P1.02: ACTIVE PREVENTION STUDY: ATHEROSCLEROSIS CAROTID-Coronary INVESTIGATION BY ECHOGRAPHY


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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)

S. Caviezel 1, J. Dratva 2,3, E. Schaffner 2, C. Schindler 2,3, N. Probst-Hensch 2,3, N. Künzli 2,3, J. M. Gaspoz 4, T. Rochat 4, A. Schmidt-Trucksäss 1

1 Institute of Exercise and Health Sciences, Div. Sports Medicine, University of Basel, Basel, Switzerland
2 University of Basel, Basel, Switzerland
3 Department of Community Medicine and Primary Care, University Hospitals of Geneva, Geneva, Switzerland
4 Division of Pulmonary Medicine, University Hospitals of Geneva, Geneva, Switzerland

Increasing carotid stiffness is associated with an ascending atherosclerotic risk and cardiovascular events. Therefore early risk detection can prevent stroke and myocardial infarction.

We analyzed ultrasound clips of average strain over a standardized 1cm-segment over at least one heart cycle in 1929 participants of the SAPALDIA3 cohort study (mean 68.4(8.2) years, range 50-81 years, 41.2% men). Strain was defined as cyclic deformation of lumen diameter expressed in percent change. Furthermore we assessed the risk of cardiovascular disease with the European Systematic Coronary Risk Evaluation (SCORE) based on data from SAPALDIA3 in 2002 and divided the SCORE into three categories (G1: risk of 1% or less, G2: risk of 2 to 4%, G3: risk of more than 5%). The association between strain and this categorical risk measure was assessed using multiple linear regressions, with and without additional adjustment for sex, age and brachial pulse pressure (PP). Results are expressed as adjusted means with 95%-confidence intervals.

Mean strain was 7.22(7.13, 7.31) in G1, 6.43(6.31, 6.55) in G2 and 5.64(5.39, 5.89) in G3, these differences being statistically significant (p<0.001). The difference still existed when strain was adjusted for current PP (G1: 7.27(7.17, 7.36), G2: 6.34(6.21, 6.46), G3: 5.41(5.14, 5.67)) or sex (G1: 7.24(7.14, 7.33), G2: 6.39(6.26, 6.52), G3: 5.54(5.27, 5.80)). After adjustment for age (G1: 6.97(6.88, 7.07), G2: 6.91(6.77 7.05), G3: 6.85(6.55 7.16)) there was no significance between the different risk groups anymore. The present data suggest that prior risk assessment can predict strain, but current age seems to be a stronger predictor.

P1.02 ACTIVE PREVENTION STUDY: ATHEROSCLEROSIS CAROTID-CORONARY INVESTIGATION BY ECHOGRAPHY

C. F. Cesana 1, S. F. Soriano 1, C. P. Campadello 1, C. P. Canova 1, F. R. Facchetti 1, F. I. Faggiano 2,3, M. G. Mureddu 2,3, G. N. Galbazzi 4,8, C. S. Caret 3,5, M. M. M. Mulesan 5,6, R. F. Rigo 7,8, M. A. Moreo 1,8, C. G. Giannattasio 1,8

1 Cardiology IV Unit, Niguarda Hospital and Milano-Bicocca University, Milano, Italy
2 Cardiology Department, Spedali Civili di Brescia, Brescia, Italy
3 Cardiology Department, Ospedale S. Giovanni, Roma, Italy
4 Cardiology Department, Azienda Ospedaliera-Universitaria, Parma, Italy
5 Internal Medicine Department, Messina University, Messina, Italy
6 Clinical Medicine Division, Spedali Civili and Brescia University, Brescia, Italy
7 Cardiovascular Department, Ospedale dell’Angelo, Mestre-Venezia, Italy
8 On behalf of Apres Collaborative Group, Milano, Italy

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 coronaries.

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 coronaries).

Results: G1 and G2 had similar ages (66±11vs65±10yrs, means±SD), BMI (26±4vs27±4g/m2) and diastolic BP (80±10vs78±9mmHg, p=NS), while G1 showed higher systolic BP (135±20vs127±17mmHg, p<0.05), blood G (119±4vs104±35mg/dl, p<0.05), Cr (1.04±0.48vs0.85±0.17mg/dl, p<0.01), carotid IMT (811±163vs711±153um, p<0.001), carotid PWV (10±2.61vs8.87±2.39, p<0.05), and vLAD (64±3vs41±10cm/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=0.4, 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.