Objective: To investigate expression of Bcl-2, FAS, FAS ligand (FASL) and cleaved caspase-3 in the endometrial tissue of women of patients with polycystic ovary syndrome (PCOS).

Patients: 10 patients with PCOS designated PCOSG and 10 patients with regular and ovulatory menstrual cycles designated CG. This was a transversal study. The PCOS diagnosis was based on the criteria of the Androgen Excess Polycystic Ovary Syndrome Society (AE-PCOS, 2006). Analysis was performed of the clinical data from both groups. Collection of endometrial biopsies was aided by hysteroscopy. In CG, biopsies were performed in the proliferative phase of the menstrual cycle between days 5 to 11. In PCOSG, biopsies were performed in the persistent proliferative phase, for all women were amenorrheic. Expression of Bcl-2, FAS, FASL and cleaved caspase-3 was assessed using immunohistochemical methods. The results were statistically analyzed and p<0.05 value was considered statistically significant.

Results: The immunoreactivity of the Bcl-2, FAS and FASL predominated in epithelial cells and glands while the cleaved caspase-3 predominanted in glands and endometrial stromal cells. It was also observed greater leukocyte infiltrate in PCOSG. Immunoexpression of Bcl-2, FAS and cleaved caspase-3 were highly in two groups and immunoexpression of FASL was low in two groups (CG and PCOSG). The immunoexpression of cleaved caspase-3 was significantly higher in uterus to the CG compared to PCOS (p<0.01).

Conclusion: Our data suggest that these findings are associated with the exposure time of endometrium to estrogen in the absence of progesterone counteraction. Disturbances in endometrial apoptosis may be contributing factor for the infertility in women with polycystic ovary syndrome.