

9th Yazd International Congress and Student Award on Reproductive Medicine with 4th Congress of Reproductive Genetics

Oral Presentations

O-35

Immunology and immunotherapy in RIF and recurrent miscarriage

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The most RSA is mainly due to immune factors and Mainly affects 30~40 years old women. Three main players of immune system that affecting implantation are 1) TH1–TH2 balance 2) natural killer cells, and 3) autoantibodies. In pregnancy we have shift toward TH2 dominance and Th2 cells act as an antagonist against embryo cytotoxicity of Th1 cells. There is no screening tests for Th1 and Th2 and rising progesterone levels can stimulate Th2 and inhibit Th1 secretions. Association between autoantibodies and miscarriage is clear but association between autoantibodies ART failure is inconclusive. In RIF, ACLA and anti- β 2glycoprotein1 antibodies are not detect but LAC is more often detected and some evidence suggest that it is reasonable to test these antibodies in RIF. Implantation is interaction between maternal killer immunoglobulin-like receptors (KIRs) (expressed by (uNKs)) and fetal human leukocyte antigen (HLA) (expressed by extravillous trophoblasts). There is different haplotypes for KIR and HLA and if there is haplotype KIR AA and HLA-C2C2, they may lead to RIF, recurrent miscarriage, preeclampsia, and (IUGR). Excessive inhibition of uNK cell may lead to pre-eclampsia and low birth

weight. And strong activation of uNK cells can lead to macrosomia. uNK measurement is possible directly by uterine biopsy but it is inaccurate and indirectly by assessment of peripheral blood NK cells (CD56 (majority of these cells)-CD16-CD38). There is dramatic increase in the mid-secretory phase starting 6-7 days after the LH surge but routine testing in RIF is not advised. There is different chimeric fetal cells during pregnancy and H-Y antigens is one of them and is male-specific minor antigens and H-Y antibody produce against it in patients with secondary RPL who had a firstborn male.

HLA class II alleles and HLA-G polymorphisms in conjunction with H-Y Antibodies may lead to RPL and RIF (in male and female fetuses) and homosexuality in male fetuses (due to inhibitory effect on the masculinization of the brain). Due to different immunological problems there is different Immunotherapies like Intravenous human immunoglobulin, steroids, anti-TNF drugs, intra lipid, immunosuppressant drugs and Immunization with lymphocytes that is the most studied immunologic treatment for RM and it consists of PBMCs that were isolated by centrifugation of patients' husband's blood and administered intradermally. And increase blocking antibody (kind of IgG) that Inhibits lymphocyte reaction and deters the immune system's attack on embryos. And also Increase concentration of TGF- β 1 and Restoring balance in the Th1/Th2 and Treg cells. It should use fresh, intradermally, before, and during pregnancy with low dose (less than 1×10^8 lymphocytes) and paternal source is better than other sources.