Recurrent Spontaneous Abortion and Implantation Failure – Immunological Factor and Social Clinical Implications

Recurrent spontaneous abortion (RSA) is a devastating reproductive problem that affects as many as 5-10% of couples trying to establish a family. This is a challenging problem to both the clinicians and the scientists. As many as 40% of the couple suffering from recurrent pregnancy loss (RPL) are left without answers, effective therapy and often without a child. The main causes of RPL can be subdivided into genetic, hormonal, anatomical, infective and immunological factors. In this editorial we have highlighted immunological factors and implantation failures.

Substantial evidence now exists to support the concept of suboptimal implantation as being the end result of embryonic, endometrial or immune associated recurrent miscarriages. Early embryonic mortality is very high up to 60% - 70% with largest single cause being the failed implantation. This is the most important problem to the researchers in IVF.

Implantation is a distinct biological process characterized by the interactions of two immunologically and genetically different tissues. In successful pregnancies, how rejection of foetal allograft is prevented, is a major area of research today. This immunomodulation is unique for a successful pregnancy to occur. Local and systemic immune factors including cytokines, growth factors, alloimmunites, autoimmunites and leucocytes take major role in immunomodulatory process.

In clinical diagnosis detection of genetic abnormalities, anatomical and hormonal defects are possible by standardised protocol. Apart from common hormonal problems elevation of testosterone level, may lead to anembryonic pregnancy. Infective process like tuberculosis may also be found out with painstaking investigations. So far as immunological causes are concerned, except diagnosis of APS (anti-phospholipid syndrome) no other standard clinical or diagnostic procedure is available at present.
Certain biochemical markers like integrins, leucocyte pattern in endometrium, LIF (leukaemia inhibitory factor) are still under investigation and at research levels. These may come out to be promising in the future.

Treatment modalities for immunological factor and implantation failure are still frustrating. Use of low dose aspirin and steroid are accepted agents but use of paternal leucocyte transfer (stimulation of HLA system) and intravenous immunoglobulin (IVIG) are still in experimental level. To improve implantation rate lot of researches are going on and we believe, some breakthrough will be available very soon.

Apart from medical factors, the impact of RSA on social and psychological aspects are to be considered seriously. While counseling the couple facing the problem of RSA explanation of immunological factors is not an easy job. This requires a lot of skill which should be acquired by health care professionals. Support from family members and medical staff are essential. No gossip should be allowed here and there, about the problem. The couple should be extended psychological support to come to terms with the problem of RSA so that they do not feel helpless and take it to be granted as “bad luck”. In this connection, bringing up an RSA support group will be of immense help.

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