

Title: Positive effect of laparoscopy in endometriosis-associated infertility

D. Sõritsa^{1,2,3}; M. Saare^{3,4}; T. Laisk-Podar^{3,4}; K. Rekker³; M. Peters^{3,4}; L. Padrik^{1,2}; Ü. Kadastik^{1,2}; A. Sõritsa²; P. Soplepmann^{1,2,4}; K. Matt^{1,4}; H. Karro^{1,4}; A. Salumets^{3,4}

¹Tartu University Hospital's Women's Clinic, ²Elite Clinic, ³Competence Centre on Reproductive Medicine and Biology and ⁴Department of Obstetrics and Gynecology, University of Tartu; Tartu, Estonia

Objectives. Treatment of endometriosis-associated infertility is complicated and depends largely on patient age, previous treatment, duration of infertility and severity of the disease. Many studies have demonstrated the benefit of curative laparoscopy in endometriosis-associated infertility treatment. According to the literature, women surgically treated at any stage of endometriosis have an approximately 50% chance of spontaneous conception 1–2 years after surgery. Previously, it has been confirmed that surgical treatment improves fertility and has a positive effect on pregnancy rate at all stages of the disease. In cases of several unsuccessful IVF attempts, surgical treatment can improve the pregnancy rate. The objective of this study was to evaluate whether the effect of laparoscopy on pregnancy outcome in infertile endometriosis patients depends on the previous IVF history.

Materials and methods. This retrospective study was carried out on 159 infertile patients suffering from endometriosis. All patients were enrolled from Elite Clinic (Tartu, Estonia) in 2005-2009 and had undergone laparoscopic surgery. General characteristics, laparoscopic findings and results of treatment were recorded. For statistical analysis patients were divided into two groups according to the previous history of IVF: Group I consisted of 84 patients with no previous IVF treatment and Group II consisted of 75 patients with up to seven previous negative IVF cycles.

Results. Patients with previous negative IVF outcome were significantly older (33.8 vs. 31.9 years of age) and had longer duration of infertility ($p=0.003$). Also, Group II included fewer women with patent fallopian tubes but this difference was insignificant. FSH amount used for hyperstimulation as well as the amount of retrieved oocytes for patients undergoing IVF treatment posterior to laparoscopic surgery were similar in both groups. Duration of postoperative GnRH treatment was longer in Groups II ($p=0.002$). Women with no previous IVF treatment showed significantly higher cumulative IVF pregnancy rate than those with previous history of IVF ($p=0.03$). There were no significant differences in IVF pregnancy rate during the first IVF cycle between the groups. Spontaneous pregnancy rate was significantly higher in Group I (26.2% and 8.0%, respectively; $p=0.01$).

Conclusions. After laparoscopy, high positive IVF outcome and spontaneous pregnancy rate in women with endometriosis was obtained. Cumulative IVF pregnancy rate and spontaneous pregnancy rate were statistically different between the groups while IVF pregnancy rate during the first IVF cycle was not. Therefore, although laparoscopy involves many risks, it significantly raises the subsequent probability of successful pregnancy.