microcirculation. The aim of our study was to determine relation between retinal artery disease and cSVD against the background of hypercholesterolemia.

Methods: 35 patients with subcortical ischemic vascular dementia (I group), 25 patients with Ill-defined cognitively impaired (II group) and 20 healthy volunteers (III group) of comparable age and sex were studied. We investigated deep white matter and periventricular hyperintensities on MRI and eyeground, and compared with the level of hypercholesterolemia.
Results: White matter lesions and change of fundus as small capillary hemorrhages and lipid (atherosclerotic) deposits were more common in patients with ischemic vascular dementia than in those with Ill-defined cognitively impaired or healthy volunteers ($P < 0.01$). In the first group the levels of cholesterol were varied within 6.8-7 mmol/l, in the second group were 6-6.5 mmol/l ($P < 0.001$), healthy volunteers had the normal levels of cholesterol ($P < 0.001$).
Conclusion: The changes of fundus and correlation of cholesterol is one of manifestation in small vessels disease of brain and can be used as diagnostic criteria for prognostication ischemic vascular dementia.

EAS-0792.
INTIMAL HYPERPLASIA PROMOTES VASCULAR LIPOPROTEIN RETENTION AND ACCELERATES FORMATION OF ATHEROSCLEROTIC LESIONS

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Aim: Atherosclerosis preferentially develops in vessels that first form intimal hyperplasia, a thickening of the intimal vessel wall layer consisting of vascular smooth muscle cells and extracellular matrix (ECM). However, it is not known whether there is a causal link between the formation of intimal hyperplasia and subsequent development of atherosclerosis.

Here we tested the hypothesis that intimal hyperplasia directly promotes vascular retention of apolipoprotein B (apoB)-containing lipoproteins, the key initiating step in atherosclerosis development.
Methods: We surgically induced intimal hyperplasia in the common carotid artery of apoB transgenic mice, which have elevated low-density lipoprotein (LDL) levels, and in wild-type mice, which have low LDL levels. These mice were fed a chow diet.
Results: We found that intimal hyperplasia promoted lipoprotein retention in the ECM of apoB transgenic mice but not of wild-type controls. No lipoproteins were detected in sham-operated regions. The intimal hyperplasia contained high levels of glycosaminoglycans, and proteoglycans, in particular biglycan and perlecan, co-localized with retained lipoproteins. However, the retention of lipoproteins in intimal hyperplasia did not progress into atherosclerotic lesions. In contrast, rapid atherosclerotic progression in intimal hyperplasia was observed in LDL receptor–deficient mice with hypercholesterolemia, which was induced by switching these mice to a western diet 3 weeks after surgery. No signs of atherosclerosis were seen in sham-operated mice with hypercholesterolemia or LDL receptor–deficient mice that remained on a chow diet.
Conclusion: These studies provide direct experimental evidence that intimal hyperplasia promotes vascular lipoprotein retention and accelerates formation of atherosclerotic lesions.

EAS-0849.
ASSOCIATION BETWEEN PLASMA ASYMMETRIC DIMETHYLARGININE LEVELS, INDICES OF VASCULAR FUNCTION AND DEMOGRAPHIC, HEMODINAMIC AND HUMORAL HYPERTENSIVE PATIENT CHARACTERISTICS

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Aim: The present study is proposing to investigate the relationship between structural and functional changes of arterial wall in a lot of patients with mild – moderate hypertension and the impact of hemodynamic, humoral and demographic characteristics on plasma asymmetric dimethylarginine levels of these patients.

Material and methods: ADMA levels were measured by high-performance liquid chromatography in 63 hypertensive patients and were correlated to indices of vascular function (FMD and IMT) and to blood pressure, cholesterol and glucose level, age, gender and smoking.
Results: ADMA increased in smokers with endothelial dysfunction compared with non smokers ($p < 0.001$). High levels of ADMA were correlated with female versus male ($p < 0.05$). The patient's ages was correlated positively with ADMA ($r = 0.7778$, $p = 0.000$). Hypertensive patient's ADMA was significantly correlated with IMT ($r = 0.5889$, $p = 0.0031$) but an inverse correlation with %FMD ($r = -0.8521$, $p = 0.000$). Blood pressure was significantly positively correlated with ADMA, special systolic ($r = 0.7915$, $p = 0.000$) versus diastolic ($r = 0.7656$, $p = 0.000$). Total cholesterol ($r = 0.7732$, $p = 0.000$), glucose ($r = 0.8547$, $p = 0.000$) and hs-CRP ($r = 0.8559$, $p = 0.000$) levels were positively correlated with ADMA values.
Conclusions: Plasma ADMA values are correlated of the degree of endothelial dysfunction in patients with mild – moderate hypertension. Higher plasma ADMA levels may provide a link between cardiovascular risk factors and their consequences on endothelial dysfunction and on progression of subclinical atherosclerotic lesion.

EAS-0980.
THERAPEUTIC APPLICATION OF REPEATED EXTRACORPOREAL SHOCK WAVE ACCOMPANIED BY MICROBUBBLES AND THROMBOLYTIC AGENT ADMINISTRATION IN THE RABBIT MODEL OF EMBOLIC COMMON CAROTID ARTERY OCCLUSION

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Aim: A plaque may rupture with high risk of subsequent thrombus-mediated acute clinical events such as myocardial infarction and stroke. The efficacy of intravenous thrombolytic agent recombinant tissue plasminogen activator is limited owing to a relatively poor recanalization rate and incomplete function recovery in the majority of treated patients. In this study, we developed an experimental electrohydraulic shock wave generator (0- 20 kv), and investigated its effectiveness on thrombus reduction in the rabbit common carotid artery.

Methods: Male New Zealand white rabbits were submitted to common carotid artery clot embolism. Then treatment group underwent repeated electrohydraulic shock wave therapy accompanied by recombinant tissue plasminogen activator and PESDA microbubbles administration. Blood volume flow and blood mean velocity were measured by color Doppler ultrasonography. Moreover, percentage of luminal cross-sectional area of stenosis were measured by B-mode ultrasound and histology at the occlusion region.
Results: Results showed a significant reduction in the mean value for blood mean velocity and the percentage of luminal cross-sectional area of stenosis and a significant increase in the mean value for blood volume flow in the treatment group compared with the other groups ($P<0.05$).
Conclusions: Enhanced thrombolytic effect of recombinant tissue plasminogen activator by inertial cavitation effect of PESDA microbubbles, induced by repeated shock wave, can cause to reduce the thrombus and significantly dilate the luminal cross-sectional area of stenosis. Repeated electrohydraulic shock wave therapy in combination with recombinant tissue plasminogen activator and PESDA microbubbles administration may be a potential treatment to thrombi occlusion.