



Figure 1: Detection of Estrogen Receptor by immunohistochemistry in women with pregnancy loss. (A & B) Expression of estrogen receptor in the trophoblasts in women with RPL and normal pregnancy respectively. Estrogen receptors expression was diffuse heterogeneous dark-brown nuclear staining involving the trophoblasts, both cyto- and syncytiotrophoblasts in the three groups of women but with darker and higher percentage of expression in the recurrent loss group. Magnification power of A and B (X400).

Discussion

It is well known that sex steroids have significant impact on the development of autoimmune diseases in both humans and rodents. In particular, estrogen has been suggested to be responsible for the strong female preponderance of the human rheumatoid arthritis, systemic lupus erythematosus, scleroderma, and Sjögren's syndrome, but the role of estrogens in the female has not been fully characterized⁽²⁰⁻²²⁾.

Sex hormones influence both humoral and cell-mediated immune response, and estrogen is one of potential factors in this immunological dimorphism⁽²³⁾.

The data of this study showed a significant increase in the expression of estrogen receptor in the tissue of women with RPL, in which estradiol has been shown to selectively enhance the development of IFN- γ -producing cells through an ER (estrogen receptor)-

dependant mechanism⁽²⁴⁾. In fact, estrogen is known to increase activity of the IFN- γ promoter and cause increase in the expression of IFN- γ mRNA in the stimulated murine spleen cells⁽²⁵⁾. All these studies goes with the previous studies on these cases that showed a significant increase in the expression of the Th1 cytokine (IFN- γ) in women with RPL as compared with the control groups⁽²⁶⁾.

In addition another study showed that estrogen treatment up-regulates IFN- γ inducible-iNOS (nitric oxide synthase) gene expression, iNOS protein, nitric oxide, and cyclooxygenase-2 as an indirect consequence of activation of T cells⁽¹⁴⁾. Besides, estrogen may promote inflammatory conditions by altering the levels of chemokines, providing evidence for an additional mechanism by