coronary microvascular dysfunction (CMD) in asymptomatic patients affected by Systemic Sclerosis (SSc), using dipyridamole stress echocardiography, and to stratify our results according to the limited and the diffuse form of the disease.

Methods: We enrolled 19 consecutive patients (16 females and 3 males), with the diffuse (dSSc n=7) and limited form of SSc (ISSc n=12). None had history of atherosclerotic coronary disease or symptoms that could suggest cardiac involvement. All underwent coronary flow reserve (CFR) examination. Peak diastolic coronary flow velocities were measured in left anterior descending artery by pulsed wave Doppler at baseline and after dipyridamole infusion (0.84 mg/min/kg). CFR was calculated as the ratio of hyperemic to baseline peak diastolic velocities. Wall motion score index (WMSI) was evaluated at base-line and during stress. 20 healthy subjects (5 females and 15 males) were enrolled as controls.

Results: The mean age of patient was 51.89 ±13.58 (16 females and 3 males), while the mean age of controls was 37.1±10.78 (5 females and 15 males) (p=0.001). Mean CFR was 1.96 ±0.62 in SSc patients and 2.69 ±0.47 in controls (p=0.001). Abnormal values of CFR (<2) were significantly more prevalent than in controls: 10 (52.6%) patients had an impaired CFR, while all the controls had a normal CFR (10/19 vs 0/20; p=0.001). There was a trend towards lower CFR values in dSSc than in ISSc patients (1.72±0.32 vs 2.1±0.51; p=0.06). Moreover, the dSSc subgroup was characterized by a higher prevalence of impaired CFR than the ISSc subgroup (6/7 vs. 4/12; p=0.05). An inverse relationship between the time since the onset of Raynaud’s phenomenon and CFR values was observed in the ISSc group (correlation coefficient -0.583; p=0.046). Neither patients nor controls had wall kinetic abnormalities during dipyridamole administration, leading us to assume that CFR reduction is probably due to CMD.

Conclusions: CMD was found in almost a half of the asymptomatic SSc patients enrolled. This is especially evident in patients affected by the diffuse form of the disease, while the limited form seems to have a delayed reduction. These data highlight the importance of an exhaustive cardiac evaluation in all SSc patients, even at an early stage, including non-invasive evaluation of the CFR.

P5500 I BEDSIDE
The excessive proteinase activation affects myocardial perfusion in patients with acute coronary syndrome undergoing PCI
A. Skoromna. Dnipropetrovsk State Medical Academy. Dnipropetrovsk, Ukraine

Important regulators of extracellular matrix degradation, matrix metalloproteinases (MMPs), are known to induce atherosclerotic plaque rupture because of the degradation of collagen fibers in the fibrous cap and elevate in the patients with acute coronary syndrome (ACS). MMP-2 showed to be an independent predictor of prothrombotic adverse events in ACS patients. We aimed to investigate the possible association between these enzymes activity and objective coronary angiographic parameters of epicardial or myocardial perfusion in patients with ACS. However, little is known about the correlation between MMP activity and myocardial blush grade (MBG) in patients with myocardial infarction undergoing PCI.

Methods: A total of 94 patients with ACS, who underwent primary PCI were included. The serial changes of intracoronary and venous serum MMP-9, MMP-2 activity (gelatin-zymography; referent value ~100% from normal subjects plasma pool) were investigated in 362 samples of ACS pts with before and after procedure and at discharge (7th day) after uncomplicated stent implantation.

Results: Besides of the natural interrelation between the TIMI blood flow score and MBG (R:0.74, P = 0.03), we first identified the correlation between myocardial circulation and MMP activity level, MMP-2 negatively correlated with myocardial blush grade both in coronary (R: -0.474; P < 0.001) and peripheral blood (R: -0.365; P = 0.001), while MMP-9 had a positive interrelation with MBG in coronary (R: 0.754; P < 0.005) and peripheral blood (R:0.364; P < 0.02) before and after PCI.

Conclusion: Lower MMP-2 activity levels both in coronary artery and peripheral blood can be used to predict worse coronary angiographic outcomes and may be further targets of active investigation for wide use as risk predictors.

P5500 I BEDSIDE
Individuals with early onset (premature) coronary artery disease display impaired myocardial microvascular endothelial function: studies using laser speckle contrast imaging
E. Tibirica1, A. De Lorenzo2, G.M.M. Oliveira2, G. Huguenin2, E.G. Souza2
1 Oswaldo Cruz Institute, FIOCRUZ, Rio de Janeiro, Brazil; 2 National Institute of Cardiology, Rio de Janeiro, Brazil; 3 Federal University of Rio de Janeiro (UFRJ), Rio de Janeiro, Brazil

Purpose: Laser speckle contrast imaging (LSCI) provides an innovative approach to the non-invasive evaluation of systemic microvascular endothelial function. In this study we assessed skin microvascular reactivity in individuals with early onset coronary artery disease (EOCAD, diagnosis at less than 45 years of age) using LSCI coupled to pharmacological and physiological stimuli.

Methods: Skin microvascular blood flow was continuously monitored in the forearm using LSCI. Acetylcholine (ACH) and endothelin-1 (ET-1) were used to perform experiments consisting of ACH and ET-1 dose-response curves using the data from the pre-treatment baseline period as the baseline

Results: The mean age of patients was 37.8±12.4 years (16 females and 3 males) and the mean age of controls was 36.9±12.4 years (5 females and 15 males) (p=0.001). Mean CFR was 1.96 ±0.62 in SSc patients and 2.69 ±0.47 in controls (p=0.001). Abnormal values of CFR (<2) were significantly more prevalent than in controls: 10 (52.6%) patients had an impaired CFR, while all the controls had a normal CFR (10/19 vs 0/20; p=0.001). There was a trend towards lower CFR values in dSSc than in ISSc patients (1.72±0.32 vs 2.1±0.51; p=0.06). Moreover, the dSSc subgroup was characterized by a higher prevalence of impaired CFR than the ISSc subgroup (6/7 vs. 4/12; p=0.05). An inverse relationship between the time since the onset of Raynaud’s phenomenon and CFR values was observed in the ISSc group (correlation coefficient -0.583; p=0.046). Neither patients nor controls had wall kinetic abnormalities during dipyridamole administration, leading us to assume that CFR reduction is probably due to CMD.

Conclusions: CMD was found in almost a half of the asymptomatic SSc patients enrolled. This is especially evident in patients affected by the diffuse form of the disease, while the limited form seems to have a delayed reduction. These data highlight the importance of an exhaustive cardiac evaluation in all SSc patients, even at an early stage, including non-invasive evaluation of the CFR.

P5500 I BEDSIDE
Decreased plasma level of asymmetric dimethylarginine at the culprit lesion site after primary percutaneous coronary intervention
K. Stammbau1, J. Lorni2, J.C. Guililand1, Y. Cottil3, L. Rocchetta3, M. Zeller3, L. Lorgis2, C. Vergey1.1 Inserm UMR866, Equipe LPPCM, Dijon, France; 2 University Hospital Center, Department of Cardiology, Dijon, France

Introduction: Asymmetric dimethylarginine (ADMA) is a endogenous competitive inhibitor of endothelial NO synthase leading to a decreased NO bioavailability, increased oxidative stress, resulting in an endothelial dysfunction. Recent data suggested its implication in cardiovascular pathologies and its association with a worse prognosis after ST elevation myocardial infarction (STEMI). The aim of our study was to assess the potential difference between systemic and local plasma levels of ADMA in patients after primary percutaneous coronary intervention (PPCI).

Methods: Blood samples from 38 consecutive patients hospitalized >24 hours after symptom onset for STEMI and admitted to the coronary care unit of from the University Hospital, Dijon were taken from the peripheral vein, the culprit artery using thrombectomy aspiration catheter and the non culprit artery. Plasma levels of ADMA were determined using high-performance liquid chromatography.

Results: Patients were pretty young (55 (47-64), most were men (33 (72.8%), and smokers (31 (81.6%), and more than 13% arrived with a Killip score >1. Left anterior descending artery was the culprit artery in 21 patients (55.3%). The median left ventricular ejection fraction was 55 (45-60). ADMA plasma level in the culprit and non culprit arteries were significantly lower than in the vein (0.34±0.08 and 0.37±0.09 vs 0.43±0.11 nmol/L, p<0.05). Thus, there was a trend for a lower ADMA plasma level in the culprit artery than in the non culprit artery (p=0.071).

Conclusions: LSCI identifies systemic microvascular endothelial-dysfunction in individuals presenting with EOCAD and thus could be used as an early peripheral marker of the atherothrombotic disease.