Study Objective: The aim of our study is to determine the effects of the most frequently utilized methods of bipolar electrocoagulation and intracorporeal suture application in laparoscopic ovarian cystectomy procedures on the ovarian reserve indicators.

Design: Prospective analysis 60 patients were included in the study. The patients were randomized into two groups with similar mean ages. Setting: Suleyman Demirel University obstetric and gynecology group practice and teaching hospital. Patients: With regular menstrual periods and BMI's in the normal range; without premenopausal symptoms, any endocrinological pathologies, and family histories of premature ovarian failure.

Interventions: Laparoscopic ovarian cystectomy using bipolar electrocoagulation or suture. Measurements and Main Result: In patients in whom ovarian cystectomy was performed by means of electrocoagulation, at the hormonal ovarian reserve indicators between the postoperative first and third month and preoperative periods statistically significant differences of FSH levels were detected (preoperative 5.72 ± 1.78, p.o. 1. 6.63 ± 2.29 and p.o. 3. 6.96 ± 1.86). There were no statistically significant differences detected between postoperative and preoperative other hormonal ovarian reserve indicators (preoperative E2 68.56 ± 28.95, postoperative 1.m 70.50 ± 16.44 and postoperative 3.m 71.26±19.12, preoperative inhibin B 72.22 ± 60.02 and p.o. 3.m 59.76 ± 32.73). A statistically significant reduction in the ultrasonographic indicators of ovarian reserve basal ovarian volume and antral follicle count was detected in the postoperative period when compared with the suture group (p.o 1. m AFC and basal ovarian volume with electrocoagulation group 3.43 ± 1.04, 2.66 ± 1.35, p.o. 3.m 3.63 ± 1.21, 3.10 ± 1.62 suture group p.o. 1.4.23 ± 1.38, 3.97 ± 1.77 and p.o. 3.4.60 ± 1.24, 3.91 ± 1.82). In patients in whom ovarian cystectomy was performed by the application of suture, no statistically significant differences either in the hormonal or the ultrasonographic ovarian reserve indicators between the postoperative and preoperative periods were detected (preoperative FSH 5.90 ± 2.03, p.o. 1. 5.92 ± 1.49 and p.o. 3. 6.38 ± 1.92, preoperative E2 67.93 ± 25.38, postoperative 1.m 67.80 ± 9.37 and postoperative 3.m 67.80 ± 9.37, preoperative inhibin B 59.37±45.59 and p.o. 3.m 57.24 ± 32.26).

Conclusions: Because of the safety and minimal side effects to the ovarian reserve it can be an appropriate approach to use intracorporeal suture at laparoscopic ovarian cystectomy. Also the use of bipolar electrocoagulation is a gentle technique that cause minimal damage to the ovarian reserve.