

IVF: PREGNANCY RATES AND ENDOMETRIOSIS

Edgardo D. Rolla MD

**Ambassador . World Endometriosis Society
Past President . Sociedad Argentina de Endometriosis
Staff Member – Fertilab, Buenos Aires, Argentina
Director, Chapter on Surgery in Infertility, Sociedad Argentina de Cirugía Ginecológica
Member, Ethics Committee, AAGL**

Classic 2002 **metanalysis** including 22 studies

The chance of achieving pregnancy was **significantly lower** for endometriosis patients (odds ratio, **0.56**; 95% confidence interval, 0.44–0.70) when compared with tubal factor controls

Also reported was a **decrease** in fertilization and implantation rates, and a **significant decrease** in the number of oocytes retrieved for endometriosis patients

Pregnancy rates for women with **severe** endometriosis were **significantly lower** than for women with mild disease (OR, **0.60**; 95% CI, 0.42–0.87)



K Barnhart M.D., R Dunsmoor-Su M.D., C Coutifaris M.D., Ph.D.. Effect of endometriosis on in vitro fertilization. Fertility and Sterility. Vol 77, Iss 6, June 2002, P 1148-1155

In a population of 717 patients of multiethnic origin that underwent an IVF procedure, 9.5% had a diagnosis of endometriosis (including 3.5% endometrioma patients)

Oocyte quantity, embryo quality, and fertilization rates **did not relate to endometriosis**

The prevalence of endometriosis appears to be higher in Filipino, Indian, Japanese, and Korean women presenting for IVF treatment than for Caucasian women; however, the discrepancy in IVF outcomes was conditionally independent of the presence of endometriosis



Yamamoto, A., Johnstone, E.B., Bloom, M.S. *et al.* A higher prevalence of endometriosis among Asian women does not contribute to poorer IVF outcomes. *J Assist Reprod Genet* **34**, 765–774 (2017). <https://doi.org/10.1007/s10815-017-0919-1>

216 endometriosis patients were compared with 209 that presented other causes of infertility.

Patients with endometriosis had significantly **lower estradiol on trigger day (9986 ± 6710 vs $12\ 220 \pm 9414$ pg/mL, respectively) **and number of retrieved oocytes** (12.7 ± 8.6 vs 14.0 ± 10 , respectively)**

The authors found a consistent **decline in clinical and ongoing pregnancy rates with **increasing stage** of endometriosis**

The presence of **endometrioma in patients with stages 3 and 4 endometriosis **did not alter** IVF outcome**



Basheer AlKudmani, Itai Gat, Danielle Buell, Joveriyah Salman, Khaled Zohni, Clifford Librach, Prati Sharma. In Vitro Fertilization Success Rates after Surgically Treated Endometriosis and Effect of Time Interval between Surgery and In Vitro Fertilization. Journal of Minimally Invasive Gynecology. Volume 25, Issue 1, Jan 2018, P 99-104

Assisted reproductive technology outcomes were evaluated in a series of 359 endometriosis patients to identify **prognostic factors**

Endometriotic lesions were classified into **3 phenotypes:**

- **superficial peritoneal endometriosis**
- **endometrioma**
- **deep infiltrating endometriosis**

In a total of 720 ART cycles, 158 (44%**) patients became **pregnant**, and 114 (**31.8%**) had a **live birth****

Endometriosis phenotype seems to have no impact on ART results

An altered ovarian reserve is associated with decreased pregnancy rates



C MaignienMD, P SantulliMD, PHD, V GayetMD, M-C LafayPilletMD, D KorbMD, M BourdonMD, L MarcellinMD, PHD, D ZieglerMD, CChapronMD. Prognostic factors for assisted reproductive technology in women with endometriosis-related infertility. American J of Obstetrics and Gynecology Vol 216, Iss 3, March 2017, P 280.e1-280.e9

This group studied **QOL** of endometriosis patients and pregnancy outcomes with **IVF**

81 endometriosis women (with 142 embryo transfer [ET] cycles) and **605 non-endometriosis** women (with 1063 ET cycles) were included

QoL was measured by **FertiQoL** at the date **before ET**

QoL scores were significantly associated with successful IVF:

- one unit increase in QoL scores increased **2.5%** the chances of ongoing pregnancy
- It also increased **2.8%** the chances of livebirth

p < .05

This association was also observed among **endometriosis** women but it **did not** reach statistical significance.

**As so, we can conclude that this is
an ongoing controversy that
needs more evidence to clear up**

IN VITRO FERTILIZATION AND ENDOMETRIOSIS. OUR EXPERIENCE

Irigoyen MB, Cundom E, Rao S, Griessi D, Raffo F, Rolla ED
Fertilab, Buenos Aires, Argentina
Corresponding author: docrolla@gmail.com

The disease, especially at the ovarian site has been shown to have a **detrimental** impact on ovarian physiology

The local intrafollicular environment of affected patients is characterized by **alterations** of the granulosa cell compartment including **reduced** P450 aromatase expression and **increased** intracellular reactive oxygen species

Ninety-two subjects with endometriosis were included in this retrospective cohort study and compared to a non endo group of **660** patients (Jan 2018/Dec 2019)

Endometriosis was the **only** cause of infertility in **18** of them

Poor ovarian reserve was present in association to endometriosis in **29** patients

Tubal and peritoneal factor was associated to endometriosis in **10** patients

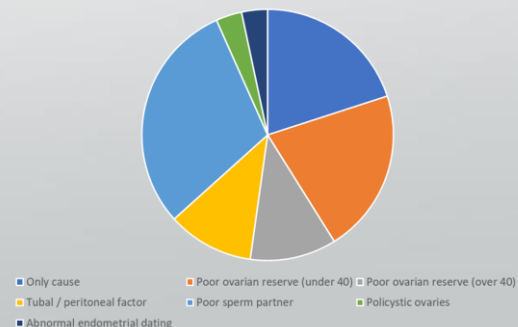
Other combined causes of infertility were:

- **poor** sperm quality (**27** partners)
- **polycystic ovarian syndrome (PCO)** in **3** patients
- **3** presented **abnormal** endometrial dating as measured in previous cycle by ERA

All patients had **previous surgery** for endometriosis

All procedures were performed by **ICSI**

DEMOGRAPHY



RESULTS

	RESULTS		Fisher`s Test
	ENDOMETRIOSIS	GENERAL	P
Average age	37	38	p=1 (ns)
Mean number of harvested oocytes	6	7	p=1 (ns)
Average of total mature oocytes	5	5	p=1 (ns)
Fertilization rate	5	4	p=1 (ns)
% of patients who underwent embryo transfer	67	72,8	p=0,44 (ns)
% of patients who went to "freeze all" procedure	20	20,3	p=1 (ns)
% of patients with no embryos for transfer	2	3	p=1 (ns)
% of patients with no oocytes harvested of no fertilization at all	0,7	3,4	p=0,08 (ns)
%of patients that froze "excess" embryos after transfer	45	41,8	p=1 (ns)
% of patients who had blastocyst stage embryos	49	51	p=0,88 (ns)
% of cases with Beta HCG subunit positive dosages	33,33	34	ns
n	92	660	

No statistical differences vs. other causes of infertility

IVF by ICSI in our fertility center was **equally** profitable for couples where the female partner was affected by endometriosis and general population (**33.3%** pregnancy rates for **endometriosis** patients vs. **34%** for **non-endo** patients)

Contrary to earlier publications, and agreeing with more recent studies, endometriosis “**per se**” is **not** at first glance **detrimental** when those assisted reproductive techniques are applied. In this publication we intentionally did not segmented endometriosis cases by their severity or previous surgical histories.

We **outstand** the fact that they all had **previous surgery** for endometriosis, and this could make a difference

Thank you for your attention