

be noticed. Some of them were CD68-immunoreactive while others were both vimentin- and S-100 immunoreactive. Our results show significant hypocellularity in subendothelium, followed by apoptotic smooth muscle cells and CD3 and CD45 immunoreactivity.

**Conclusion:** Some of foam cells in atherosclerotic aortic aneurysm develop from monocyte-macrophage lineage (CD68-immunoreactive) while others originate from smooth muscle cells (vimentin and S-100-immunoreactive). The smooth muscle cells show synthetic phenotype. Diminution in cell numbers is the result of necrosis and apoptosis.

**Keywords:** atherosclerotic aortic aneurysm, smooth muscle cells, re-modeling.

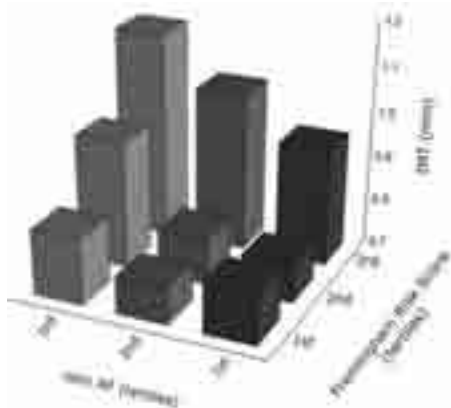
#### PO14-361 SKIN AUTOFLUORESCENCE IS ASSOCIATED WITH INTIMA MEDIA THICKNESS AND COMPLEMENTS COMMONLY USED CARDIOVASCULAR RISK SCORES

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**Background and Aims:** Skin autofluorescence (AF) is a non-invasive marker for Advanced Glycation Endproducts which are protein bound compounds derived from glycaemic and oxidative stress. We aimed to assess whether skin AF is associated with carotid intima media thickness (IMT) and vascular risk factors (VRFs), and complements cardiovascular risk scores in identifying subjects with increased IMT.

**Methods:** This was a cross-sectional local sub study to the "Carotid Intima Media Thickness and IMT-Progression as Predictors of Vascular Events in a High Risk European Population (IMPROVE)" study. 186 subjects with  $\geq 3$  VRFs without a history of cardiovascular disease (CVD) were included. Skin AF was measured on the lower arm, using a prototype of the current AGE-Reader. IMT was measured with a high-resolution ESAOTE ultrasound system.

**Results:** Skin AF correlated with IMT ( $r=0.15$ ;  $P=0.039$ ), C-reactive protein ( $r=0.19$ ;  $P=0.015$ ), leukocyte count ( $r=0.27$ ;  $P<0.001$ ), waist circumference ( $r=0.24$ ;  $P=0.002$ ), BMI ( $r=0.25$ ;  $P=0.001$ ), and fasting glucose ( $r=0.21$ ;  $P=0.007$ ), and was higher in smokers ( $P=0.038$ ), even after correction for age. Combining FRS or SCORE with skin AF improved the prediction of IMT (see figure).



**Conclusion:** Skin AF is age independently associated with carotid IMT, inflammation, and VRFs, and may add incremental information to global risk assessment scores in identifying asymptomatic subjects at high risk for CVD.

#### PO14-362 CAROTID INTIMA-MEDIA THICKNESS AUGMENTS FRAMINGHAM SCORING IN ASSESSING CV RISK IN METABOLIC SYNDROME PATIENTS

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**Objective:** We compared the presence of carotid artery plaque to Framingham global 10-year CHD risk estimates (FRS) in determining the level of CV risk in patients with metabolic syndrome (MS).

**Methods:** Patients referred to our prevention clinic were evaluated for metabolic syndrome by the ATP III criteria and evaluated for risk using FRS and digital B-mode ultrasound to identify the presence of carotid artery plaque. Plaque was defined as an area of intima-media thickness (IMT)  $\geq 1.2$ mm. Framingham 10-year risk categories included moderate risk ( $<10\%$ ), moderately high risk ( $10-20\%$ ) and high risk ( $>20\%$ ).

**Results:** A total of 100 patients at baseline met inclusion criteria. Mean age was  $57 \pm 9$  years; male, 66%; waist circumference (WC):  $> 40/35$  inches (males/females), 63%; diabetes, 18.6%; current smokers, 7.8%; hyperlipidemia, 99%; and, hypertensive, 91%. Initial WC, HDL-C, TG, SBP, DBP, and glucose:  $41 \pm 5$  in,  $47 \pm 14$  mg/dL,  $176 \pm 109$  mg/dL,  $134 \pm 14$  mmHg,  $85 \pm 12$  mmHg, and  $101 \pm 14$  mg/dL, respectively. Carotid plaque was identified in 84.0% of the patients. MS patients with plaque included thirty-three of the forty-three moderate ( $<10\%$ ) FRS patients, twenty-three of twenty-four moderately high ( $10-20\%$ ) FRS patients, and twenty-eight of thirty-three high risk ( $>20\%$ ) FRS patients. Thus, 56% of the MS patients who were not identified as high risk by FRS were actually found to be high risk with an IMT  $\geq 1.2$ mm.

**Conclusion:** Carotid IMT is a powerful adjunct clinical tool to FRS in determining CV risk in metabolic syndrome patients.

#### PO14-363 LOWER PLASMA ADIPONECTIN DETERMINES INCREASED INTIMA MEDIA THICKNESS ASSOCIATED WITH TYPE 2 DIABETES MELLITUS AND WITH MALE GENDER

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We tested the extent to which plasma adipokine levels contribute to the increased carotid artery intima media thickness (IMT) associated with type 2 diabetes mellitus and with male gender, independently of conventional cardiovascular risk factors, insulin resistance and plasma C-reactive protein (CRP).

In 84 type 2 diabetic patients and 85 control subjects, IMT (mean of 3 segments of both carotid arteries by ultrasonography), insulin resistance (HOMA<sub>IR</sub>), plasma CRP, lipids, adiponectin, leptin, resistin and tumor necrosis factor-alpha (TNF-alpha) were measured. In diabetic patients, IMT ( $p < 0.001$ ), mean arterial pressure ( $p < 0.001$ ), HOMA<sub>IR</sub> ( $p < 0.001$ ), plasma CRP ( $p = 0.003$ ), triglycerides ( $p = 0.037$ ), leptin ( $p = 0.023$ ), resistin ( $p = 0.003$ ) and TNF-alpha ( $p = 0.003$ ) levels were higher, whereas HDL cholesterol ( $p < 0.001$ ) and adiponectin ( $p < 0.001$ ) were lower compared to control subjects. Plasma adiponectin ( $p < 0.001$ ) and leptin ( $p < 0.001$ ) were substantially lower in men than in women. IMT was positively and independently associated with age ( $p < 0.001$ ), diabetes ( $p = 0.049$ ) and male gender ( $p = 0.002$ ) in a multivariate regression model, not including other variables. Further analyses showed that IMT was positively determined by age ( $p < 0.001$ ) and triglycerides ( $p = 0.038$ ) and negatively determined by adiponectin ( $p < 0.001$ ), without independent effects of diabetes, gender and HOMA<sub>IR</sub>.

In conclusion, increased IMT in type 2 diabetes may to a considerable extent be explained by lower plasma adiponectin and higher triglycerides, but not by leptin, resistin and TNF-alpha. The gender effect on IMT is related to lower plasma adiponectin.