

IN VITRO FERTILIZATION AND ENDOMETRIOSIS. OUR EXPERIENCE

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INTRODUCTION

Endometriosis is an estrogen-dependent chronic inflammatory condition that affects women in their reproductive period causing infertility and pelvic pain. The disease, especially at the ovarian site has been shown to have a detrimental impact on ovarian physiology. Indeed, 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 generation (1).

There is a generalized concept on the poor results of ICSI in patients with endometriosis. On the contrary, Fujimoto (2) in a recent publication found that in his treated population, endometriosis prevalence among Asian women was larger than among Caucasians (15.7 vs. 5.8%, $p < 0.01$), but that at the time of IVF, the quality and quantity of oocytes and embryos, as well as the fertilization rates, did not relate to endometriosis, in a population where endometriosis was diagnosed in 9.5% of participants; 3.5% of them with endometriomas.

OBJECTIVES

To report our experience with IVF in endometriosis patients in a retrospective cohort study. We would like to share some preliminary data of a pilot ongoing study on IVF in patients with endometriosis, including all procedures performed during the years 2018 and 2019.

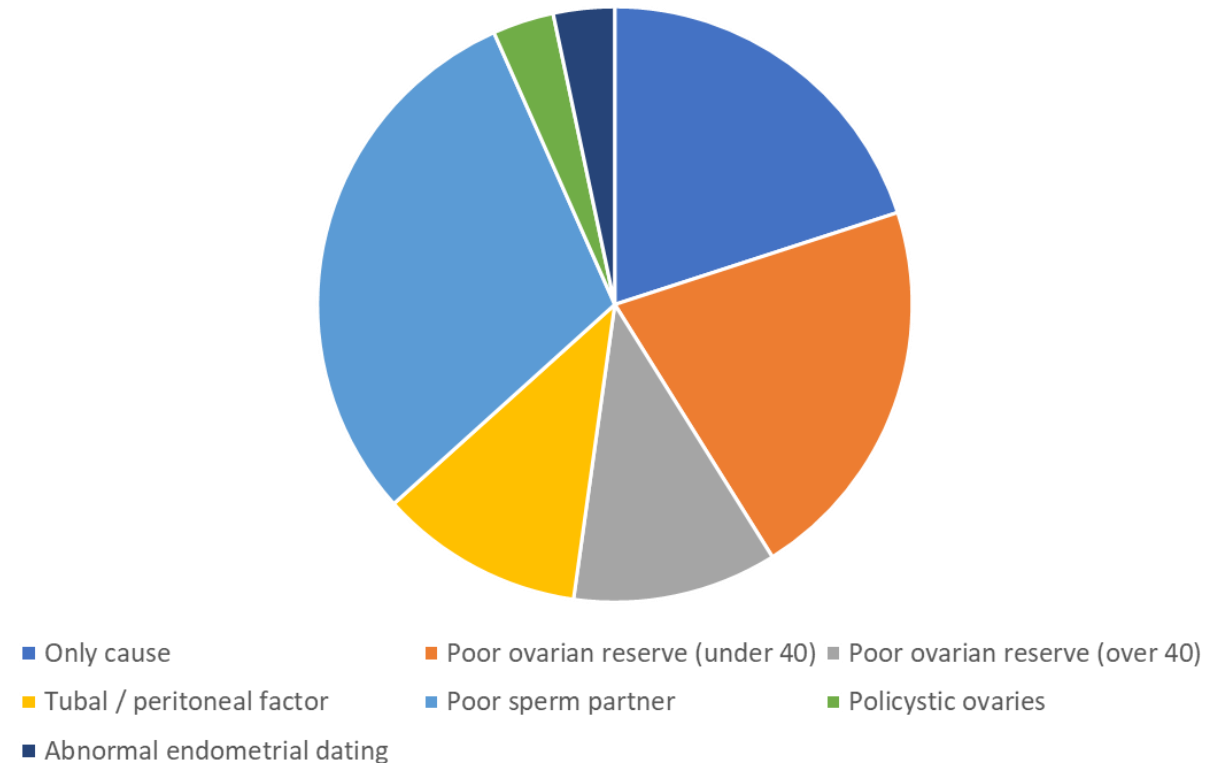
STUDY DESIGN

Retrospective cohort study carried on in a private fertility center (Fertilab) with data acquired in previous IVF treatments. Due to the characteristics of the study design no supervision or authorization by an Ethics Committee was required.

MATERIALS AND METHODS

Ninety-two subjects – out of an overall IVF clientele of 660 patients in this span of time - were included in this retrospective cohort study .Of the ninety-two women affected by endometriosis, this disease was the only cause of infertility in 18 of them. Poor ovarian reserve was present in association to endometriosis in 29 of them, 10 women being older than forty years in that group. Tubal and peritoneal factor was associated to endometriosis in 10 patients. Other combined causes of infertility were poor sperm quality (27 of endometriosis patients 'partners), polycystic ovarian syndrome (PCO) in 3 patients (of the endometriosis group), and 3 of them presented abnormal endometrial dating as measured in previous cycle by ERA (all over 40 years). All patients had previous surgery for endometriosis. All procedures were performed by ICSI.

DEMOGRAPHY



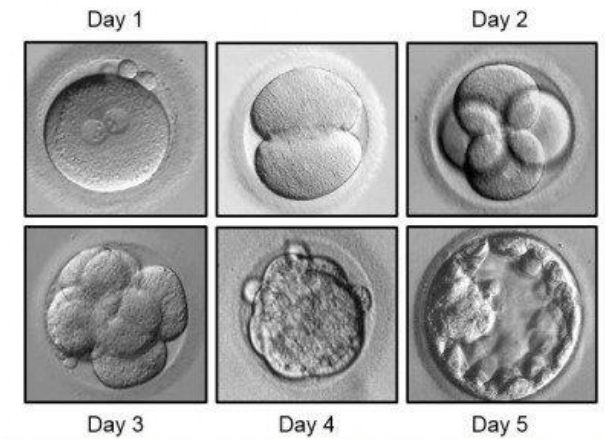
PROCEDURES

In all cases IVF was performed using the ICSI technique. Attempt was made to transfer embryos at Blastocyst stage (49% of endometriosis patients and 51% of non endo patients).

ICSI



EMBRYO CULTURE



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 | |

CONCLUSSIONS

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” it 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. Our purpose was to give a solid example of how, modern IVF by ICSI can help those women to achieve pregnancies with identical chances vs. the general population.

BIBLIOGRAPHY

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- 2) Yamamoto, A., Johnstone, E.B., Bloom, M.S., Huddleston H.G. & Fujimoto V.Y. 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>