leg. Ninety six percent of patients had an ankle pressure < 70 mmHg and/or a toe pressure < 50 mmHg or a TcPO2 < 30mmHg. In 94% the index leg had distal occlusive disease affecting arteries below the knee. Statins were prescribed in 54% of patients, and antiplatelet drugs in 80%. Variation in region of origin resulted in only minor demographic imbalance. Patients with diabetes had more risk factors including history of coronary artery disease, but were similar to non-diabetic patients regarding limb haemodynamics and vascular lesions.

Conclusion: The clinical and vascular anatomy presentation of patients with CLI with ischemic skin lesions who were unsuitable for revascularization was homogeneous with little imbalance according to region of origin or diabetic status. The findings from this large CLI cohort are important for the understanding of the epidemiology of the disease.

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The prognostic value of ultrasound assessment of renal arteries at hypertensive patients with or without diabetes mellitus

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Objective: The aim of the study was to estimate how the ultrasound parameters of the renal arteries correlate with clinical events at hypertensive patients (pts) with or without diabetes mellitus (DM).

Material and method: 50 hypertensive pts (mean age = 61.3 ± 7.8 years, 52 % males) - group1, and 50 hypertensive pts with DM , matched for age and sex (mean age = 62.7 ± 7.3 years, 54 % males) - group2.

Vascular ultrasound parameters performed in renal arteries were: peak systolic velocity (PSV), resistance index (RI), end-diastolic velocity (EDV), systolic acceleration time (SAT), renal versus aortic systolic velocity ratio (RAR). All pts were evaluated during one year in order to detect the following complications: unstable angina (UA), non-ST-segment-elevation myocardial infarction (NSTEMI), chronic kidney disease (CKD), ischemic stroke (IS).

Results: In group1, UA was significantly associated with higher RI (0.76 ± 0.08 vs 0.57 ± 0.11 , p=0.03). In the same group, CKD was found in a significantly proportion at pts with longer SAT (73 ± 1.2 ms vs 48 ± 1.4 ms, p=0.01). In group2, UA was significantly associated with greater RI (0.75 ± 0.09 vs 0.59 ± 0.07 , p=0.02). NSTEMI was significantly more frequent at pts with greater RI (0.78 ± 0.08 vs 0.56 ± 0.12 , p=0.01) and with higher RAR (3.6 ± 0.2 vs 2.1 ± 0.3 , p=0.04). In the same group, CKD was found in a significantly higher proportion at pts with longer SAT (72 ± 1.1 ms vs 45 ± 1.3 ms, p=0.008) and with higher RAR (3.7 ± 0.1 vs 2.3 ± 0.2 , p=0.04).

Conclusions: Higher RI and greater RAR seem to predict a worse mid term outcome (one year) concerning cardiovascular events at hypertensive pts, especially with DM. Moreover, greater RAR appears to have more powerful mid term prognostic value for incidence of acute coronary syndromes without ST-segment-elevation at hypertensive pts with DM. Longer SAT may have a relative good correlation with the development of CKD in both groups of pts.