The Metabolic Syndrome – common soil for diabetes and cardiovascular disease

Markolf Hanefeld

[1] Centre for Clinical Studies, Dept. Endocrinology and Metabolic Research, GWT, Technical University Dresden, Germany

Recently we observe a big bang in the prevalence of a cluster of diseases for which the term metabolic syndrome is now widely used. However, so far no unifying definition and generally accepted cut-off limits for the single traits exist. For long atherosclerotic vascular disease (AVD) was considered as late complication of type 2 diabetes. New data however show that diabetes and atherosclerosis develop in parallel. Therefore the question arises: Is there a common soil for both diseases. There is now a bulk of evidence from prospective epidemiological studies which demonstrate that there is a striking communality of risk factors for type 2 diabetes and AVD. Dysglycemia, Dyslipidemia, hypertension and central obesity are traits of the metabolic syndrome which predict type 2 diabetes as well as AVD. In 1990-2000 insulin resistance was considered to be the common soil for diseases of the metabolic syndrome and AVD. New investigations suggest that visceral obesity may be the primary anomaly leading to insulin resistance via lipacidemia and anomalies in adipocyte produced hormones. Furthermore in close interaction with insulin resistance low grade inflammation could be identified as a driving force for progression of glucose intolerance and plaque development. This has important consequences for prevention and treatment of the metabolic-vascular syndrome. In conclusion traits of the metabolic syndrome are significant predictors of type 2 diabetes as well as of AVD. Visceral obesity, insulin resistance and low grade inflammation are major components of the common soil which act in a vicious cycle.