P1.01: ASSOCIATION OF CAROTID STRAIN AND PRIOR RISK OF CARDIOVASCULAR DISEASE - RESULTS FROM THE SWISS AIR POLLUTION AND LUNG AND HEART DISEASE IN ADULTS COHORT STUDY (SAPALDIA3)


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Poster Presentation Abstracts

P1 — Epidemiology

P1.01 ASSOCIATION OF CAROTID STRAIN AND PRIOR RISK OF CARDIOVASCULAR DISEASE – RESULTS FROM THE SWISS AIR POLLUTION AND LUNG AND HEART DISEASE IN ADULTS COHORT STUDY (SAPALDIA3)

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Objective: Currently, patients are sent to coronary angiography based on clinical presentation, positive exercise testing and assessment of global cardiovascular risk with particular emphasis on early detection of organ damage. Aim of our study was to evaluate the potential of a complete vascular ultrasound examination to estimate the actual presence of plaque on coronary.

Design and method: In 163 in-patients with a clinical indication for coronary angiography (CA), we obtained: blood pressures (BP), creatinine (Cr) and glycaemia (G) values, a complete transthoracic echocardiography with measure of Doppler velocity in proximal anterior descending coronary (vLAD), and carotid IMT and PWV (Esaote gold 70). We then divided the group in G1 (N=96) (patients with at least one significant coronary stenosis), and G2 (N=67) (unaffected coronary).

Results: G1 and G2 had similar ages (66±11 vs 65±10 yrs, means±SD), BMI (26.4±4 vs 27.4±4 kg/m²) and diastolic BP (80±10 vs 78±9 mmHg, p=NS), while G1 showed higher systolic BP (135±20 vs 127±17 mmHg, p<0.05), blood G (119±42 vs 104±35 mg/dl, p<0.05), Cr (1.04±0.48 vs 0.85±0.17 mg/dl, p<0.01), carotid IMT (811±165 vs 711±153 um, p<0.001), carotid PWV (10±2.61 vs 8.87±2.39, p<0.05), and vLAD (64±38 vs 41±10 cm/sec, p<0.0001). The variables that showed a correlation with the number of affected vessels were: blood G (r=0.21, p<0.01), Cr (r=0.23, p<0.005), IMT (r=0.25, p<0.01), and vLAD (r=0.24, p<0.0001).

Conclusions: These preliminary results suggest that peripheral artery structure and function assessed non invasively are representative of coronary status. Moreover transthoracic Doppler flow assessed on proximal LAD is well correlated with the presence and the number of affected coronaries. A complete ultrasound and clinic evaluation help in the decision making process of the coronary patient.

P1.03 ALDOSTERONE ANTAGONISTS REVERSE EFFECTS OF CARDIOTONIC STEROIDS ON VASCULAR ELASTICITY AND COLLAGEN SYNTHESIS

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Endogenous cardiotoxic steroids (CS), including marinobufagenin (MBG) stimulate vascular synthesis of collagen. Because aldosterone antagonists competitively antagonize effect of CS on the Na/K-ATPase (NKA) (Hyper tension 2010;56:914-9), we hypothesized that aldosterone antagonists would reverse the pro-fibrotic effects of MBG.

Explants of thoracic aortae from Wistar rats were cultured for 24 hours in the presence of vehicle or MBG (100 nmol/L) with or without 1 umol/L amlodipine. A complete ultrasound examination to estimate the actual presence of plaque on coronary was performed.

Design and method: In 163 in-patients with a clinical indication for coronary angiography (CA), we obtained: blood pressures (BP), creatinine (Cr) and glycaemia (G) values, a complete transthoracic echocardiography with measure of Doppler velocity in proximal anterior descending coronary (vLAD), and carotid IMT and PWV (Esaote gold 70). We then divided the group in G1 (N=96) (patients with at least one significant coronary stenosis), and G2 (N=67) (unaffected coronary).

Results: G1 and G2 had similar ages (66±11 vs 65±10 yrs, means±SD), BMI (26.4±4 vs 27.4±4 kg/m²) and diastolic BP (80±10 vs 78±9 mmHg, p=NS), while G1 showed higher systolic BP (135±20 vs 127±17 mmHg, p<0.05), blood G (119±42 vs 104±35 mg/dl, p<0.05), Cr (1.04±0.48 vs 0.85±0.17 mg/dl, p<0.01), carotid IMT (811±165 vs 711±153 um, p<0.001), carotid PWV (10±2.61 vs 8.87±2.39, p<0.05), and vLAD (64±38 vs 41±10 cm/sec, p<0.0001). The variables that showed a correlation with the number of affected vessels were: blood G (r=0.21, p<0.01), Cr (r=0.23, p<0.005), IMT (r=0.25, p<0.01), and vLAD (r=0.24, p<0.0001).

Conclusions: These preliminary results suggest that peripheral artery structure and function assessed non invasively are representative of coronary status. Moreover transthoracic Doppler flow assessed on proximal LAD is well correlated with the presence and the number of affected coronaries. A complete ultrasound and clinic evaluation help in the decision making process of the coronary patient.