34. RECURRENT SPONTANEOUS ABORTION (RSA) IS ASSOCIATED WITH REDUCED ENDOMETRIAL EXPRESSION OF IL-6 mRNA DURING THE SECRETORY PHASE OF THE MENSTRUAL CYCLE

Melinda J. Jasper, Kelton Tremellen and Sarah A. Robertson
Reproductive Medicine Unit and Department of Obstetrics and Gynaecology, University of Adelaide, SA 5005

The success of embryo implantation and ongoing pregnancy is facilitated by the generation of an appropriate maternal immune response. Specific cytokines, principally those associated with type 2 immunity, are implicated in assisting this response. The aim of this study was to quantify mRNA expression for a panel of type 1 and 2 cytokines in the endometrium of fertile and non-fertile women during the secretory phase of the menstrual cycle utilising real-time RT-PCR. Groups of women were classified as; proven fertile (control, n = 12), recurrent spontaneous abortion (RSA, n = 9), and repeated IVF-failure (IVF-F, n = 10). During the 3rd week of the menstrual cycle, biopsy tissue was collected using a Pipelle endometrial sampler and placed in RNA Later (Ambion). Total cellular RNA was extracted (Tel-Test), reverse transcribed (Invitrogen), and subjected to PCR amplification in the presence of SYBR Green (Applied Biosystems) in a 5700 Sequence Detection System (Applied Biosystems). Cytokine mRNA data was normalised to β-actin and analysed by Kruskal-Wallis H and Mann-Whitney U tests. Expression of mRNA encoding IL-6 was significantly reduced in RSA (mean ± SEM, 29 ± 6) compared with control (100 ± 38), but not IVF-failure (55 ± 9). The relative abundance of other cytokines examined including IFNγ, IL-2, TNFα, IL-4, IL-5 and IL-10 was not affected by fertility status. These results shows that IL-6 mRNA is differentially expressed in the endometrium of fertile and RSA patients during the menstrual cycle. The result confirms observations showing diminished IL-6 in endometrial tissue of RSA women (1,2) and suggests this type 2 cytokine is a key mediator of implantation and potentially of maternal immune tolerance towards the conceptus during early pregnancy.


10.1071/SRB03Ab34