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Increased CD56$^+$ NK cells and enhanced Th1 responses in human unexplained recurrent spontaneous abortion

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ABSTRACT. Recurrent spontaneous abortion (RSA) is reported to be associated with immune imbalance at the maternal-fetal interface. Immune cells in the decidual tissue are involved in maintaining immune tolerance during pregnancy; however, whether natural killer (NK) and T cells are altered in unexplained RSA (URSA) remains unknown. In this study, we compared the number and percentage of CD56$^+$ NK cells, CD4$^+$ T cells and CD8$^+$ T cells by flow cytometry in 30 URSA patients and 30 normal pregnant controls. We found that there are a higher proportion of CD4$^+$ T cells and CD16$^+$CD56$^+$ NK cells and a lower number of CD8$^+$ T cells in the decidual tissue of URSA patients compared to normal controls. In addition, the number of T helper type 1 (Th1) cells and the Th1/Th2 ratio were higher in URSA patients compared to normal pregnant controls. In conclusion, our results indicate that the changes in the proportion of local T lymphocyte subsets, NK and Th1 cells, in the maternal-fetal interface may be related to occurrence of URSA.

Key words: Immune tolerance; Maternal-fetal interface; Natural killer cells; T helper cells; Unexplained recurrent spontaneous abortion

