Augmented cell survival in eutopic endometrium from women with endometriosis: Expression of c-myc, TGF-beta1 and bax genes

Johnson, M. Cecilia
Torres, Marisa
Alves, Alessandra
Bacallao, Ketty
Fuentes, Ariel
Vega, Margarita
Boric, Angélica

Background: Endometriosis is a common gynaecological disorder characterized by the presence of endometrial tissue outside of the uterus. The fragments in normal menstruation are composed of necrotic and living cells, which do not survive in ectopic locations because of programmed cell death. The aim of this study was to evaluate if the balance between cell proliferation and apoptosis is changed in eutopic endometrium from women with endometriosis throughout the menstrual cycle by studying bax (pro-apoptotic), c-myc (regulator of cell cycle) and TGF-beta1 (involved in cell differentiation) genes. Methods: Eutopic endometrium was obtained from: 30 women with endometriosis (32.8 +/- 5 years) and 34 fertile eumenorrheic women (36 +/- 5.3 years). We analyzed apoptosis (TUNEL: DNA fragmentation); cell proliferation (immunohistochemistry (IHC) for Ki67); c-myc, bax and TGF-beta1 mRNA abundance (RT-PCR) and TGF-beta1 protein (IHC) in endometrial explants. Results: Cell proliferation strongly d