

Adenomyosis and endometriosis: pregnancy outcome after pituitary down-regulation and assisted reproduction

Sõritsa Deniss^{1,4}, Saare Merli^{2,4}, Laisk-Podar Triin^{2,4}, Sõritsa Andrei³, Matt Kadri^{1,2}, Karro Helle^{1,2}, Salumets Andres^{2,4}

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

Objectives. Adenomyosis is a benign gynaecological disease in which the endometrium invades the uterine myometrium. It is an estrogen-dependent disease with unclear etiology, represented often in women with endometriosis-associated infertility. Several studies have shown the fertility enhancing effect of gonadotropin-releasing hormone agonist (GnRHa) treatment on pregnancy outcome in patients with adenomyosis. The objective of this study was to evaluate the efficacy of GnRHa therapy on the pregnancy outcome in patients with and without adenomyosis.

Materials and methods. This retrospective study (2005-2009) was carried out on 118 patients from Elite Clinic with long history of infertility; all of them underwent curative laparoscopic surgery and were diagnosed with I-II stage of endometriosis according to the American Society for Reproductive Medicine (ASRM) criteria. The presence of adenomyosis was diagnosed with transvaginal ultrasound. For statistical analysis patients were divided into three groups: Group I (without adenomyosis and GnRHa treatment) n=40, Group II (without adenomyosis and with GnRHa treatment) n=37, Group III (with adenomyosis and with GnRHa treatment) n=41 patients.

Results. The prevalence of painful menstruation and elevated Ca 125 levels were higher in patients with adenomyosis and these characteristics were statistically significant between studied groups. The general pregnancy rate was 66.1% (24 patients in Group I, 24 in Group II and 30 in Group III). 52 (73.2%) of conceived patients became pregnant within 12 months (15; 15 and 22 patients, respectively). 36 (62.1%) of patients conceived on first IVF attempt. Out of 78 patients with a detected clinical pregnancy, 69 patients (88.5%) delivered.

Conclusions. No significant differences were found in pregnancy outcome between patients with/without adenomyosis and GhRHa therapy. Pregnancy is generally achieved within 12 months after laparoscopy and either spontaneously or on the first IVF attempt.

| Characteristic | Group I NO Adenomyosis NO GnRHa n=40 mean±SD or n(%) | Group II NO Adenomyosis YES GnRHa n=37 mean±SD or n(%) | Group III YES Adenomyosis YES GnRHa n=41 mean±SD or n(%) |
|---|---|---|---|
| Average age (years) | 32.7±3.8 | 32.6±4.8 | 34.2±4.5 |
| Body mass index (kg/m ²) | 23.0±3.2 | 22.1±2.6 | 22.2±3.0 |
| Regular menstruation | 32(80.0) | 33(89.2) | 37(90.4) |
| Painful menstruation | 3(7.5) ^a | 8(21.6) ^b | 19(46.3) ^{a, b} |
| Primary infertility | 12(30.0) | 13(35.1) | 14(34.1) |
| FSH value before treatment (IU/l) | 7.5±2.6 n=32 | 7.8±1.7 n=25 | 8.2±3.6 n=23 |
| Duration of infertility (years) | 6.6±3.9 n=36 | 5.4±2.8 n=34 | 6.2±3.3 n=38 |
| STD | 11(27.5) | 12(32.4) | 8(19.5) |
| Elevated Ca 125 (reference 1.9-16.3 kU/L) | 0(0) ^a n=27 | 2(7.7) n=26 | 10(28.6) ^a n=35 |
| Hysteroscopy | 5(12.5) ^a | 5(13.5) ^b | 16(39.0) ^{a, b} |
| Duration of GnRH treatment (months) | NA | 4.1±1.7 | 4.8±1.4 |
| FSH dose | 1765±603 n=19 | 1738±478 n=19 | 1917±753 n=25 |
| Retrieved oocytes | 10.1±6.2 n=21 | 10.1±4.7 n=22 | 9.6±6.0 n=30 |

^aGroup I vs Group III p<0.05

^bGroup II vs Group III p<0.05

| Characteristic | Group I NO Adenomyosis NO GnRHa n=40 n(%) | Group II NO Adenomyosis YES GnRHa n=37 n(%) | Group III YES Adenomyosis YES GnRHa n=41 n(%) |
|---|--|--|--|
| Previously laparoscopically diagnosed endometriosis | 2(5.0) ^{a, b} | 8(21.6) ^b | 9(22.0) ^a |
| Pelvioperitonitis (Chronic and adhesive) | 18(45.0) | 13(35.1) | 20(48.8) |
| Permeability of fallopian tubes (at least one) | 12(70.0) | 32(86.5) | 30(73.2) |
| Myoma of uterus | 4(10.0) ^a | 5(13.5) | 12(29.3) ^a |

^aGroup I vs Group III p<0.05

^bGroup I vs Group II p<0.05

| Characteristic | Group I NO Adenomyosis NO GnRHa n=40 mean±SD or n(%) | Group II NO Adenomyosis YES GnRHa n=37 mean±SD or n(%) | Group III YES Adenomyosis YES GnRHa n=41 mean±SD or n(%) |
|---|---|---|---|
| Conceived spontaneously | 5(20.8) | 9(37.5) | 6(20.0) |
| Conceived through IVF | 19(79.2) | 15(62.5) | 24(80.0) |
| Time to conceiving after laparoscopy (months) | 7.1±7.0 n=19 | 10.6±8.0 n=23 | 8.9±5.2 n=29 |
| Pregnancy during 12 months after laparoscopy | 14(77.8) n=18 | 15(65.2) n=23 | 21(75.0) n=28 |
| Conceived on first IVF attempt | 14(73.7) | 9(60.0) | 13(54.2) |
| Clinical pregnancies | 24(60.0) | 24(64.9) | 30(73.2) |
| No pregnancies | 16(40.0) | 13(35.1) | 11(26.8) |
| Miscarriages | 3(12.5) | 2(8.3) | 4(13.3) |
| Deliveries | 21(87.5) | 22(91.7) | 26(86.7) |