The role of interleukin on uterine endometrium, placenta and embryonic implantation

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ABSTRACT

Introduction: The polypeptide cytokine interleukin-1 is found in all body tissues and plays its role in inflammatory changes. Interleukin-1 is known as alarm cytokine in defense mechanism, particularly immunological responses. The interleukin receptor is present in different tissues and in endometrial epithelium and its antagonist will be increased during preimplantation period, therefore it participates in endometrial preparation for embryonic receptivity. Therefore blocking of interleukin receptor inhibits the embryonic implantation. An increase in the interleukin system is observed during menstrual period especially within leuteal phase.

Knowledge of the interleukin system and its functional roles as a key molecular factor in implantation is important. The pregnancy success or failure is related to suitable or unsuitable interaction between blastocyst and endometrium, which is affected by paracrine cytokine control. The cytokine 1 has two types as æ and β. the latter is found in the placenta. Its antagonist receptor inhibits the implantation trough interleukin receptor-antagonist complex formation. Interleukin receptor antagonist complex formation can inhibit the interleukin physiological activity without any cytotoxic effects.

The interleukin system reaches the highest level of activity during the 4^{th} and 5^{th} days of pregnancy. These findings confirm that blocking interleukin leads to inhibition of blastocyst implantation. It can be concluded that he interaction, secretion, receptivity and other interleukin-related factors have key roles in the implantation and relationship between the endometrium and embryo.

Key words: Interleukin – Placenta – Cytokine

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