

# Detection of IL-10, IFN- $\gamma$ and IL-8 in sera of patients with recurrent spontaneous abortion

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## **Abstract**

**Background:** Th1-type cytokines secretion such as IFN- $\gamma$ , and Th2 cytokines such as IL-10, have been shown to exert deleterious effects on pregnancy, inhibiting fetal growth and development

**Objective:** Estimation of Interleukin-10 (IL-10), IL-8 and IFN- $\gamma$  levels in sera of patients with recurrent spontaneous abortion (RSA) using ELISA method.

**Method:** A total of one hundred and nineteen women, ranged from the mean age (23.9 – 28.5) years, were enrolled in the current study and were further classified into three categories: Group A- Recurrent spontaneous abortion (RSA): n= 62 women, with a mean age of (28.5  $\pm$  0.68); Group B- non- recurrent spontaneous abortion (non-RSA): n= 34 women, with a mean age of (26.4  $\pm$  0.85) and group C- Control (successful pregnancy): n= 23 women, with a mean age of (23.9  $\pm$  0.88). From each patient and control blood sample was collected and serum was separated. Estimation of Interleukin-10 (IL-10), IL-8 IFN- $\gamma$  levels in sera of patients was done using ELISA method.

**Result:** the current study failed to demonstrate a significant difference in circulating levels of IL-8 between RSA and control group ( $p > 0.05$ ) and no significant difference between non-RSA and control ( $p > 0.05$ ). IFN- $\gamma$  expression is significantly increased ( $p < 0.001$ ) in women

with RSA and non-RSA compared with successful pregnancy. Defective IL-10 expression in women with RSA and non-RSA. The ratio of IFN- $\gamma$ : IL-10 was found to be highly significant ( $p < 0.001$ ) in aborted women. IL-8 was expressed in high levels in aborted women (RSA and non-RSA) and those with successful pregnancy, but no significant difference ( $p > 0.05$ ) was found when compared between successful pregnancy and RSA or non-RSA, whereas highly significant difference ( $p < 0.001$ ) was found between RSA and non-RSA.

**Conclusions:** IFN- $\gamma$  expression is highly significant increased ( $p < 0.001$ ) in women with RSA and non-RSA compared with successful pregnancy, indicating that Th1 cytokines might well be implicated in adversely affecting pregnancy. And defective IL-10 expression in women with RSA and non-RSA might be documentary to the previous studies on the possible defect in Th2 cytokines production in these patients.

**Key words:** Recurrent spontaneous abortion Interleukin-10 (IL-10), IL-, IFN- $\gamma$ , and ELISA.

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## **Introduction**

Recurrent spontaneous abortion is one of the important complications in pregnancy, its incidence is 0.5–1%, and the etiology of RSA is varied, and includes maternal or paternal

chromosomal aberrations, uterine anatomical abnormalities, endocrine disorders, infections, and reproductive autoimmune defects. However, the etiology is undetermined in 40–60% of women with recurrent abortion<sup>(1, 2)</sup>.

Successful human pregnancy appears to be an immunological paradox, in that the fetus represents a semi-allograft developing in the potentially hostile environment of the maternal immune system<sup>(3, 4)</sup>. One important mechanism involves the down-regulation of the cellular immune response, which has been

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