

## Diagnosis and Treatment of Angiopathy in Diabetes

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The prevalence of diabetes is increasing world-wide. Diabetes and also the stage of prediabetes are well-known risk factors for microvascular and macrovascular diseases. Subjects with diabetes, but without manifest cardiovascular disease (CVD) have the same risk of CVD mortality as subjects with myocardial infarction. A 60-year old man/women with diabetes but without manifest CVD has ~6/7 years of life lost, compared to a subject without diabetes. These numbers increase to ~12/14 years if a patient with diabetes has established CVD. In respect to CVD myocardial infarction and stroke are the most widely known diseases that are being screened for in diabetes. However, peripheral artery disease may also place subjects with diabetes in a risk category, similar to the one with established CVD. If so, then peripheral artery disease may already represent a state of secondary prevention of CVD and CVD-mortality. There is much information in the literature supporting this hypothesis. For example in epidemiological studies the presence of peripheral artery disease poses even a somewhat higher risk of myocardial infarction (MI), stroke and CVD-mortality than history of MI.

Many patients with diabetes already have peripheral artery disease, prior to the manifestation of CVD. Thus, the question is; which diagnostic criteria should be used to screen for peripheral artery disease in a clinical setting? In this respect the ankle-brachial index is a well-established tool. If the results are suggestive of manifest peripheral artery disease Doppler ultrasound examination of the leg is the next step to evaluate the severity and locations if stenosis. In some cases MR-angiography or CT-angiography is required to precisely locate and evaluate the stenosis. Among the interventional procedures endovascular strategies, open surgery or hybrid therapies should be considered.

Pharmacological treatment of patients with peripheral artery disease with or without diabetes include antiplatelet agents such as aspirin or clopidogrel. Even the treatment with rivaroxaban seems promising (COMPASS trial). Statin therapy has been shown to cause reductions in all-cause mortality and CV events.

Furthermore, carotid artery plaques or carotid artery stenosis also pose subjects with diabetes at high risk of stroke. In this respect the diagnosis of carotid artery plaques or stenosis should be imple-

mented in the diagnostic setting of patients with long-standing diabetes or diabetes + metabolic syndrome. The diagnostic procedures include Duplex

ultrasound as first-line imaging. CT-angiography and MR-angiography help evaluating severity and extent of extracranial carotid stenosis if necessary.