

SINGLE EMBRYO TRANSFER MAY IMPROVE ONGOING PREGNANCY RATE IN WOMEN WITH KIR AA AND PARTNERS WITH HLA-C2

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Abstract Body

Introduction: The immune system's role in recurrent reproductive failure is a controversial issue. Insufficient invasion by invading extravillous trophoblast is a primary defect in pregnancy disorders such as recurrent miscarriage, and this process is regulated by interaction between maternal killer immunoglobulin-like receptors (KIRs) expressed by the uterine natural killer cells and their ligand human leukocyte antigen (HLA)-C expressed by extravillous trophoblast. Pregnancies are an increased risk of disorders in mothers with KIR AA when the fetus has paternal HLA-C2. Recently, it has been reported that the expression of more than one paternal HLA-C by extravillous trophoblast in assisted reproduction may affect placentation in mothers with KIR AA. Single embryo transfer has been purposed in these cases. Material and methods: From January 2018 to June 2019, We selected patients in in vitro fertilization (IVF) cycles, with 2 previous IVF cycles with double blastocyst transfer and implantation failure and/or miscarriage. Inclusion criteria were: 35 years-old or younger, normal Karyotype, no severe male factor, no endometriosis or myomas. They were submitted to KIR genotyping. If KIR was AA, the partners were submitted to evaluation of HLA-C. If the partner expressed at least one HLA-C2, on the next embryo transfer, it was transferred only one blastocyst. Results: Thirty-eight patients were selected to KIR genotyping. Nine of them were KIR AA. For KIR AA patients, HLA of partners were tested, showing: 6 with C2C1, 2 with C2C2 and 1 with C1C1. KIR AA patients with partners C2C2 or C1C2 were submitted to a single blastocyst transfer (n=8). Pregnancy rate was 66,7% (n=6). Miscarriage rate was 16,6% (n=1). Ongoing pregnancy rate was 55.5% (n=5). Conclusion: Interaction between maternal KIR AA with partner HLA-C2 may be associated to recurrent pregnancy failure and miscarriage in double embryo transfer. Single embryo transfer is a good option to improve outcomes.