Investigation of level of cytokines levels released from Th17 cells and regulatory T-cells in patients with recurrent spontaneous abortions

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ABSTRACT

Background & Aim: Unexplained recurrent spontaneous abortion (URSA) might be caused by immunological rejection of the fetus because of dysregulation in immune control during pregnancy. A balance between Th17 and Treg cells was believed to be one of immune regulatory mechanism of pregnancy. Therefore the cytokine paradigm between Th17 and regulatory T cells may explain more about the pathophysiology of recurrent miscarriage. Present study will evaluate the regulatory T and Th17 cytokines in women with URSA compared with healthy women.

Materials & Methods: In this case-control study, 30 women with history of three or more unexplained abortion considered as case group and 28 normal healthy women with at least one successful deliveries control group. We determined the levels of IL-17, IL-21, IL-10 and TGF-β in serum samples by ELISA method and compared in the two groups. The results obtained using the one sample kolmogorov-smirnov Test, Mann-Whitney U Test and Spearman were analyzed using SPSS 22 software.

Results: The level of IL-17 in case group was significantly higher than control group (P < 0.001). Also the level of TGF-β in control group was significantly higher than URSA patients (P= 0.001). IL-17 concentration showed positive correlation with TGF-β in URSA group (P=0.002, r= 0.554). But differences of IL-21 and IL-10 level were not statistically significant in these two groups.

Conclusion: In this study higher level of IL-17 and lower concentration of TGF-β in women with unexplained RSA compared with control shows that Th17 immunity and regulatory T cell-mediated immune regulation are deeply involved in pathogenesis of URSA.

Key words: Unexplained recurrent spontaneous abortion, Treg, Th17

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