Hypertension and Type 2 Diabetes Mellitus
Metabolic Interface & Vascular Biology

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Abstract

The association of essential hypertension and type 2 diabetes mellitus (T2DM) is well recognized. This combination of co-morbidities, with the constellation of common risk factors, results in considerable disease burden with consequent loss of quality adjusted life years (QUALY). To the generally known mechanisms, particularly insulin resistance, underlying obesity, T2DM, hypertension and cardiovascular disease, has now been added the contributory role of low-grade inflammatory process. New insights into endocrinemetabolic interactions with vascular biology have highlighted the role of adiponectin and renin-angiotensin-aldosterone system. While adiponectin acts as an integrator of metabolic and inflammatory signals, its low levels are associated with obesity, T2DM and coronary heart disease. There is also negative correlation between circulating level of adiponectin and markers of inflammation including CRP, PAI-l and tissue plasminogen activator (tPA). In contrast to antiinflammatory role of adiponectin, angiotensin II is proinflammatory resulting in upregulation of inflammatory transcriptor factors such as NF-kappa B (NF-κB). These in turn lead to endothelial dysfunction and vascular injury. Advances in the understanding of molecular mechanisms may lead to rational development of new therapeutic interventions.

Key Words : Quality adjusted life years, inflammatory transciptor factors, endothelial dysfunction, vascular injury

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