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Original Article

Association between Endothelial Selectin (E-Selectin) Gene Polymorphisms and E-Selectin Level with Visceral Leishmaniais, in an ARMS-PCR Based Study

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Abstract:

Background: In the visceral leishmaniasis (VL), parasites reside in reticuluendothelial system, mainly in macrophages. Endothelial Selectin (E-selectin) might play an important role in leukocyte-endothelium interactions and inflammatory cell recruitment. The aim of this study was determining E-selectin level and its polymorphism in three groups, patients, seropositive and healthy individuals.

Methods: Serum soluble E-selectin levels as well as 2 polymorphisms of E-selectin (Ser128Arg and Leu554Phe) were measured in a cohort of patients with documented VL (n=64), a healthy control group (n=74) and a seropositive for VL but without any symptoms (n=81). Circulation concentration of E-selectin levels was measured by ELIS. The amplification refractory mutation system (ARMS)-PCR procedure was used for detecting polymorphisms.

Results: The mean of E-selectin levels significantly differed between three groups (P<0.026), and were increased in patients in comparison with other groups. Difference was more considerable between two groups of patients and healthy ones (patients 92.8 ng/ml; healthy individuals 71.9 ng/ml). Polymorphisms were associated with soluble E-selectin levels and altogether explained 14.4%, 7.2%, and 8.7% in patients, seropositive and seronegative healthy individuals, respectively. Distribution of polymorphisms of 128Ser/Arg and 554Leu/Phe among three groups was not different significantly; however, there was a considerable arrangement in distribution of Ser128Arg polymorphism and 128Arg allele in healthy group was more than two fold of patients (55% against 20%).

Conclusion: The association between soluble E-selectin levels and visceral leishmaniasis suggests that this molecule might have significant role in the inflammatory process in VL. Moreover, frequency of 128Arg allele in healthy group was higher than patients.

Keywords:

Soluble E-selectin ، Gene Polymorphism ، Visceral Leishmaniasis ، Human ، ARMS-PCR ، Ser128Arg ، 554Leu/Phe

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