

Introduction and Objectives There is a close relationship between erectile dysfunction (ED) and cardiovascular disease. However, many young patients presenting with ED do not have clinical cardiovascular disease and even other well-known causes. We aimed to investigate the underlying pathogenesis of ED without known aetiology in young man with low risk of coronary heart disease.

Methods One hundred and twenty two patients and 33 normal controls under the age of 40 years were enrolled. Risk factors for coronary artery disease, endothelial function as measured by the endothelium-dependent flow-mediated dilation (FMD), and ED severity as measured by the International Index of Erectile Function-5 (IIEF-5) score was examined.

Results Although the values were all in the normal range, systolic blood pressure (SBP), total cholesterol and triglyceride, high sensitivity C-reactive protein (hs-CRP), carotid intima-media thickness (CIMT) and Framingham risk score (FRS) were significantly higher in patients with ED compared to the controls. FMD values were significantly lower in ED patients and correlated positively with the severity of ED ($r=0.714$, $p<0.001$). By multivariate logistic regression analysis, FMD, SBP, hs-CRP and FRS were significantly associated with ED. In receiver-operating characteristic (ROC) analysis, FMD had high ability to predict ED in young man with low FRS (area under the curve (AUC) 0.921, $p<0.001$). The cut-off value of FMD $<10.25\%$ had sensitivity of 82.8% and specificity of 100% for diagnosis of ED. FRS and hs-CRP were also predictor of ED (AUC 0.812, $p<0.001$; AUC 0.645, $p=0.011$, respectively).

Conclusions Subclinical endothelial dysfunction and low-grade inflammation may be the underlying pathogenesis of non-organic ED with no well-known aetiology. Young patients complaining ED should be screened for cardiovascular risk factors and possible subclinical atherosclerosis. Measurement of FMD, hs-CRP and FRS can improve our ability of early diagnosis and early treatment ED as well as subclinical cardiovascular disease in young males under the age of 40 years.

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SUBCLINICAL ENDOTHELIAL DYSFUNCTION AND LOW-GRADE INFLAMMATION PLAY ROLES IN THE DEVELOPMENT OF ERECTILE DYSFUNCTION IN YOUNG MAN WITH LOW RISK OF CORONARY HEART DISEASE

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