
Evaluation of circulating concentrations of CXCL1 (Gro-α), CXCL10 (IP-10) and CXCL12 (SDF-1) in ALL patients prior and post bone marrow transplantation.


Source

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Abstract

The immune system plays an important role in the development of leukemia. CXC chemokines, as the molecular members of this system, are involved in the immune responses. Therefore, this study was designed to examine and compare the levels of CXCL1 (Gro-α), CXCL10 (IP-10) and CXCL12 (SDF-1) in ALL patients prior to and post bone marrow transplantation (BMT). In this experimental study, samples were obtained from ALL patients and controls, and subjected to ELISA for detection of chemokines. Demographic data were also collected by a questionnaire. Data were analyzed using SPSS software. Our results showed that the serum levels of CXCL1 (Gro-α), CXCL10 (IP-10) and CXCL12 (SDF-1) were significantly increased in ALL patients compared to the controls. We also showed that the CXCL10 (IP-10) level was increased after BMT in ALL patients, while CXCL1 (Gro-α) and CXCL12 (SDF-1) were inversely decreased. Our results allow for the conclusion that CXCL1 (Gro-α), CXCL10 (IP-10) and CXCL12 (SDF-1) are important for the pathogenesis of ALL. Notably, these chemokines might be used as pivotal biological markers in the diagnosis of leukemia. Recombinant CXCL1 (Gro-α), CXCL10 (IP-10) and CXCL12 (SDF-1) may be applied as a therapeutic approach in the treatment of leukemia patients.

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