The role of endothelial progenitor cells in cardiovascular diseases

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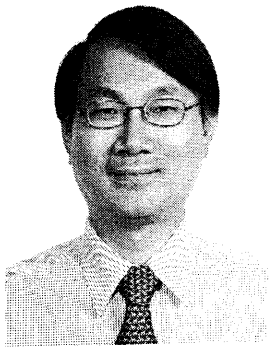
個人簡介



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講題：The role of endothelial progenitor cells in cardiovascular diseases

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"THE ROLE OF ENDOTHELIAL PROGENITOR CELLS IN ATHEROSCLEROSIS AND CARDIOVASCULAR DISEASES"

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Atherosclerosis is a systemic inflammatory disease of arterial wall and initiated by endothelial damage. Endothelium integrity is maintained by neighboring endothelial cells which migrate and proliferate to restore the injured endothelium. However, the injured endothelial monolayer may also be regenerated partly by circulating bone marrow-derived endothelial progenitor cells (EPCs). These circulating EPCs are mobilized endogenously triggered by tissue ischemia or exogenously by cytokine stimulation. Clinical studies demonstrated that levels of circulating EPCs are associated with vascular endothelial function and cardiovascular risk factors. Aging, hypertension, diabetes mellitus, and hypercholesterolemia have been shown to exert detrimental effects on EPC number and function. Reduced levels of circulating EPCs independently predict atherosclerotic disease progression and development of cardiovascular events. There are several ways to increase levels of circulating EPCs and improve their function by pharmacological strategies and lifestyle modification. Animal and clinical studies of cell therapy have shown that transplantation of autologous EPCs or other cellular pools enriched with vascular progenitors is feasible in both coronary and peripheral atherosclerotic diseases. Our studies have demonstrated that high glucose impairs early and late EPCs by modifying nitric oxide-related but not oxidative stress-mediated mechanisms. MMP-9 is essential for EPCs in ischemia-induced angiogenesis. Statins and red wine intake may increase the number and function of EPCs.