Increase of NK cells in decidua of women with recurrent spontaneous abortion

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Abstract

Various immunological mechanisms are known to be involved in maintenance of pregnancy but mechanisms underlying the failure of pregnancy in spontaneous abortion are poorly understood. Leukocytes consist a substantial percentage of endometrial stroma cells and classic natural killer cells have been proposed as immunological factor in spontaneous abortion. This study was performed to clarify the immunological role of classic NK cells in women with recurrent spontaneous abortion in the first trimester and of unknown etiology. This cell population was studied in 30 samples of decidua tissue of women with spontaneous abortion (test group) and compared with 30 samples of decidua of women undergoing elective pregnancy termination (control group). Paraffin embedded sections were prepared from endometrial tissue samples of both groups and were dyed with specific monoclonal antibody against CD57 marker by using avidin-biotin-peroxides technique. NK cells positive for CD57 were then evaluated and counted under light microscopy with 400 magnification. Z-test was used to statistically compare NK population between test and control groups. Result showed that NK cells were scattered through stroma cells in both normal and abotion group. There was few NK cells observed in normal decidua tissue, where as this cell population was significantly increased in women with spontaneous abortion ($P<0.003$). It seems that NK cells play key role in recurrent spontaneous abortion during the first trimester of pregnancy. Probably classic NK cells are activated by local cytokines and attack trophoblast cells of placenta and are thus involved in induction of spontaneous abortion.

Keywords: NK cells, Spontaneous abortion, Immunohistochemical study and Decidua.

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