(79.82±15.25% vs. 74.51±5.87%;p=0.274 for fibrotic and 2.83±2.60% vs. 2.40±1.58%;p=0.617 for calcific tissue). Both patient groups had similar plaque necrolipidic tissue content (17.8±13.49% vs. 23.10±5.35%;p=0.219 in prediabetic vs. diabetic patients). Fasting glucose, HbA1c and lipid parameters did not show correlation with plaque tissue characteristics in prediabetic patients. C peptide had negative correlation with fibrotic (r=-0.65;p=0.009) and positive correlation with necrotic (r=0.70;p=0.004) and calcific tissue content(r=0.52;p=0.046).
**Conclusions:** Prediabetic patients had similar plaque vulnerability with lower lipidic tissue content as patients with diabetes. C peptide was an independent predictor of lower fibrotic and higher necrotic and calcific tissue content suggesting its relation with plaque vulnerability.

## PO110.
## NILE RED QUANTIFIER: A NOVEL AND QUANTITATIVE TOOL TO STUDY LIPID ACCUMULATION IN PATIENT-DERIVED CIRCULATING MONOCYTES USING CONFOCAL MICROSCOPY

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**Aim:** The inflammatory profile of circulating monocytes is an important biomarker for atherosclerotic plaque vulnerability. Recent research revealed that peripheral lipid uptake by monocytes alters their phenotype towards an inflammatory state and this coincides with an increased lipid droplet (LD) content. Determination of lipid content of circulating monocytes is, however, not very well established. Based on Nile Red (NR) LD-imaging using confocal microscopy and computational analysis, we developed Nile Red Quantifier (NRQ); a novel quantification method to assess lipid droplet content in monocytes.
**Methods:** Freshly isolated circulating monocytes were used for the NR-staining procedure. Freshly derived low-density lipoproteins (LDL) were isolated from plasma using density-gradient ultracentrifugation. Subsequently, circulating monocytes were incubated with LDL in a dose- and time-dependent manner to which they were assessed for intracellular LD-content performed with the newly developed NRQ.
**Results:** In monocytes stained with NR, we clearly distinguish, based on 3D-imaging, phospho- and exclusively intracellular neutral lipids. Extraction of LDs and subsequent LD-composition analysis showed that LDs contain primarily, cholesterol esters and trigylcerides. Next, we developed and validated NRQ, a semi-automated quantification program which detects alterations in lipid accumulation after exposure of isolated monocytes to freshly derived LDL in a time- and dose dependent fashion.
**Conclusions:** In conclusion, NR-staining is a suitable procedure to detect small differences in lipid droplet content in circulating monocytes using NRQ and could therefore be used as a potential biomarker for cardiovascular disease.

## PO111.
## SELF-CONFIRMING MOLECULAR IMAGING OF ACTIVATED PLATELETS VIA IRON OXIDE NANOPARTICLES DISPLAYING UNIQUE DUAL MRI CONTRAST

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**Aim:** Magnetic resonance imaging (MRI) has been used as a powerful and indispensable tool in medical research and clinical diagnosis due to its high spatial resolution and non-limited penetration depth. The simultaneous use of positive and negative MRI imaging that employs the same contrast agents will significantly improve the detection accuracy. Here we report for the first time the development of multimodal iron oxide nanoparticles for targeted MRI of thrombosis using a combination of chemical and biological techniques.
**Methods:** Monodispersed water-soluble and biocompatible ultra-small magnetic iron oxide nanoparticles (IONPs) were generated from a high-temperature co-precipitation route and appeared to be efficient positive and negative dual contrast agents of magnetic resonance imaging. Using a unique chemo-enzymatic approach involving copper-free click chemistry and Staphylococcus aureus sortase A enzyme, IONPs were functionalized with single-chain antibody (scFv) for targeting purpose. The IONPs were also labeled with fluorescent molecules for optical imaging purpose.
**Results:** The antigen binding activity of the scFv was retained and resulted in the successful targeting of contrast agents to thrombosis as demonstrated in a range of in vitro and in vivo experiments. T1- and T2-weighted MRI of thrombosis was recorded simultaneously which enables self-confirmation of images and leads to a greater diagnostic accuracy.
**Conclusions:** We have successfully developed targeted multimodal IONPs for thrombosis imaging which displays a unique dual MRI contrast. The use of these nanoparticles can potentially bring the validity of MR imaging for cardiovascular disease to a higher level.

## PO112.
## EVALUATION OF INTRACRANIAL CIRCULATION BY TRANSCRANIAL ULTRASOUND: USEFUL METHOD FOR SELECTION OF PATIENTS WITH ASYMPTOMATIC CAROTID STENOSIS TO CAROTID ENDARTERECTOMY. SINGLE CENTER EXPERIENCE

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**Aim:** Of all ischemic strokes 15-20% result from carotid occlusive disease.Of these up to 80% occur without previous transient ischemic attack The prevalence of asymptomatic carotid artery stenosis (CAS) in general population is 2-8%.Annual risk of ipsilateral stroke is currently estimated to be 1-2% meaning that routin CAE is not justified.However there are patients with substantial higher risk whom CAE is still indicated in.Hence risk stratification is needed.One of the options is to test intracranial haemodynamic by Transcranial Color-coded Sonography (TCCS) at rest and cerebrovascular reserve (CVR).There is evidence that impaired CVR is an independent risk factor for strokes (low-flow events)..Other contribution of transcranial US to the risk stratification of patients with asymptomatic CAS is possibility to test risk of cerebral microembolisation.. Microembolic signals (MES) can be detected by transcranial dopplerometry (TCD) and are independent risk factor for future ischemic cerebral events
**Methods:** In our centre patients with min 60% ICA asymptomatic stenosis who are considered for CEA are systematically tested by TCCS/TCD for CVR and MES. Positive result of either test is a strong argumet for surgery/stentning.
**Results:** Analysis of consecutive 161 patients recently investigated byTCD is to be presented including their demography, risk factors, US findings on extracranial arteries and clinical follow-up data
**Conclusions:** Management of patients with asymptomatic CAS is controversial.Risk stratification is needed.TCCS/TCD can test both-risk of atheroembolic and haemodynamic ischemic cerebral events.In our clinic we have recently introduced both technics and we test patients with asymptomatic significant CAS where CEA is considered

## PO113.
## CORONARY VESSELS ATHEROSCLEROSIS AND GOUT

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