
Interleukin-17 Serum Levels and TLR4 Polymorphisms in Ulcerative Colitis.
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Source
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Abstract
Background: Inflammatory bowel disease, an autoimmune disease, has two clinical manifestations including Crohn's disease and ulcerative colitis (UC). IL-17 has been the target of intensive research in autoimmune diseases. The influence of Toll like receptor 4 (TLR-4) gene polymorphisms on IL-17 production has also been revealed in UC patients and tissue inflammation in mice. Objectives: To investigate the association between the TLR-4 gene polymorphisms, Asp299Gly and Thr399Ile and IL-17 serum levels with ulcerative colitis. Additionally, we aimed to study modulation effects of forenamed gene polymorphisms on IL-17 serum levels in UC patients and controls. Methods: A total of 256 healthy controls and 85 UC patients enrolled in our study. DNA was extracted and PCR-RFLP technique was employed to determine Asp299Gly and Thr399Ile polymorphisms in TLR-4 gene and IL-17 serum levels were measured by ELISA method. Results: There was no significant difference between the frequency of Asp299Gly A>G and Thr399Ile C>T in UC patients and controls. While IL-17 serum levels in UC patients were significantly higher than controls (p=0.003), no significant difference in IL-17 levels between different genotypes existed. Additionally, a significant inverse relationship was observed between hemoglobin level and IL-17 serum levels in UC patients (p=0.039). Conclusions: Increased IL-17 serum levels in our UC patients might be explained through the synergistic activity of IL-17/IL-23 axis and pro-inflammatory cytokines, causing severe clinical outcome in patients with IBD. The prolonged excretion of blood in stool driven by inflammatory process which causes iron metabolism disorder and anemia may elucidate the inverse correlation between hemoglobin and IL-17 serum levels in UC patients. Lack of association between the TLR-4 gene polymorphisms and UC in our study was consistent with the results from other Caucasian populations.