the transport of IgA into the cervical mucus. It was also demonstrated that the endocervix and ectocervix contain varying amounts of both IgA and IgG plasma cells scattered diffusely in the subepithelial stroma (Kutteh et al., 1988). Furthermore, it was determined by fluorescent activated cell sorter analysis that B lymphocytes were the predominant cell type in human cervical tissue, representing a significantly higher percentage than that found in peripheral blood, whereas T lymphocytes represented a significantly lower percentage in peripheral blood. Distinct differences between resident tissue lymphocytes and peripheral blood lymphocytes suggest that local immune cell changes would not be recognized by examining the peripheral blood mononuclear cell phenotypes (Crowley-Nowick et al., 1995). However, there have been contradictory reports whether B cells might be the predominant cell type of the leukocyte population in the female reproductive tract. The studies of Lachapelle et al. (1996) and Givan et al. (1997), using flow cytometry indicated that T cells are the major immune cell population, and that B lymphocytes together with macrophages are consistently present at lower but detectable concentrations in all tissues of the reproductive tract thoroughout the menstrual cycle. The conflicting reports of differing numbers of the leukocyte population in the reproductive tract tissues could be explained by the effects of components involved both in upregulation and downregulation of the immune system cells (Givan et al., 1997).

By means of a specific monoclonal antibody, our previous results have documented that ISF is specifically adsorbed on the membranes of B-cell lymphocyte subpopulation isolated from spleens of mice treated intraperitoneally or rectally with ISF. *In vivo* treatment with ISF significantly reduced the proliferative activity of mitogen-stimulated B lymphocytes. ISF was not detected on T-cell membranes and T-cell proliferation was not abrogated by ISF either (Veselský et al., 1996). Also, no effect of ISF was found on cells involved in transplantation events including NK cell activity (Veselský et al., 1992). ISF does not affect proliferation of human tumor cell lines ML-1 and K 562, but it does inhibit proliferation of MLC-stimulated normal human lymphocytes (Veselský et al., 1996). It might be concluded that the effect of ISF on the immune system cells is not species specific, but that its antiproliferative activity depends on the presence of complementary receptors on the lymphocyte membrane.

In the present study we used the same specific monoclonal antibody to ISF for detection of ISF on the membranes of immune system cells populating the tissues of the reproductive tract after its intrauterine deposition. Moreover, it was shown that ISF deposited via uterus is adsorbed on B lymphocytes populating reproductive tissues as well as on the membranes of peripheral blood lymphocytes and splenocytes.

The capability of ISF to reduce the humoral immune response after its intrauterine infusion was demonstrated by inhibiting the antibody response to challenging antigens and abrogation of immunoglobulin classes production. The duration of the immunosuppression induced by intrauterine deposition of ISF after the primary and secondary immunizations was determined. The results indicated that ISF profoundly inhibited both the primary and the secondary antibody responses. The primary antigen challenges in animals treated with ISF produced antibody response to KLH and SRBC, which was significantly reduced as compared to controls nontreated with ISF. The antibody response to the secondary antigen stimulation 40 days after ISF deposition was comparable with ISF-untreated controls. We also studied the clearance of intravenously deposited 100 μg of ISF. The major part of ISF was cleared within 6 days. On day 11, about 2 μg/ml were detected by sandwich ELISA (unpublished data). Intraperitoneal or rectal administration of ISF reduced the concentration of WBC in blood significantly. The white blood cell level returned to normal on day 19 after ISF application (Dostál et al., 1995). Until day 13, ISF was detected on 50–60% of WBC membranes after ISF intrauterine infusion. It could be stated that B lymphocytes were inhibited for that period of time. After that, a new population of B lymphocytes, not yet inhibited by ISF, was stimulated by secondary immunization and produced immunoglobulins to the challenging antigen approximately on day 40.

The finding that ISF infused via uterus inhibited the antibody response suggests that seminal immunosuppressive components may interfere with local as well as humoral immunological functions associated with a number of pathological states, including AIDS, and thus may be a factor decreasing the immune response. Seminal immunosuppressive components may gain access to the circulation if they are deposited in the female reproductive tract. On the other hand, immunosupppressive components in the genital tract fluids should keep the immunosurveillance system, present both in male and female genital tracts, in a physiological condition that can guarantee the survival of spermatozoa in the potentially dangerous anatomical regions. They can serve to avoid autoimmune responses in males and alloimmune response in females against sperm auto- and alloantigens.

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