

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

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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 \pm SEM, 29 ± 6) compared with control (100 ± 38), but not IVF-failure (55 ± 9). The relative abundance of other cytokines examined including IFN γ , IL-2, TNF α , 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.

(1) Lim K *et al.* (2000). *Fertil. Steril.* **73**: 136–142. (2) von Wolff M *et al.* (2000). *Mol. Hum. Reprod.* **6**: 627–634.