Tumor necrosis factor-alpha, lymphotoxin-alpha, and interleukin-10 gene polymorphisms and restenosis after coronary artery stenting.

Abstract:

Inflammation is the primary response to vessel wall injury caused by stent placement in coronary arteries. The cytokines tumor necrosis factor (TNF)-alpha, lymphotoxin (LT)-alpha, and interleukin (IL)-10 are critically involved in inflammatory reactions. The intensity of the inflammatory process and the angiographic or clinical outcome after stenting are influenced by genetic factors. We investigated the possibility that single nucleotide polymorphisms of the genes encoding TNF-alpha (-863C/A, -308G/A), LT-alpha (252G/A), and IL-10 (-1082G/A, -819C/T, and -592C/A) are associated with the incidence of restenosis, death, or myocardial infarction (MI) after coronary stenting. The gene variations are known to be correlated with transcriptional activity and/or protein production. Our study included 1,850 consecutive patients with symptomatic coronary artery disease who underwent stent implantation. Follow-up angiography was performed in 1,556 patients (84.1%) at six months after the intervention. We found that the polymorphisms are not associated with restenosis, death, or MI. In addition, we did not observe a relationship between polymorphism-specific haplotypes and adverse angiographic and clinical outcomes. In conclusion, functionally relevant polymorphisms of the genes for TNF-alpha, LT-alpha, and IL-10 do not represent genetic markers indicating the risk of restenosis, death,
or MI after coronary stenting.