

Increased expression of estrogen receptors at the materno-fetal interface in patients with recurrent pregnancy loss

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Abstract

Background: Estrogen hormone has been implicated in the pathogenesis of different genital tract pathologies and in counteracting the progress of normal pregnancy.

Objective: Localization and semi-quantization of estrogen receptors at the materno-fetal interface in patients with recurrent pregnancy loss (RPL).

Methods: Immunohistochemistry analysis of estrogen receptors using paraffin embedded sections of curate samples obtained from 40 women, who were divided into three groups: 24 women with RPL, 10 women with abortion for the first time, and 6 women with induced abortion.

Results: The mean value of the expression of estrogen receptors was (71.2 ± 2.3), which is significantly higher than that of the second group (52.2 ± 3.2), and the third group (43.7 ± 4.2), ($p=0.001$).

Conclusion: High expression of estrogen receptors in women with RPL may give a clue to its prominent role in the pathology of pregnancy loss.

Key words: Estrogen receptor, RPL.

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Introduction

Spontaneous abortion is defined as the spontaneous loss of pregnancy prior to the 20th gestational week of pregnancy. Pregnancy losses which occur during this period of time are said to occur in about 15 percent of pregnancies. At the same time, the risk of miscarriage increases proportionately to the number of previous miscarriages experienced ⁽¹⁾. Many underlying hormonal abnormalities, ovulation defects and cyclic abnormalities can also be observed in patients with multiple miscarriages ^(1,2).

Several causes for recurrent pregnancy loss (RPL) have been hypothesized, including endocrine disorders ^(2,3), genetic ⁽⁴⁾, and uterine anatomical abnormalities ⁽⁵⁾.

Immunological factors are thought to account for many of the remaining 40-60% of unexplained miscarriages ⁽⁶⁾.

The interactions between immune-endocrine and reproductive systems are heightened during pregnancy as an adaptive mechanism and are regulated by a complex array of hormones and cytokines that control the survival of a semiallogeneic conceptus ⁽⁷⁾. Multiple signals synchronize the development of the blastocyst and the preparation of the uterus. During early pregnancy estrogen stimulates proliferation and differentiation of endometrial stromal and epithelial cells. Downstream effectors of steroid-hormone actions include peptide hormones, growth factors, and cytokines ⁽⁸⁾.

Estrogen is implicated in many inflammatory and autoimmune diseases ⁽⁹⁻¹¹⁾ and has been shown to up-regulate IFN in activated splenocytes ⁽¹²⁻¹⁴⁾.

In vivo studies of the role of estrogen and progesterone in the

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