특별 강연 I

Endothelial Function: From Bench to Clinical Practice

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The discovery of nitric oxide (NO) as a crucial endothelium-derived molecule for vascular relaxation and the recognition of the endothelium as more than a passive interface between blood and the vessel wall led to substantial progress in the field of vascular research. Endothelial dysfunction is a pathological condition characterized mainly by an imbalance between substances with vasodilating, antimitogenic, and antithrombogenic properties and substances with vasoconstricting, prothrombotic, and proliferative characteristics. Among the most important vasodilator molecules, particularly in muscular arteries, is NO, which also inhibits other key events in the development of atherosclerosis such as platelet adhesion and aggregation, leukocyte adhesion and migration, and smooth muscle cell proliferation. Endothelial dysfunction has been detected in the coronary epicardial and resistance vasculature and in peripheral arteries, and can be regarded as a systemic condition. Importantly, the process of atherosclerosis begins early in life, and endothelial dysfunction contributes to atherogenesis and precedes the development of morphological vascular changes. Over the past 25 years, many methodological approaches have been developed to measure the (patho) physiological function of the endothelium in humans. The aims of this talk are to give a short overview on the role of endothelial function from basic to clinical practice including the most commonly used methods to measure endothelial function in humans, and to summarize the clinical implications of endothelial dysfunction in the population and in individual patients. The possible future role of endothelial function measurement for individualized medicine is also considered.