IN VITRO FERTILISATION OUTCOMES OF PATIENTS WITH UNILATERAL ENDOMETRIOMA WHO DID NOT UNDERGO PREVIOUS OVARIAN SURGERY

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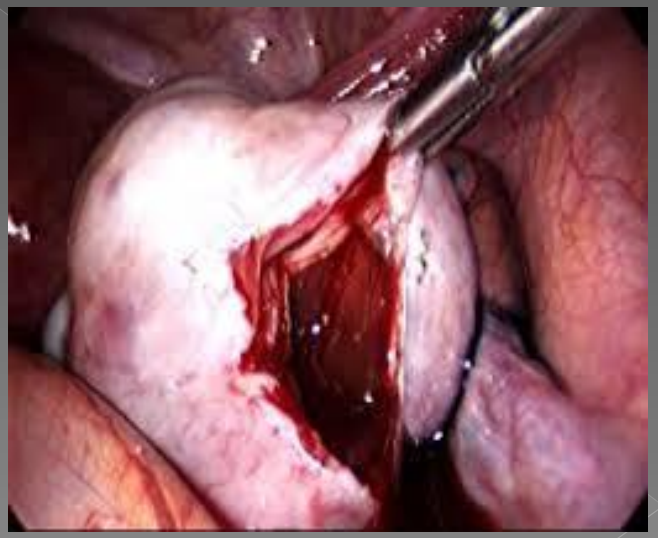
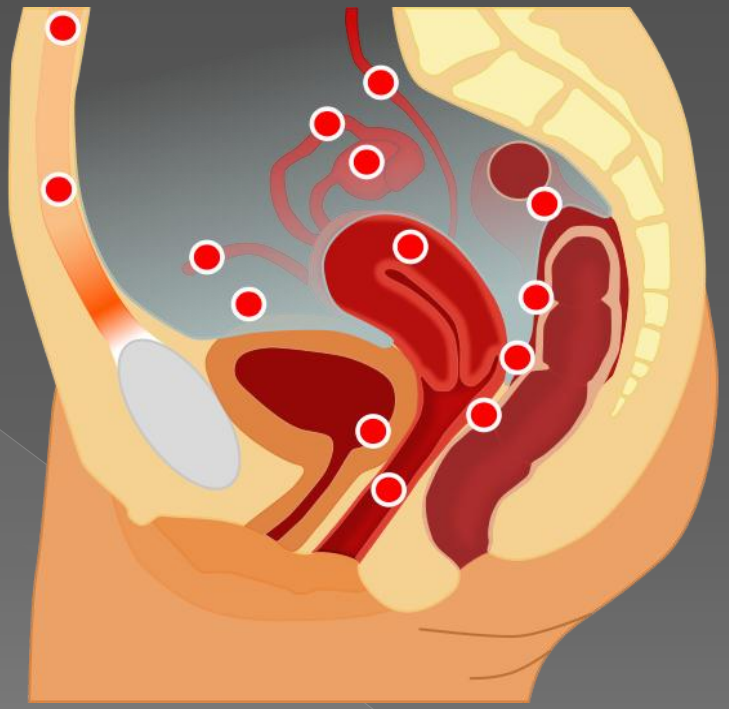
Endometriosis

- A disease characterized by the presence of endometrial tissue outside the uterus



Ovaries (the most common site 30%)

- Fallopian tubes
  - The back of the uterus and the posterior cul-de-sac
- The front of the uterus and the anterior cul-de-sac
- Uterine ligaments such as the broad or round ligament of the uterus
- Pelvic and back wall
- Intestines, most commonly the rectosigmoid
- Urinary bladder and ureters



Endometrioma

- Endometriosis is a common condition in women with infertility.
- During IVF treatment, endometrioma are found at collection in approximately 3% of cases
- bilateral endometriomas are found in <1% of cases

Endometriosis induces an inflammatory state

- activation of macrophages, T cells, and natural killer cells
- producing and releasing reactive oxidative species and cytokines
- such as interleukins-1, 2, 6, and 8;

  vascular endothelial growth factor; tumor necrosis factor alfa

Endometriosis

- Those inflammatory mediators are may be detrimental to fertilization and implantation by inducing local negative effects on the quality of follicles, oocytes, and embryos

Endometrioma

- Results of studies on the effects of endometriomas on quality of oocytes and embryos are inconclusive.

AİM

- To evaluate the outcome of women with unilateral endometrioma undergoing assisted reproductive tecnology who did not undergo previous ovarian surgery

Material and Methods

- Data from in vitro fertilization-intracytoplasmic sperm injection (IVF-ICSI) cycles performed at the Zekai Tahir Burak Women Health and Education Hospital between 2009-2013 were reviewed.
- We included 23 patients who were diagnosed with one or more unilateral endometrioma(s) and who did not undergo previous ovarian surgery.
- They were compared with age matched 23 women with tubal factor infertility regarding the
  - number of retrieved oocytes,
  - total gonadotropin dose used,
  - hCG day estradiol level,
  - fertilization rate and
  - pregnancy rate.

The patients underwent a controlled ovarian hyperstimulation.

RESULTS

- There were no significant difference in age, BMI, total gonadotropin dose used, hCG day estradiol level, induction interval, the number of retrieved oocytes, fertilization rate and pregnancy rate (table).
- The mean diameter of endometriomas was 22 ±5,38 mm.
- Right- and left-sided endometriomas were 52% and 48%, respectively.

Variables	Endometrioma n=23	Tubal Factor n=23	p value
Age	31.52±4.55	32.1±3.11	0.626
BMI	25.22±3.3	27.0±4.24	0.149
hCG day E2	2238.74±1056.42	1758.48±819.51	0.092
hCG day progesterone	0.84±0.49	0.87±0.45	0.844
Induction interval	10.0±1.51	10.43±1.44	0.323
Endometrial thickness on the hCG day	11.47±1.56	10.50±1.74	0.053
Number of retrieved oocytes	8.83±4.79	9.91±3.67	0.392
M2 number	7.48±4.17	7.17±3.2	0.782
2 PN	4.83±3.26	3.91±1.78	0.246
Fertilization rate	65.30±24.34	60.02±23.66	0.465
Clinical pregnancy	5(21.7%)	8(34.8%)	0.326

LIMITATIONS

- Small number of patients
- There was no pathologic dignosis for endometrioma
- Retrospective study

COCLUSION

- Unilateral endometrioma < 30 mm diameter did not reduce the ovarian response to controlled ovarian hyperstimulation treatment.
- Altough we found no significant difference in pregnancy rate between groups this result may be due to small number of patients we have.
- Further studies with larger series needed for clarify this subject.

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human reproduction

ORIGINAL ARTICLE *Infertility*

Do endometriomas induce an inflammatory reaction in nearby follicles?

Hans Kristian Opøien[1,2,*], Peter Fedorcsak[2], Anna Polec[3], Mette Haug Stensen[1,2], Thomas Åbyholm[4,5], and Tom Tanbo[1,2,4]

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They found that local intrafollicular increases in proinflammatory cytokines may be associated with an inferior ovarian response, but they were unable to find a link between this observation and the presence of ovarian endometriomas.

The findings strengthen the argument against surgical removal of endometriomas prior IVF.

Presence of bilateral endometriomas during IVF treatment is not associated with reduced embryo quality.

Effects of ovarian endometrioma on embryo quality

The proportions of good, fair, and poor embryos in 13 women with bilateral endometriomas were compared with those of 39 women without endometriomas and were found to be similar (47.2% vs. 41.1%, 28.3% vs. 32.8%, and 24.3% vs. 26.0%, respectively). Therefore, it appears that the presence of bilateral endometriomas during IVF treatment is not associated with reduced embryo quality. (Fertil Steril® 2011;95:2700–2. ©2011 by American Society for Reproductive Medicine.)

Key Words: Endometrioma, endometriosis, embryo quality, in vitro fertilization

- They examined the medical records of 13 women with bilateral endometriomas who underwent IVF.
- Matched to39 tubal factor or male factor infertility patients of similar age
- They evaluate baseline characteristics, total number of oocytes collected, fertilization and cleavage rates, embryo quality, implantation rate, and pregnancy rates.

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ENDOMETRIOSIS

Endometriosis and IVF: are agonists really better? Analysis of 1180 cycles with the propensity score matching

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Abstract

Objective: To compare the outcomes of patients with confirmed endometriosis undergoing *in vitro* fertilization (IVF)-embryo transfer (ET) treated with either gonadotropin-releasing hormone agonist (GnRHa) or gonadotropin-releasing hormone antagonist (GnRHant) using the propensity score (PS) matching.
Design: Observational, retrospective analysis from January 2000 to December 2010.
Setting: Private tertiary fertility clinic.
Patient(s): Patients with endometriosis confirmed by ultrasound or surgery (American Fertility Society; AFS grades I–IV) that underwent an IVF-ET, stimulated with standard controlled ovarian hyperstimulation (COH) and GnRHa or GnRHant.
Intervention(s): A PS was assigned to all patients, which calculates the conditional probability of receiving a certain treatment; a higher PS (1) meant a higher probability of receiving treatment with GnRHa, and a lower PS (0) meant a higher probability of receiving GnRHant. The PS was calculated with a logistic regression model adjusted specifically for age, follicle stimulating hormone, antral follicle count and previous IVF cycles. All patients were divided into three groups according to their PS.
Main outcome measure(s): pregnancy rate (PR) per cycle.
Results: 1180 patients were analyzed. Raw PR per cycle was 41.8% and 23.4%, and PR per ET was

Keywords

Endometriosis, GnRH agonist, GnRH antagonist, IVF-ET, propensity score

History

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Agonist or antagonist protocol?: There are eqully effective

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www.sciencedirect.com
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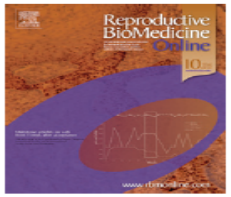

ARTICLE

Follicular-fluid anti-Müllerian hormone concentration is similar in patients with endometriosis compared with non-endometriotic patients

CS Campos [a], D Vaamonde [b,*], C Andreoli [a], AC Martins [a], VK Genro [a], CA Souza [c], R Chapon [a], JSL Cunha-Filho [c]

20 patients with endometriosis
12 patients with tubal factor

FF AMH levels were not different

In vitro fertilization outcome in women with unoperated bilateral endometriomas

Laura Benaglia, M.D.,[a] Alfonso Bermejo, M.D.,[b] Edgardo Somigliana, M.D., Ph.D.,[a] Sonia Faulisi, M.D.,[a] Guido Ragni, M.D.,[a] Luigi Fedele, M.D.,[a] and Juan A. Garcia-Velasco, M.D.[b]

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39 patients with bilateral endometrioma vs. 78 control

Presence of bilateral endometriomas at the time of IVF affects responsiveness to hyperstimulation, the quality of the oocytes retrieved and the chances of pregnancy are not affected.

Fertility and Sterility® Vol. 99, No. 6, May 2013

Bongioanni *et al. Reproductive Biology and Endocrinology* 2011, **9**:81
http://www.rbej.com/content/9/1/81

RB&E REPRODUCTIVE BIOLOGY AND ENDOCRINOLOGY

RESEARCH Open Access

Ovarian endometriomas and IVF: a retrospective case-control study

Francesca Bongioanni[1], Alberto Revelli[2*], Gianluca Gennarelli[2], Daniela Guidetti[1], Luisa Delle Delle Piane[2] and Jan Holte[3]

- Ovarian endometriosis does not reduce IVF outcome compared with tubal factor
- Laparoscopic removal of endometriomas does not improve IVF results
- A decrease of ovarian responsiveness to gonadotropins.

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human reproduction

ORIGINAL ARTICLE *Infertility*

Pregnancy outcome in women with endometriomas achieving pregnancy through IVF

Laura Benaglia[1,*], Alfonso Bermejo[2], Edgardo Somigliana[1], Claudia Scarduelli[1], Guido Ragni[1], Luigi Fedele[1], and Juan A. Garcia-Velasco[2]

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Women with endometriomas achieving pregnancy

No increased risk of obstetrical complications.

The Effect of endometrioma on oocyte number and pregnancy in IVF cycles

- - Grup I : (n=41) Aspirated Endometrioma
- - Grup II : (n=40) İntakt Endometrioma
- - Grup III: (n=44) Resected endometrioma
- - Grup IV:(n=46) Tubal factor infertility

TABLE 2

Characteristics of controlled ovarian hyperstimulation in the four groups with ICSI cycles.

	Aspirated endometrioma (n = 41)	Non-aspirated endometrioma (n = 40)	Resected endometrioma (n = 44)	Tubal factor infertility (n = 46)
Duration of ovarian stimulation (d)	10.9 ± 1.4	11.6 ± 1.6[a]	10.5 ± 1.6	9.9 ± 0.87[a]
Total rec-FSH ampules used per cycle	33.5 ± 7.3	36.8 ± 9.9	33.2 ± 8.3	31.9 ± 7.5
Total follicle no. (>17 mm)	5.9 ± 1.1	5.2 ± 1.1[a]	5.3 ± 1.2[b]	6.8 ± 1.6[a,b]
E_2 level on hCG day (pg/mL)	1,632 ± 670[c]	946.7 ± 264[a,b]	1,196 ± 444[c]	1,859.6 ± 853[a,c]

[a] $P<.05$, nonaspirated group vs. tubal factor infertility group.
[b] $P<.05$, resected group vs. tubal factor infertility group.
[c] $P<.05$, aspirated group vs. nonaspirated group.

Pabuccu. Endometriomas and ICSI outcome. Fertil Steril 2004.

Pabuccu R et all Fertil Steril 82(3) : 705-11, 2004.

TABLE 3

Results of ICSI-ET cycles among all four groups.

	Aspirated endometrioma infertility (n = 41)	Nonaspirated endometrioma (n = 40)	Resected endometrioma (n = 44)	Tubal factor infertility (n = 46)
Mean fertilization rate (%)	72 ± 10	68 ± 16	72 ± 13	74 ± 12
Metaphase II oocytes	6.1 ± 1.1[a]	5.6 ± 1.2[b]	5.7 ± 1.3[c]	7.2 ± 1.5[b]
Implantation rate (%)	13	12	18	14
Clinical pregnancy (%)	24	20	25	30
Spontaneous abortion (%)	9.5	10	8.3	10

[a] $P<.05$, aspirated group vs. tubal factor infertility group.
[b] $P<.05$, nonaspirated group vs. tubal factor infertility group.
[c] $P<.05$, resected group vs. tubal factor infertility group.

Pabuccu. Endometriomas and ICSI outcome. Fertil Steril 2004.

- M II oocyte numbers were more in tubal factor infertility patients than patients with endometrioma.
- Aspiration of endometrioma before the KOH does not increase follicle number, MII oocyte number , implantation ratio and clinical pregnancy ratio.
- Resection of endometriomas (1-6 cm) does not improve IVF outcome.

Pabuccu R et all Fertil Steril 82(3) : 705-11, 2004.