of growth factors and transcription, subclinical inflammation and vascular lesions, among them, increased oxidative stress, activation and small arteries. Multiple mechanisms link hyperglycemia with problems in developed and emerging countries. Their complications HE/GP, APHP, INSERM U970, Paris, France

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Microvascular alterations are hallmarks of the long-term complications of hypertension and diabetes; however, it is now clear that microvascular changes occur very early in these conditions and may be important in their pathogenesis and progression from each component of the syndrome considered separately.

Moreover, there is increasing awareness that hypertension, insulin resistance, obesity, and dyslipidemia often cluster within individuals, producing the “metabolic syndrome” that is highly prevalent in industrialized countries and is associated with substantially increased overall and cardiovascular mortality. In these patients, target-organ damage may be increased to a greater extent than expected.

The microcirculation is generally taken to include the smallest arteries, the arterioles, capillaries, and venules. Exchange of gases, nutrients, and metabolites between the blood and tissues occurs almost exclusively in the microcirculation, and adequate perfusion via the microcirculatory network is essential for the integrity of tissue and organ function. It is noteworthy that microvascular changes that result from one risk factor could predispose to other risk factors. Microvascular rarefaction due to hypertension may directly reduce skeletal muscle uptake of glucose, resulting in reduced insulin sensitivity. Similarly, excessive adiposity that could predispose to other risk factors may be increased to a greater extent than expected.

The present review examines the role of microvascular dysfunction as an explanation for the associations among obesity, hypertension, and impaired insulin-mediated glucose disposal.

ISP19: Impaired glucose tolerance and cardiovascular risk

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Cardiovascular disease is responsible for nearly every other and premature death of the millions of people with diabetes worldwide. The excessive coincidence between diabetes and cardiovascular disease is alarming. Associations occur early in the pre-diabetic state and increase with progression to diabetes and the length of disease duration.

The relationship of impaired glucose tolerance and increased cardiovascular risk has been demonstrated in the “Silent Diabetes Study”, which analyzed more than 1015 “non-diabetic” patients undergoing coronary angiography By OGTT, 513 patients (51%) were classified with normal glucose tolerance, 10 (1%) with impaired fasting glucose, 349 (34%) with impaired glucose tolerance and 149 (14%) were diagnosed with diabetes. According to HbA1c measurements, 588 patients (58%) were classified as normal, 385 (38%) as borderline and 42 (4%) were diagnosed with diabetes. The proportion of patients with IGT and diabetes increased with the extent of CAD. No differences in HbA1c were seen in the groups with different extent of CAD (p = 0.652).

The results extent the results of the Euro Heart Survey, in which 10% of patients with CAD but without previously known diabetes fulfilled the WHO criteria for diabetes.

The STOP-NIDDM trial is the first study to investigate the relationship between lowering postprandial blood glucose by acarbose therapy and the development of cardiovascular events. In demonstrated that treatment of acarbose in IGT patients is associated with a significant reduction in cardiovascular endpoints. Myocardial infarction was reduced by 91% and the incidence of any CV event diminished by 49%. The Acarbose Cardiovascular Evaluation (ACE Trial) investigates cardiovascular-related morbidity and mortality in IGT subjects with a previous myocardial infarction or angina. In the trial, which compares the effects of Acarbose to Placebo over a 4-year study period, the transition to diabetes is also assessed. In the Nateglinide And Valsartan in Impaired Glucose Tolerance Outcomes