The international Academy of Human Reproduction

17th World Congress of the Academy of Human Reproduction

15–18 March 2017

Rome, Italy

TITLE

CELL THERAPY BY MESENCHYMAL STEM CELL PREVENTS ABORTION IN ABORTION PRONE MOUSE MODEL

AUTHOR/S

Salek farrokhi A (IR) [1], Sadighi Moghaddam B (IR) [2], Moazzeni S (IR) [3]

ABSTRACT

Context Recurrent spontaneous abortion is one of the most common complications of pregnancy with a prevalence of 2-5% among pregnant women. Nowadays, mesenchymal stem cells have been shown to modulate various aspects of immune responses. It seems that mesenchymal stem cells may improve the immunological condition in immune mediated RSA and help to maintain the fetus.

Objective The aim of this study is the reduction of abortion in the abortion prone mouse model through administration of MSCs.

Methods The MSCs were derived from the abdominal fat of CBA/J mice. On the day 4.5 of gestation MSCs was administered (i.p) to mice in the test group. On day 13.5 of pregnancy, abortion rates were calculated and TGF-? expression in deciduas was evaluated by Real-Time PCR. The percentage of asymmetric antibodies and TGF-? in serum was also determined by ELISA method.

Animal(s) In this study CBA/J×DBA/2 and CBA/J×BALB/c matings were used as the abortion prone model and normal pregnant model respectively.

Intervention(s) Pregnant CBA/J mice in the experimental group received an i.p. Injection of 1×106 MSC cells in 200 ?l PBS on day 4.5 of gestation.

Main Outcome Measure(s)

MSC treatment was successfully effective in preventing fetal rejection.

Result(s) MSC treatment signi?cantly diminished the abortion rate from 41.9% to 4.65% (P-value= 0.013). The serum levels of asymmetric IgG and TGF-? did not show significant difference between groups (P>0.05). Administration of MSCs remarkably up-regulated the expression of TGF- ? in the deciduas (4.02 fold).

Conclusions The obtained results of this study indicate that MSCs could modulate the immune status in feto-maternal interface, which results in significant reduction of abortion rate.

INSTITUTE

[1] tarbiat modares university, [2] Medical University of Semnan, [3] tarbiat modares university