Double trouble for fertility:

new insight into adenomyosis and endometriosis

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Disclosure

Name of entity	Grant	Personal fees	Non-financial support	Other	Comments
Merck	☑	☑	☐	☐	Unrestricted research grant and honoraria
Gedeon	☑	☑	☐	☐	Unrestricted research grant and honoraria
Ferring	☑	☑	☐	☐	Unrestricted research grant and honoraria
Besins	☐	☑	☐	☐	Honoraira
Ipsen	☐	☑	☐	☐	Honoraira
Theramex	☑	☑	☐	☐	Unrestricted research grant and honoraria

Endometriosis

Google trends Worldwide: An important social issue

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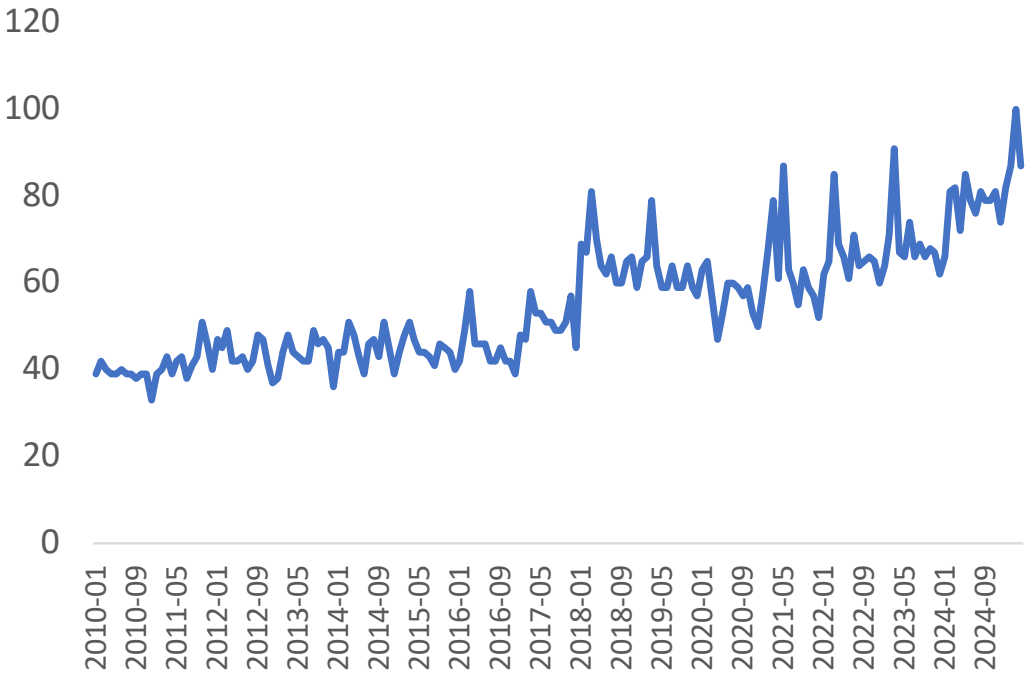
Interest over time



Interest by region

Google trends – Export April 2025

Endometriosis

A major public health concern

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10% of reproductive age women
(190 Million)

Chronic disease

Life-impacting severe symptoms
(Pain –infertility – others)

Economic burden

Rethinking endometriosis diagnosis

Heterogenous disease

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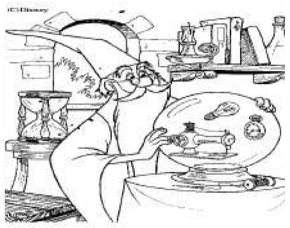
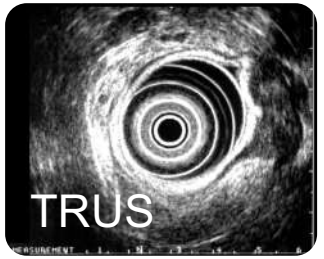
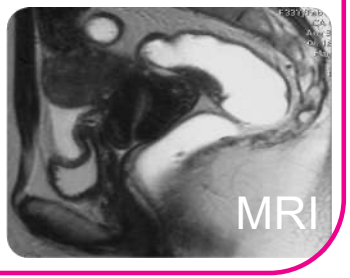
Questionning



Imaging



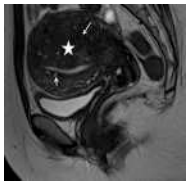


Endometriosis diagnosis

SUP

OMA

DIE



AdOsis

Endometriosis phenotypes

Chapron C, Marcellin L, Boorghese B, Santulli P Nat Rev Endocrinol (2019)

Adenomyosis and endometriosis

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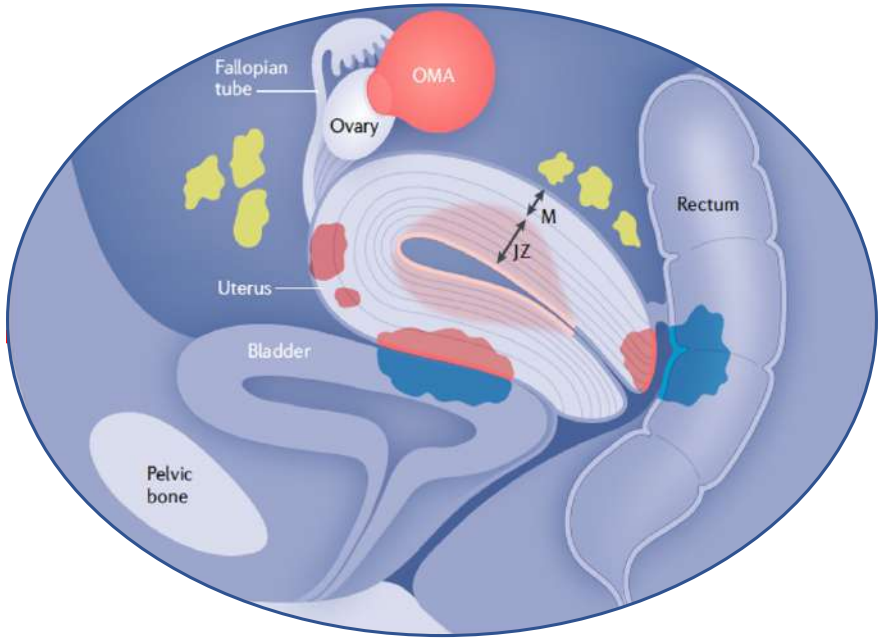
ADENOMYOSIS



ENDOMETRIOSIS

Enigmatic relationship

30-60% association

Chapron, Santulli *et al.*, Hum Reprod (2017)

Endometrisois and Adenomyosis: infertility

Mechanisms

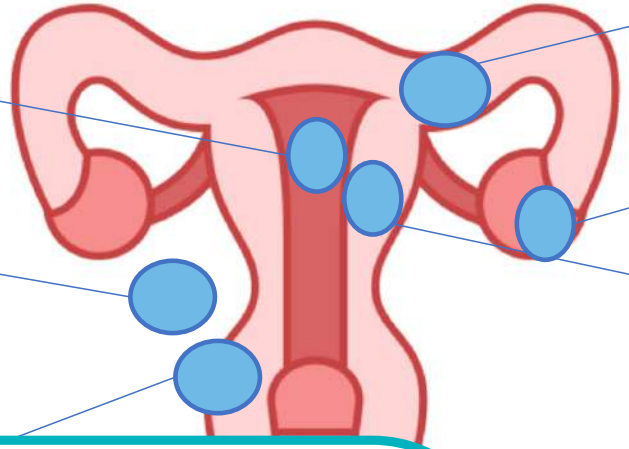
Uterus :
- Altered eutopic endometrium
- Inflammation
- Oxidative stress
- Lack of adhesion molecules

Pelvic cavity:
Proliferation of macrophages
Phagocytic dysfunction
Release of proinflammatory factors

Abnormal uterotubal transport
Tubal occlusion

Ovaries:
Decreased ovarian response
Altered oocyte quality?
Iron overload (proinflammatory factors)

Anatomical distortion of the uterine cavity
Disturbed uterine peristalsis



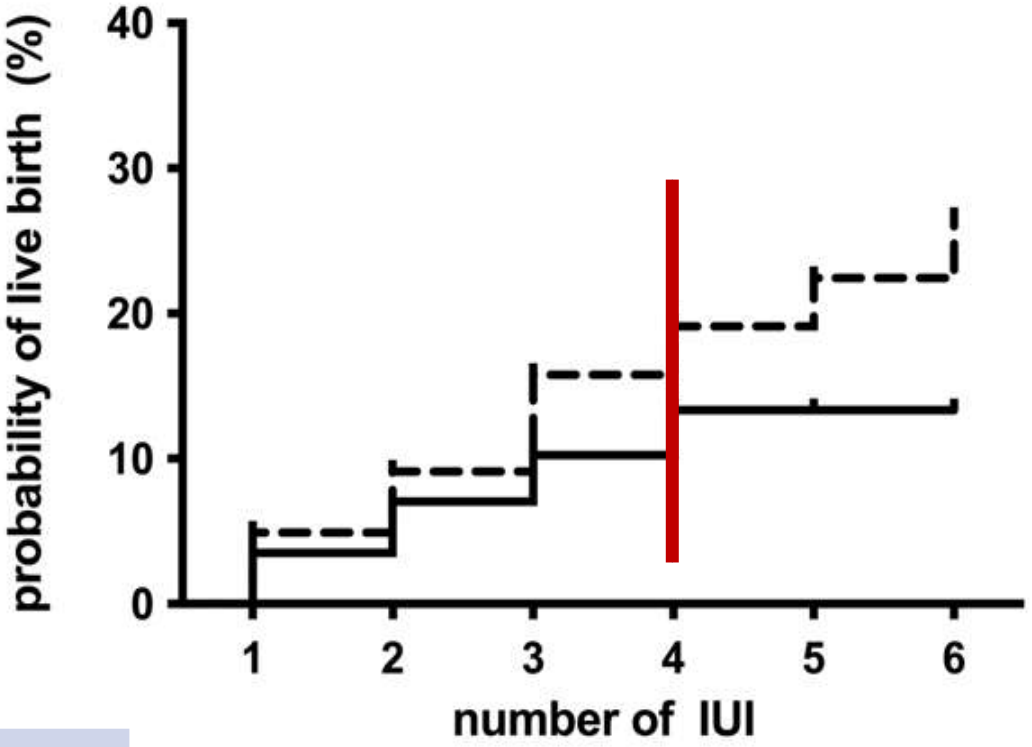
105 (43.2%) spontaneous pregnancy
76 (41.5%) with DIE

Leone Roberti Maggiore *et al.*, Hum Reprod (2014)

Santulli et al RBMO 2025
de Ziegler D et al. Lancet 2010

Endometriosis and infertility

Mechanisms: donor sperm intrauterine insemination



--- : control group

___: endometriosis group

Phenotype of endometriosis[a]	
SUP	7 (7.4)
OMA	7 (7.4)
DIE	80 (85.1)

Characteristics	Control group	Endometriosis group
Total number of women	447	94
Total number of IUI	1240	257

submitted

Fertility and endometriosis-adenomyosis

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- Endometriosis and adenomyosis related infertility: who matters the most ?
- What are the available therapeutic options for infertility?
- What conclusions can we draw ?

Fertility and endometriosis-adenomyosis

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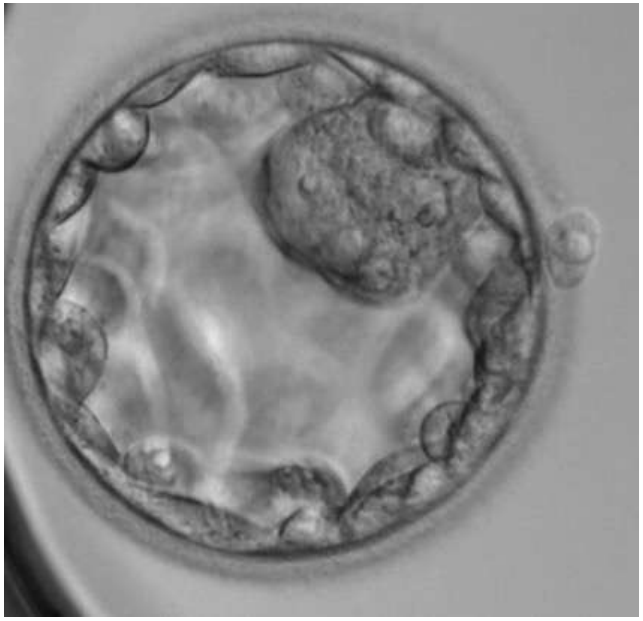
- Endometriosis and adenomyosis related infertility: who matters the most ?
- What are the available therapeutic options for infertility?
- What conclusions can we draw ?

Endometriosis and infertility

Implantation

VS



OMA ?
DIE ?
Adenomyosis ?
Previous surgery ?

Endometriosis related altered ovarian function ?

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Endometriosis and ovarian reserve

Quality : OSIS and Aneuploid

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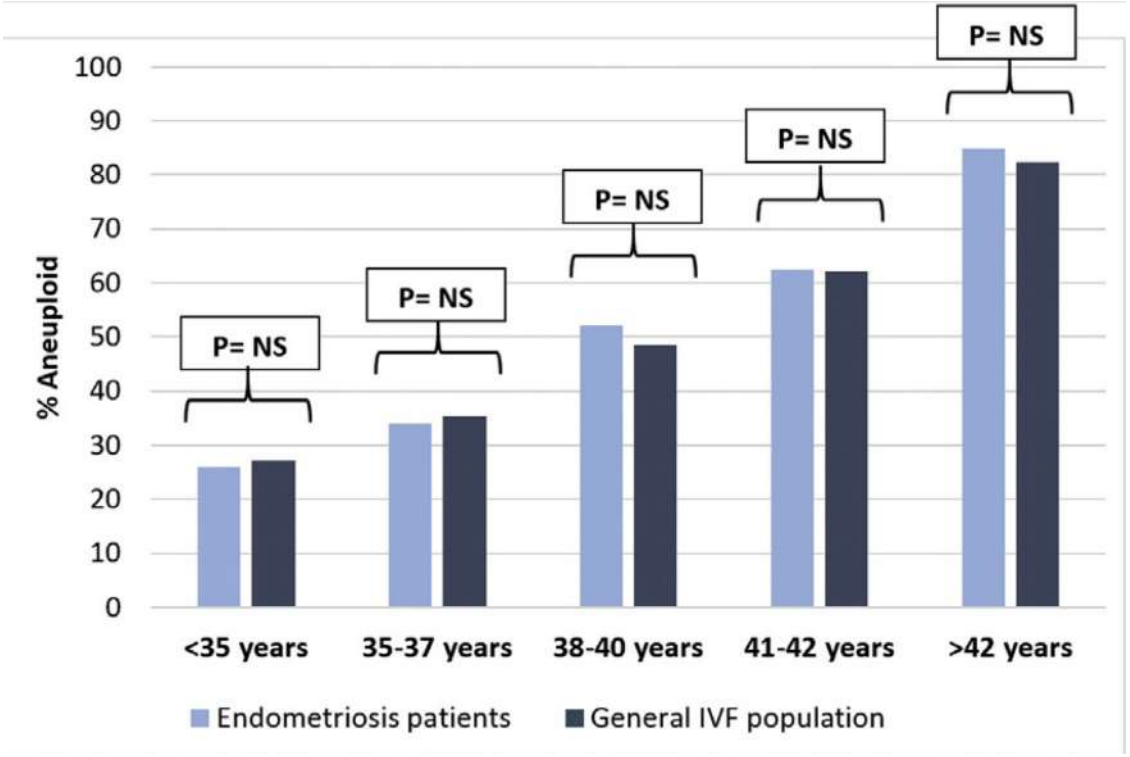
ART results according to Aneuploid: a PGS study



Endometriosis: 1880 blastocysts from 305 patients
Controls: 23054 blastocysts from 3798

Juneau et al., Fertil Steril (2017)

Endometriosis and ovarian reserve

Quality : OSIS and ART outcomes

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Table II Live birth rate in women with endometriosis following donor oocyte recipient versus autologous ART cycles.

	Donor oocyte recipient cycle	Autologous ART cycle	Unadjusted OR (99.5% CI)	Adjusted OR (99.5% CI)*
Fresh and frozen LBR per cycle	212/758 (28.0%)	3830/12 856 (29.8%)	0.92 (0.72, 1.16)	1.0 (0.78, 1.28)
Fresh ART	167/528 (31.6%)	3295/10 628 (31.0%)	1.03 (0.79, 1.35)	1.05 (0.79, 1.41)
Frozen ART	45/230 (19.6%)	535/2228 (24.0%)	0.77 (0.47, 1.25)	0.85 (0.51, 1.41)

*Adjustment for confounders (number of previous IVF cycles, previous live birth, year of treatment, day of embryo transfer, number of embryo transferred, fresh and frozen cycle for combined fresh/frozen).
LBR, live birth rate; OR, odds ratio.

Little/No effect on oocyte quality !!

UK: Human Fertilization and Embryology Authority (HFEA)
From 1996 to 2016
758 donor oocyte recipients, where the recipients with endometriosis
12 856 autologous IVF cycles with endometriosis as the sole cause of infertility

Kamath MS et al., HR Open (2022)

Endometriosis and ovarian reserve

Follicular burnout

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Altered ovarian reserve *per se* ?

JCEM THE JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM

CLINICAL RESEARCH ARTICLE

Endometriosis Triggers Excessive Activation of Primordial Follicles via PI3K-PTEN-Akt-Foxo3 Pathway

Arisa Takeuchi,[1] Kaori Koga,[1] Erina Satake,[1] Tomoko Makabe,[1] Ayumi Taguchi,[1] Mariko Miyashita,[1] Masashi Takamura,[1] Miyuki Harada,[1] Tetsuya Hirata,[1] Yasushi Hirota,[1] Osamu Yoshino,[2] Osamu Wada-Hiraike,[1] Tomoyuki Fujii,[1] and Yutaka Osuga[1]

[1]Obstetrics and Gynecology, University of Tokyo, Hongo Bunkyo Tokyo 113-8655, Japan; and [2]Obstetrics and Gynecology, Kitasato University School of Medicine, Kitasato, Minami-ku, Sagamihara-shi, Kanagawa 252-0374, Japan

ORCiD numbers: 0000-0002-5057-4120 (K. Koga).

J Clin Endocrinol Metab, November 2019,

Endometriosis and ovarian reserve

Oocyte quantity : AMH levels

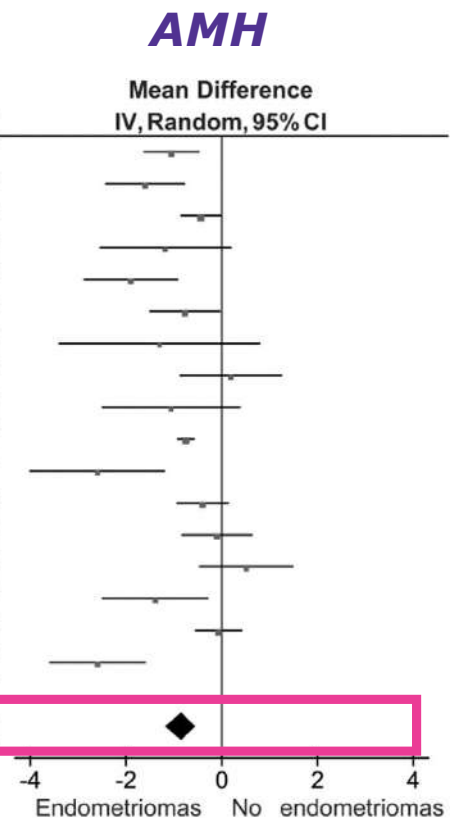
Meta-analysis :
- *39 studies*
- *968 non-operated OMA*
- *1874 controls*

AMH

Study or Subgroup	Endometriomas Mean	SD	Total	No endometriomas Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI
Chen 2014	1.53	1.37	40	2.58	1.58	58	7.8%	-1.05 [-1.64, -0.46]
Chiang 2015	2.6	2	23	4.2	2	496	6.1%	-1.60 [-2.44, -0.76]
Ercan 2010	1.62	1.09	47	2.06	0.51	12	8.9%	-0.44 [-0.86, -0.02]
Ergun 2015	1.92	2.31	26	3.1	2.64	24	3.5%	-1.18 [-2.56, 0.20]
Jeon 2015	4.12	2.42	65	6.02	2.29	32	5.2%	-1.90 [-2.89, -0.91]
Kim J.Y. 2013	2.84	2.98	102	3.61	3.3	198	6.7%	-0.77 [-1.51, -0.03]
Kim Y.J. 2017	4.3	3.07	59	5.6	4	16	1.9%	-1.30 [-3.41, 0.81]
Kwon 2014	5.03	3.07	68	4.84	2.26	32	4.8%	0.19 [-0.88, 1.26]
Lind 2015	2.25	2.14	18	3.31	3.25	36	3.3%	-1.06 [-2.51, 0.39]
Pacchiarotti 2013	0.97	0.59	65	1.72	0.63	130	10.2%	-0.75 [-0.93, -0.57]
Salihoglu 2016	3.1	1.9	34	5.7	3.7	33	3.4%	-2.60 [-4.01, -1.19]
Somigliana 2014	2.27	2.01	122	2.67	2.68	163	8.1%	-0.40 [-0.94, 0.14]
Streuli 2012	4	3	77	4.1	3.4	413	6.7%	-0.10 [-0.85, 0.65]
Tanprasetkul 2014	2.84	2.47	39	2.33	1.91	38	5.2%	0.51 [-0.47, 1.49]
Uncu 2013	2.81	2.15	30	4.2	2.26	30	4.6%	-1.39 [-2.51, -0.27]
Wdowiak 2016	3.64	1.94	144	3.71	2.09	115	8.4%	-0.07 [-0.57, 0.43]
Yoo 2011	1.5	0.9	9	4.1	2.9	48	5.1%	-2.60 [-3.61, -1.59]
Total (95% CI)			**968**			**1874**	**100.0%**	**-0.84 [-1.16, -0.52]**

Heterogeneity: $Tau^2 = 0.25$; $Chi^2 = 54.50$, $df = 16$ ($P < 0.00001$); $I^2 = 71\%$

Test for overall effect: $Z = 5.20$ ($P < 0.00001$)



AMH: Anti-Müllerian hormone; OMA: Ovarian endometrioma

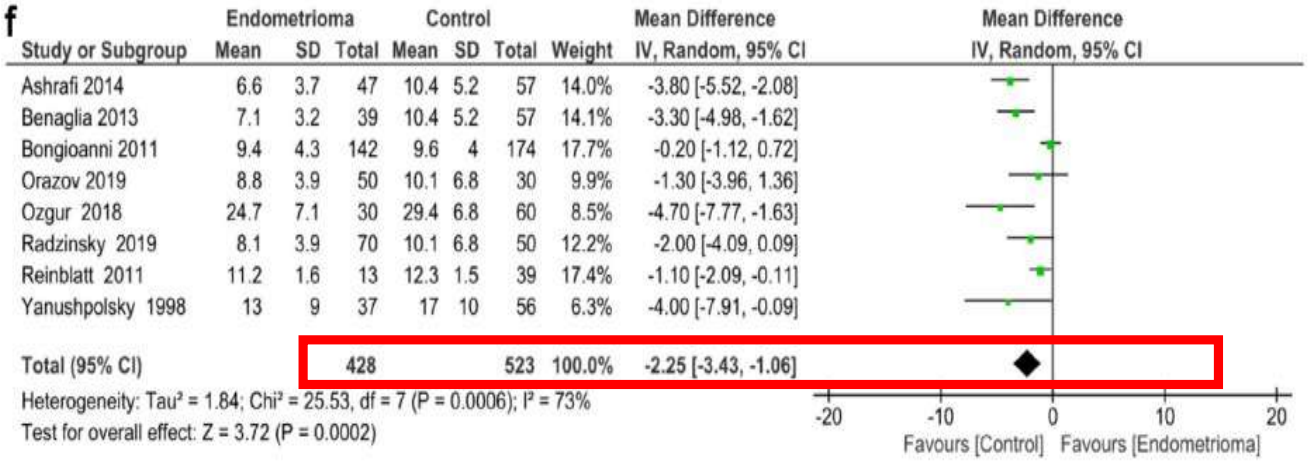
Muzii L et al. Fertil Steril. 2018

Endometriosis and ovarian reserve

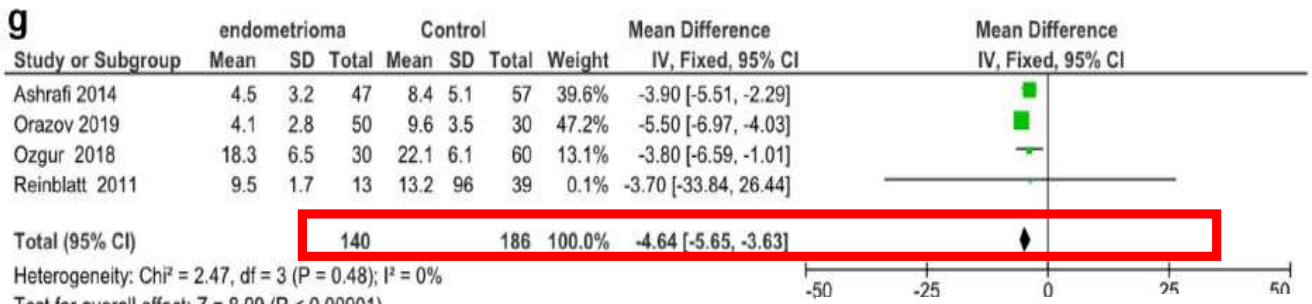
Oocyte quantity : ovarian response to stimulation

Meta-analysis :
- *8 observational studies*
- *428 intact OMA*
- *544 controls*

Number of oocytes



Number of mature oocytes



OMA + **Controls**

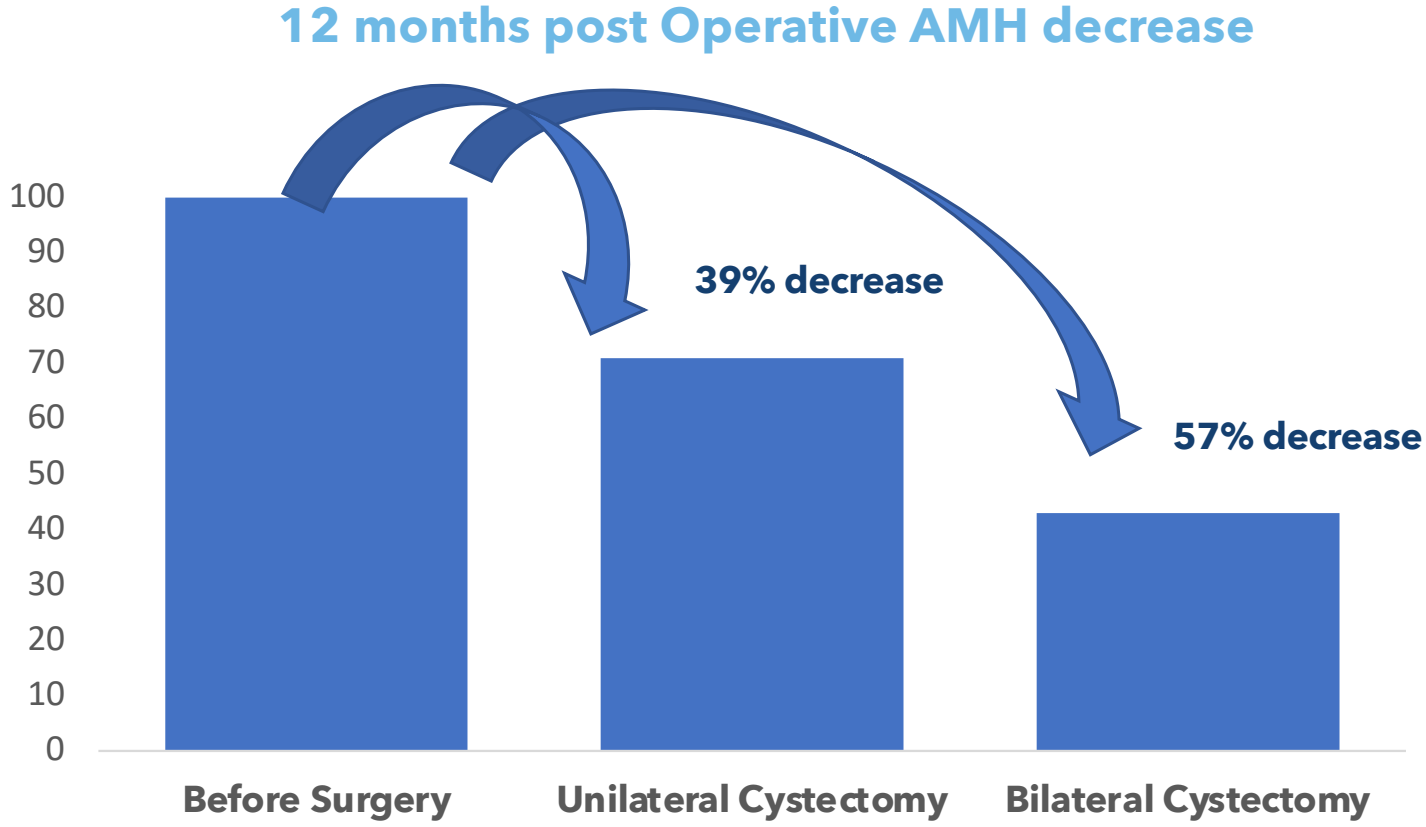
Alshehre. Arch Gynecol Obstet. 2021

The studies were not adjusted for dose of Gn and ovarian reserve

OMA: Ovarian endometrioma

Endometriosis and infertility: surgery

Endometrioma and ovarian reserve

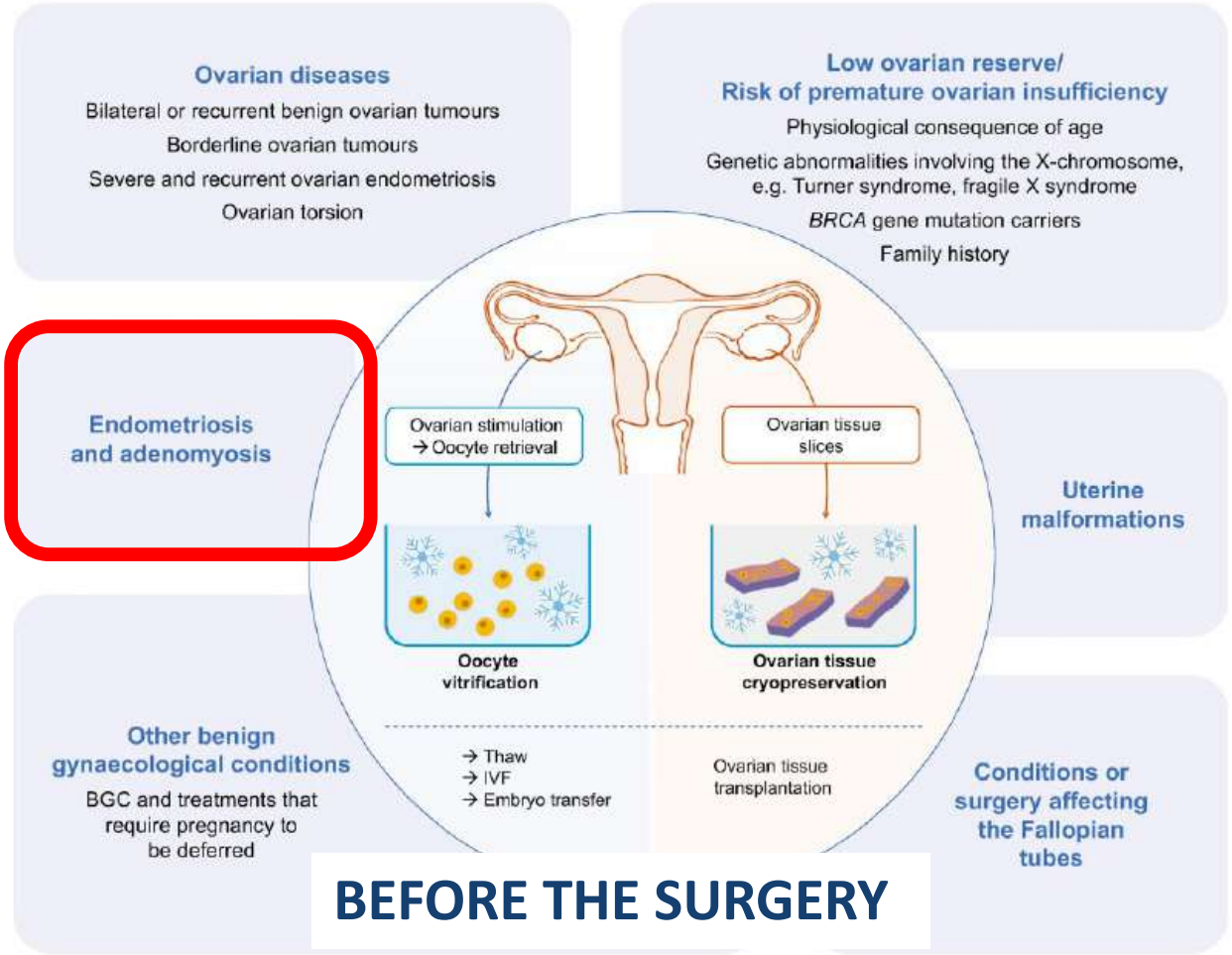


Metaanalysis
12 studies

Younis YS *et al.*, HRU (2019)

Fertility preservation and BGC

Endometriosis



BGC, Benign gynaecological condition

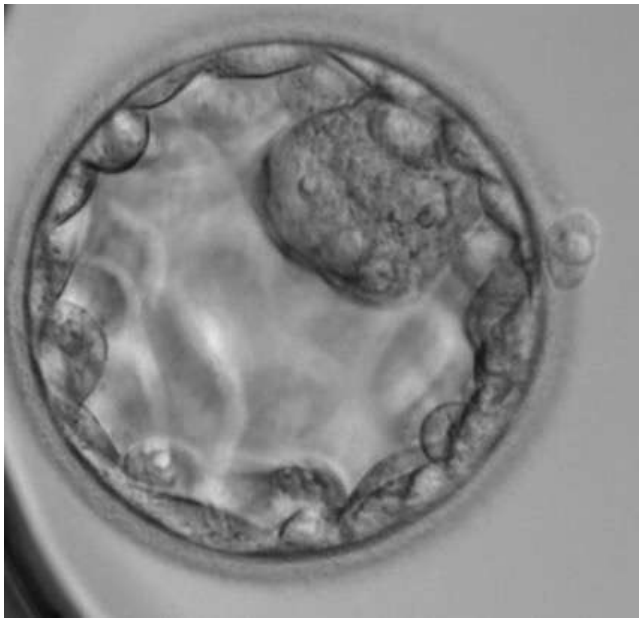
Santulli P, et al. HR Open 2023

Endometriosis and infertility

Implantation

OMA ?
DIE ?
Adenomyosis ?
Previous surgery ?

VS



Endometriosis related altered ovarian function ?

QUANTITY

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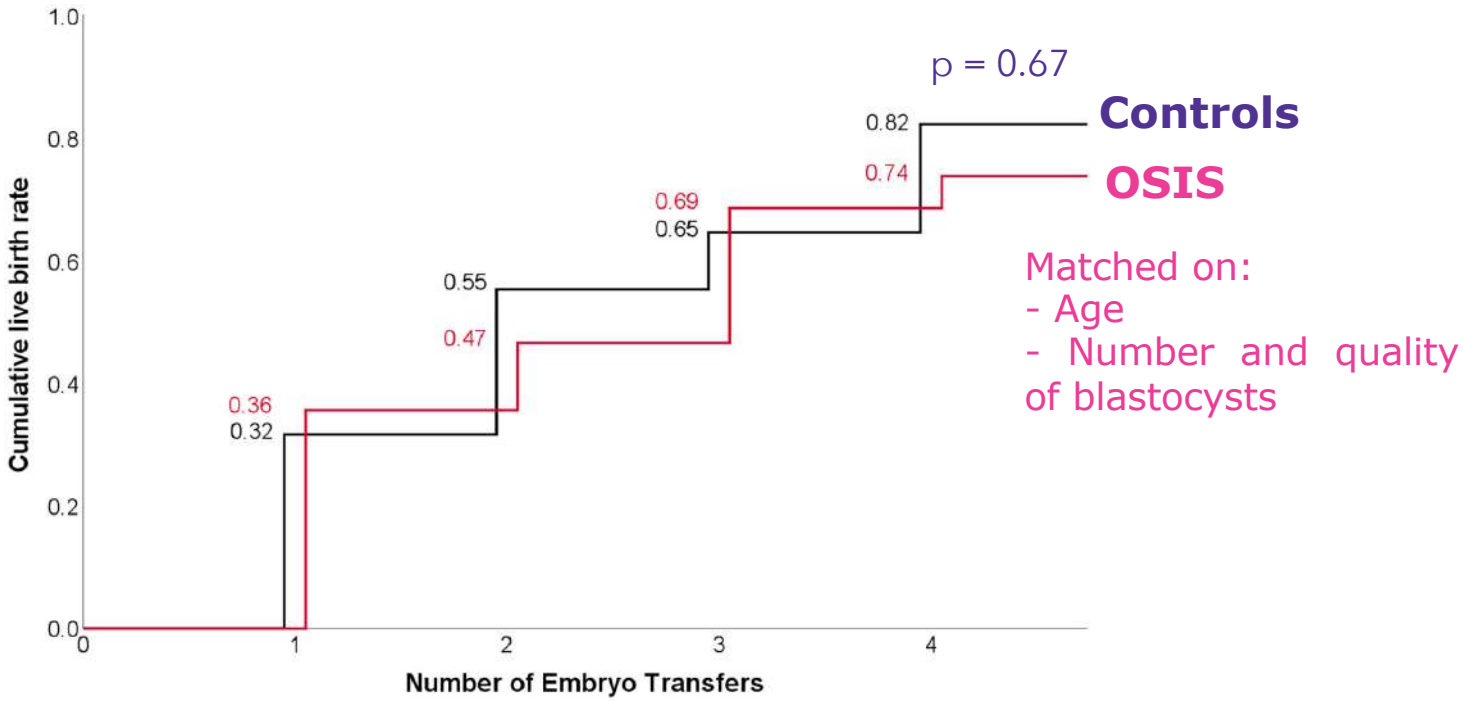
Endometriosis and infertility: ART

Uterine receptivity: a matched study

Retrospective matched case-control study:
- *FET cycles*
- *101 OSIS patients*
- *101 controls*

Cumulative live birth rates based on the number of FET in women with and without OSIS



Matched on:
- Age
- Number and quality of blastocysts

OSIS: Endometriosis; FET: Frozen embryo transfer

Casalechi. Reprod Biomed Online. 2023

Endometriosis and infertility: ART

Uterine environnement: ART results according to phenotype

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N=359 endometriosis infertile women
(720 cycles - 500 transfers)



	DIE	OMA	SUP	P value
Patients	212	98	49	
No. of cycles	425	200	95	
No. of ET	282/425 (66.4)	141/200 (70.5)	77/95 (81.1)	**0.018**
Clinical pregnancy rate per cycle	98/425 (23.1)	55/200 (27.5)	29/95 (30.5)	0.22
Clinical pregnancy rate per ET	98/282 (34.8)	55/141 (39)	29/77 (37.7)	0.67
Implantation rate	111/513 (21.6)	62/265 (23.4)	35/140 (25.0)	0.66
Abortion rate	30/98 (30.6)	22/55 (40.0)	16/29 (55.2)	**0.049**

Maignien, Santulli, *et al.*, AJOG (2017)

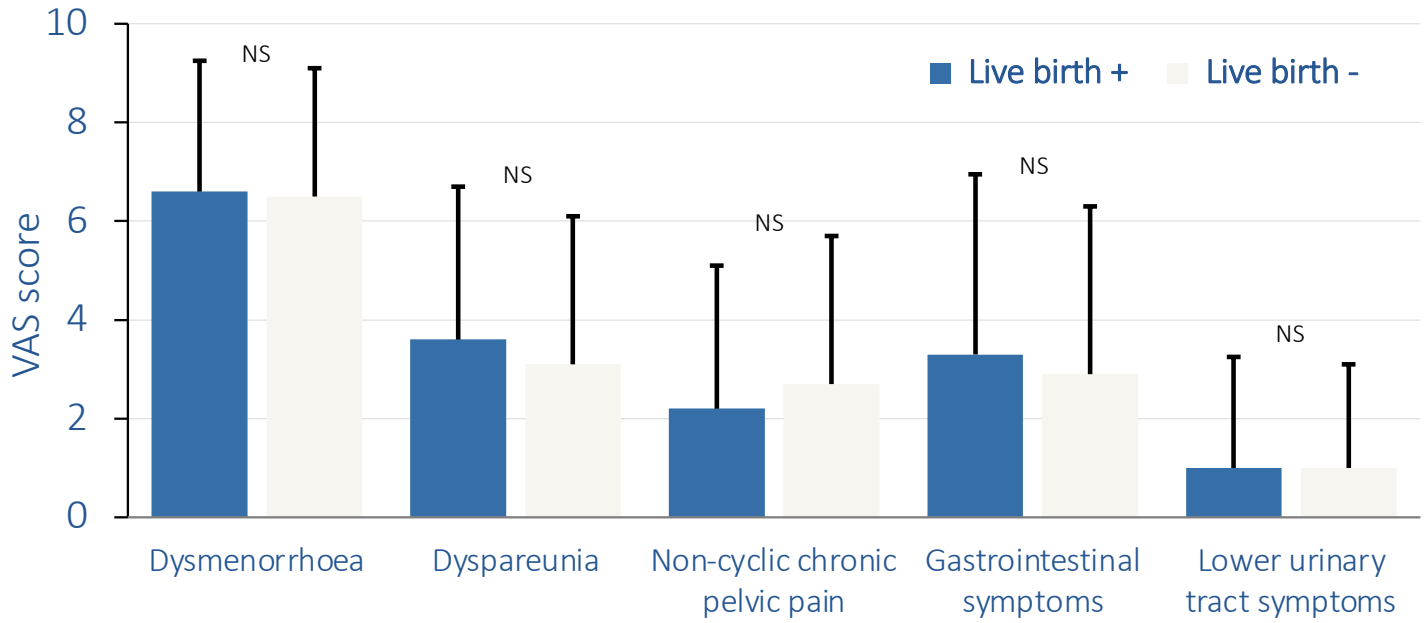
Endometriosis and infertility: ART

Uterine environnement: ART results according to pain symptoms

France, 2014 to 2021

354 endometriosis-affected women

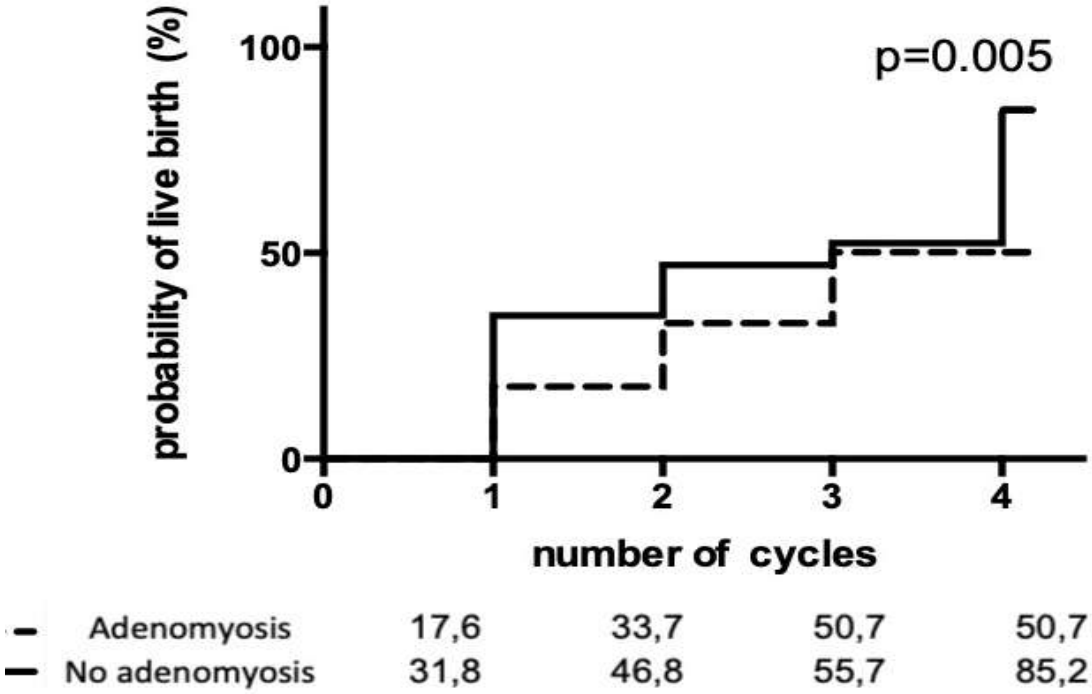
711 ART cycles



VAS, visual analogue scale

Maignien C, et al. Hum Reprod (2024)

Adenomyosis and infertility :
ART



202 patients with endometriosis
IVF
Adenomyosis vs no adenomyosis

Bourdon, et al Hum Reprod (2022)

Fertility and endometriosis-adenomyosis

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- Endometriosis and adenomyosis related infertility: who matters the most ?
- What are the available therapeutic options for infertility?
- What conclusions can we draw ?

Endometriosis and fertility

Therapeutic options

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Surgery

Hormones

ART

ART, assisted reproductive technology

Endometriosis and fertility

Therapeutic options

FERTILITE
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Surgery

Hormones

ART

ART, assisted reproductive technology

Endometriosis and hormonal treatments

Longer is the medical treatment higher is the pain relief

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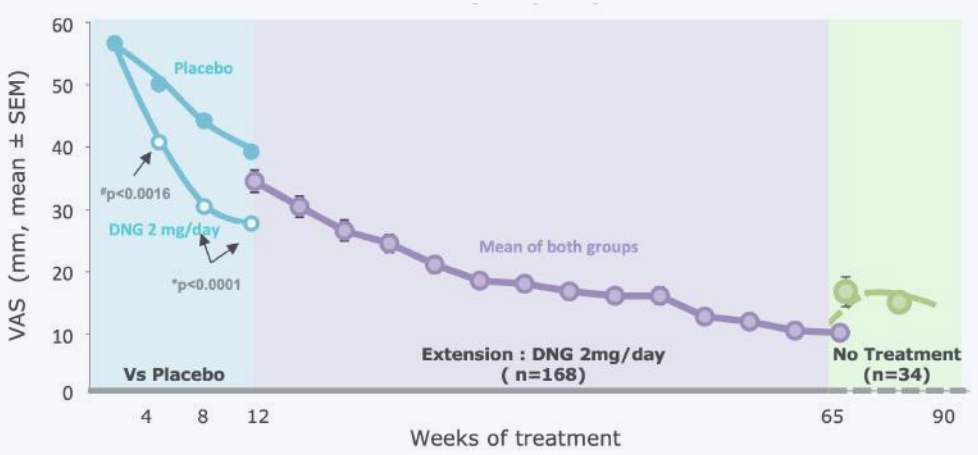
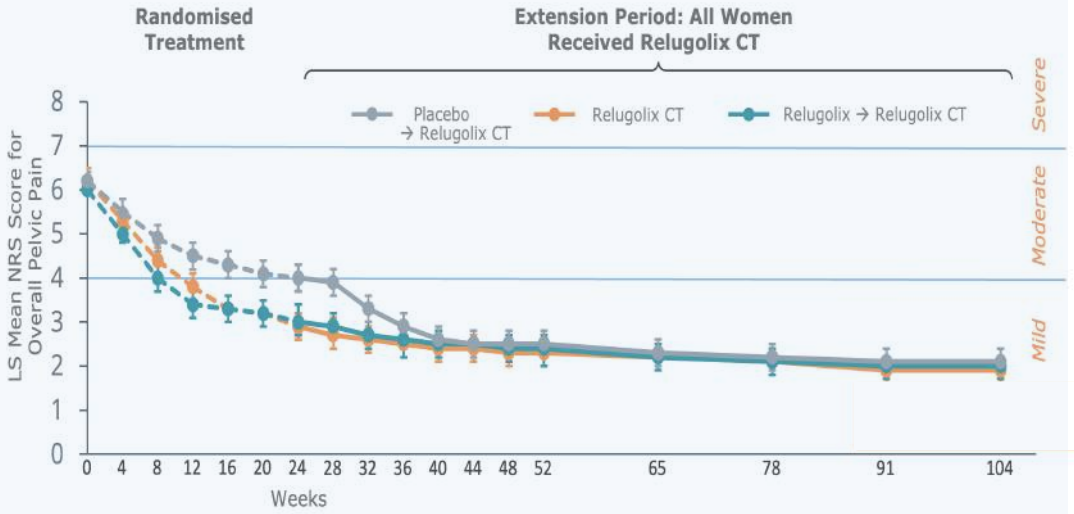
Dienogest (DNG)



Relugolix CT (RYEQO)



≈ 70% reduction from Baseline

SEM, standard error of the mean; VAS, visual analogue scale

Strowitzki T, et al. Eur J Obstet Gynecol Reprod Biol. 2010;151:193−198;
Petraglia F, et al. Arch Gynecol Obstet. 2012;285(1):167−173
Giudice LC, et al. Lancet 2022;399:2267–79
Becker CM et al, Hum Reprod. 2024 Jan 18:dead263. doi: 10.1093/humrep/dead263

Endometriosis and fertility

Therapeutic options

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Surgery | **Hormones** | **ART**

?

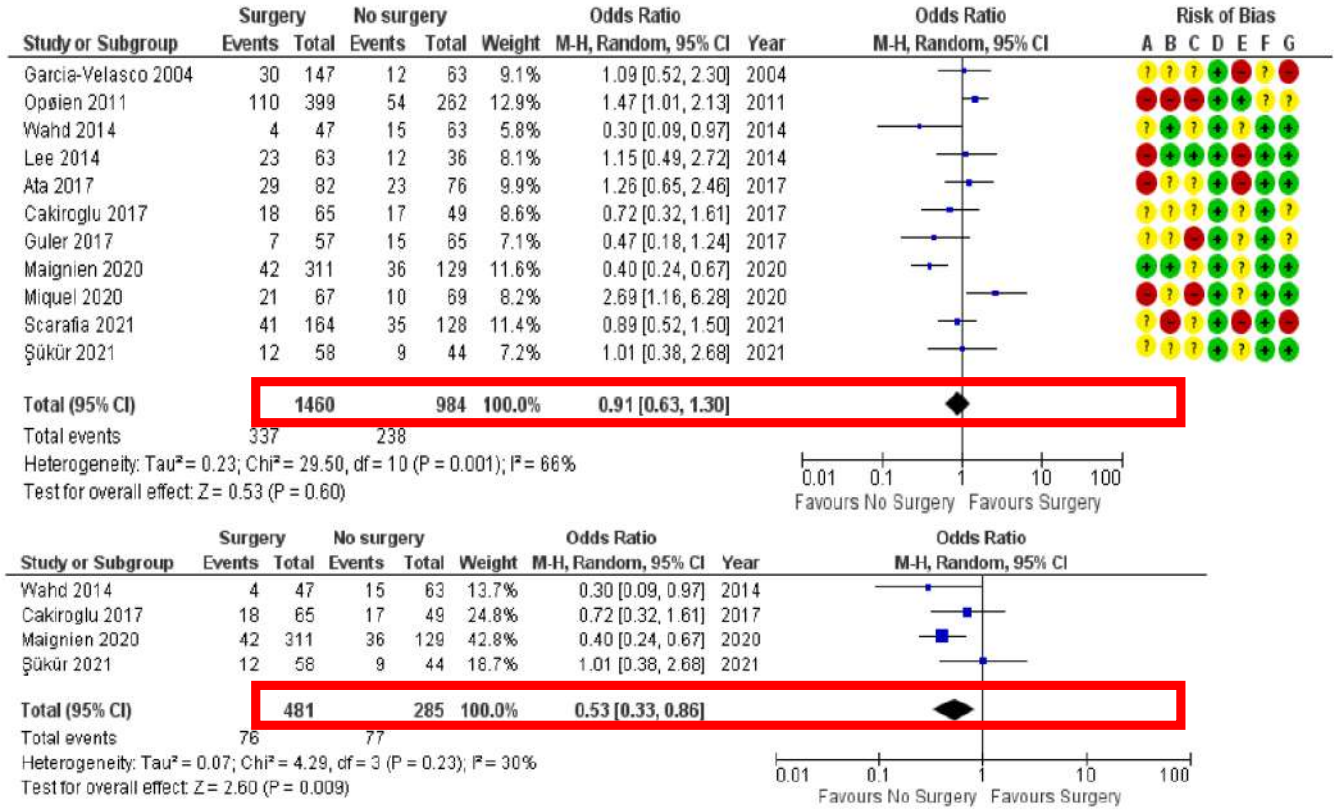
HAS BEEN

Endometriosis and infertility: Optimized ART

Surgery as pretreatment

ART live birth rates
Surgery before ART vs 1st line ART

Meta-analysis:
- *19 studies*
- *Infertile OSIS*
- *1st line ART vs ART after surgery*



Exclusion of studies with high risk of bias

Surgery - Surgery +

OSIS: Endometriosis

Bourdon, Maignien, *et al.*, Reprod Sci (2024)

Endometriosis and infertility:

Surgery vs ART : RCT

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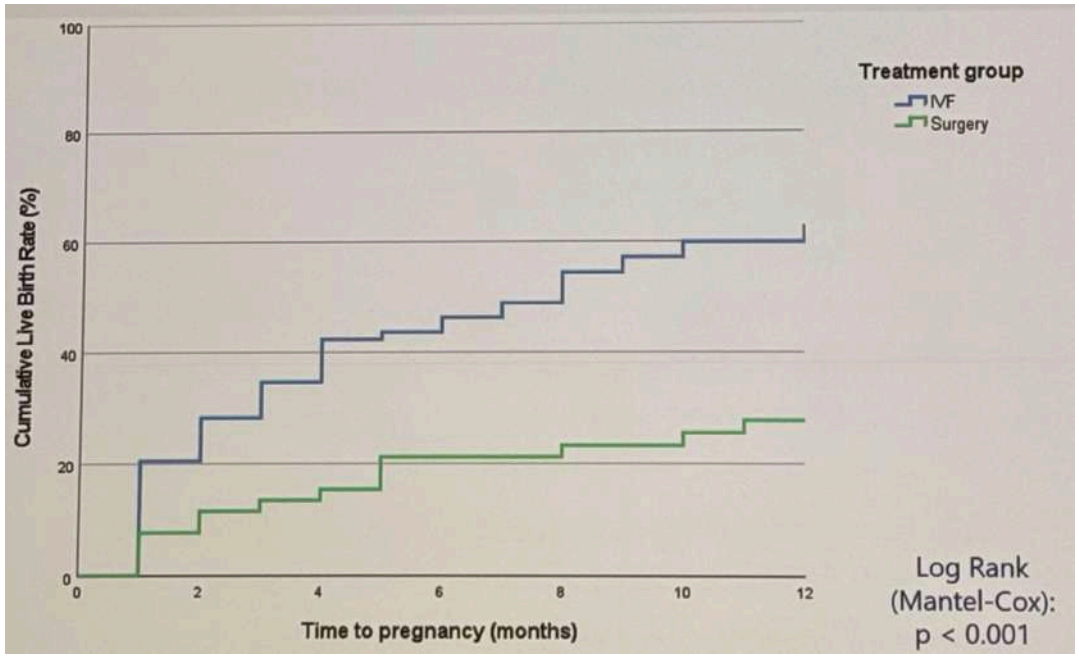
LBR

Population	IVF (n/N, %)	Surgery (n/N, %)	p
Randomized N=55	15/28 (54%)	7/27 (26%)	0,0364
PPT` N=75	33/50 (66%)	7/25 (28%)	0,0019
Total N=130	48/78 (62%)	14/52 (27%)	0,0001



Benaglia, *et al.*, ESHRE (2025)

Endometriosis and infertility: Optimized ART

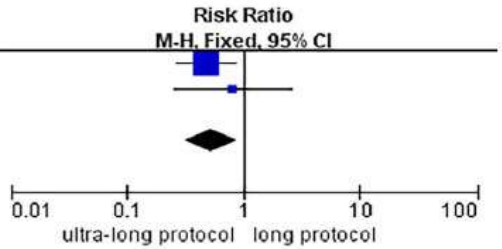
Long-term pituitary down-regulation pretreatment: Impact on efficacy

Meta-analysis:
- *7 RCTs*
- *Ultra-long vs long GnRHa protocols*
- *Outcome: clinical pregnancy rate*

ART outcomes
Live birth rates

Study or Subgroup	ultra-long protocol Events	Total	long protocol Events	Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Rodríguez-Tárrega 2020	12	71	27	76	83.9%	0.48 [0.26, 0.87]
Tomassetti 2021	4	20	5	20	16.1%	0.80 [0.25, 2.55]
Total (95% CI)		**91**		**96**	**100.0%**	**0.53 [0.31, 0.90]**
Total events	16		32			

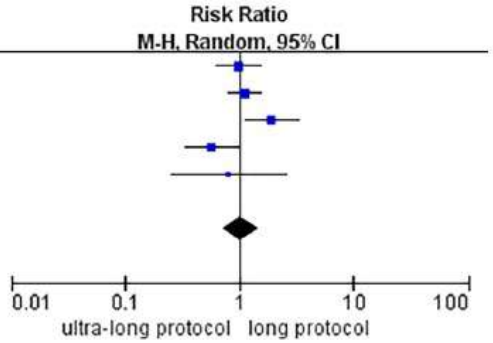
Heterogeneity: Chi² = 0.61, df = 1 (P = 0.43); I² = 0%
Test for overall effect: Z = 2.37 (P = 0.02)



Clinical pregnancy rates

Study or Subgroup	ultra-long protocol Events	Total	long protocol Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
Decleer 2016	24	61	23	58	23.5%	0.99 [0.64, 1.55]
Kaponis 2020	53	187	47	185	27.4%	1.12 [0.80, 1.56]
Maged 2018	25	45	13	45	20.7%	1.92 [1.13, 3.26]
Rodríguez-Tárrega 2020	15	71	28	76	20.4%	0.57 [0.34, 0.98]
Tomassetti 2021	4	20	5	20	8.1%	0.80 [0.25, 2.55]
Total (95% CI)		**384**		**384**	**100.0%**	**1.03 [0.71, 1.50]**
Total events	121		116			

Heterogeneity: Tau² = 0.10; Chi² = 10.34, df = 4 (P = 0.04); I² = 61%
Test for overall effect: Z = 0.17 (P = 0.87)



Ultra-long **Long protocol**

RCTs: Randomised Controlled Trials; GnRHa: Gonadotropin-releasing hormone agonist;
M-H: Mantel-Haenszel test

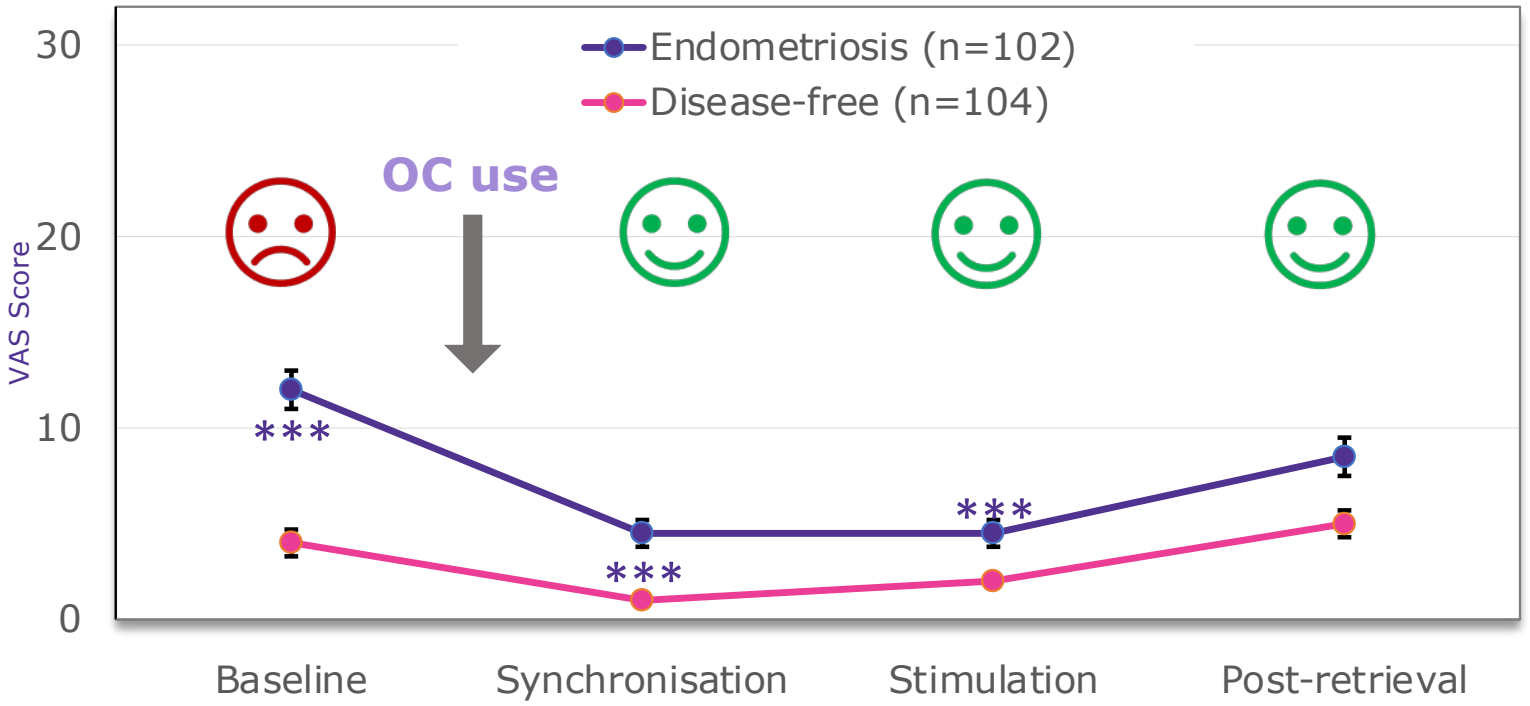
Tian et al. J Gynecol Obstet Hum Reprod (2023)

Endometriosis and infertility: Optimized ART

Pituitary down-regulation pretreatment: pain management

Prospective controlled cohort study:
- *102 OSIS patients*
- *104 controls*
- *VAS-score + quality of life assessment*

Evolution of pelvic pain during ART women with OSIS versus controls



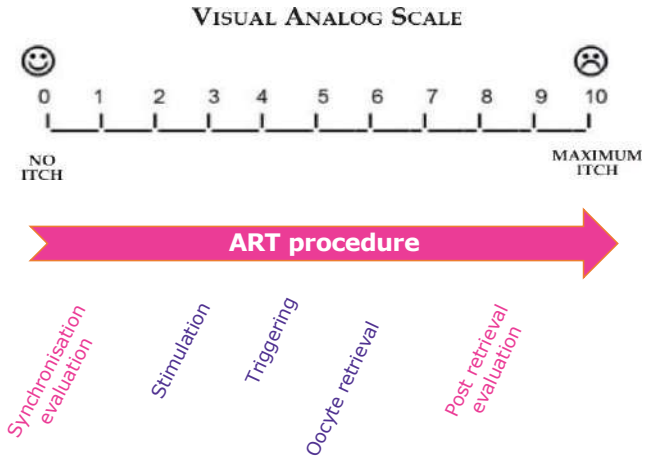
OSIS: Endometriosis; VAS: Visual analogue scale; OC: Oral contraceptive

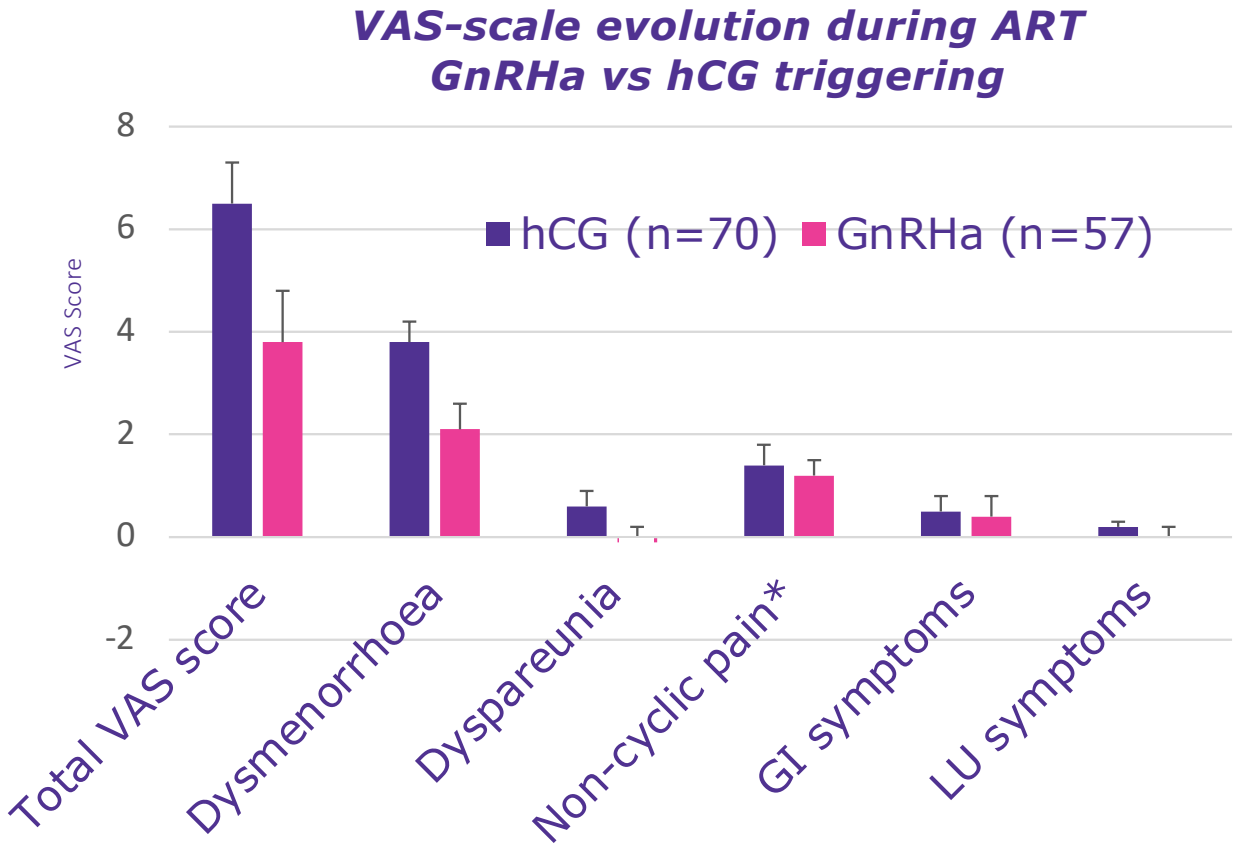
Santulli P et al. Fertil Steril. (2016)

Endometriosis and infertility: Optimized ART

GnRH agonist triggering : Pain management

Observational cohort:
- *57 GnRHa triggering*
- *70 hCG triggering*





GnRHa: Gonadotropin-releasing hormone agonist; hCG: Human chorionic gonadotropin; VAS: Visual analogue scale; GI: Gastrointestinal; LU: Lower urinary tract

Bourdon M, et al. Reprod Sci. (2017)

Endometriosis and infertility: Optimized ART

Protocols: GnRH agonist vs antagonis

Systematic review:
- *1 RCT + 7 observational studies*
- *2761 ART cycles*

ART live birth rates
Long agonist vs antagonist protocols

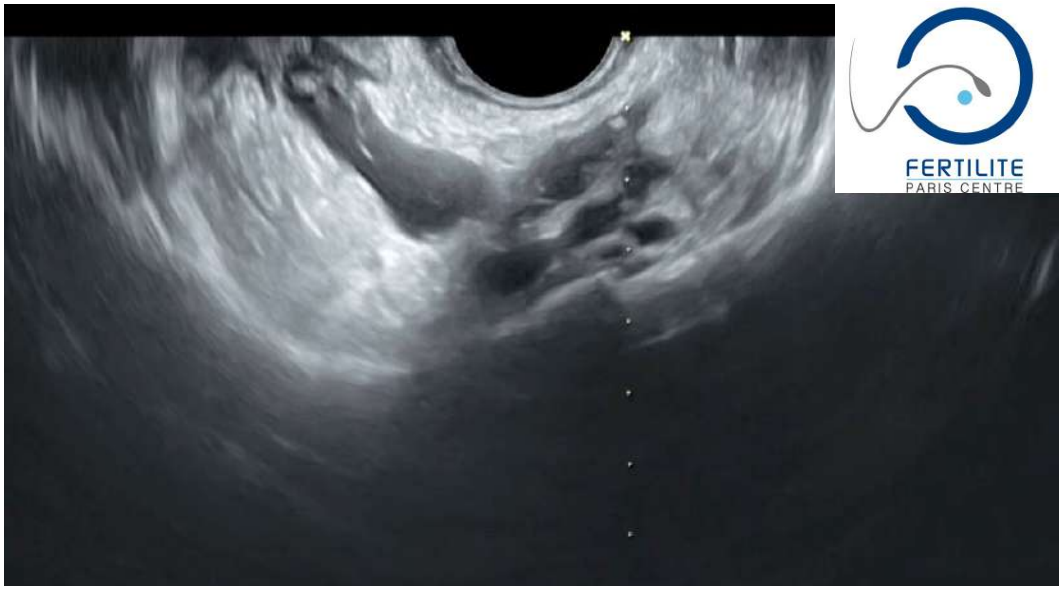
	Method of calculating LBR	GnRH agonist	GnRH antagonist	p-value
Zhao et al., 229 patients	LBR / ET cycle	24.6%	19.5%	NS
Drakopoulos et al., 386 patients	LBR / patient	Stage I/II : 42.8% Stage III/IV : 27.3%	Stage I/II : 26.7% Stage III/IV : 23.8%	NS
Kolanska et al., 218 patients	Cumulative LBR	21%	14%	NS

RCT: Randomised Controlled Trial; GnRH: Gonadotropin-releasing hormone;
LBR: Live birth rate; ET: Embryo transfer; NS: Non-significant

Kuan et al. Ther Adv Endocrinol Metab. (2023)

Large EndometriOMAs

Oocyte yield



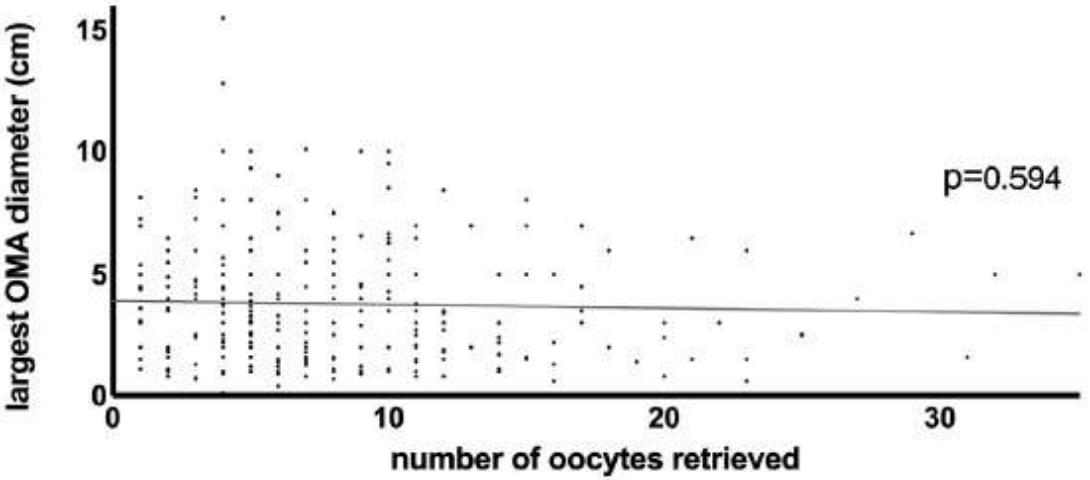
OMA
IVF-ICSI
N=326

RBMO

ELSEVIER

ARTICLE

Influence of endometrioma size on ART outcomes



Bourdon – Santulli et al RBMO (2022)

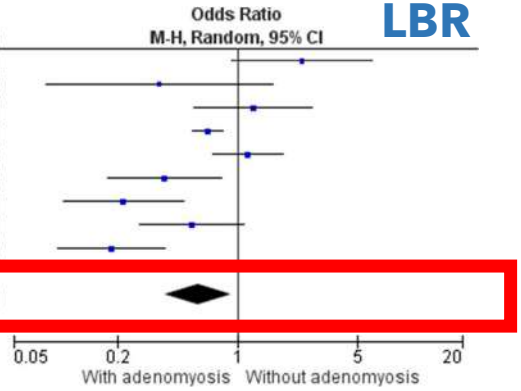
Adenomyosis and infertility : IVF - ICSI

Méta-analysis

LBR

Study or Subgroup	With adenomyosis Events	Total	Without adenomyosis Events	Total	Weight	Odds Ratio M-H, Random, 95% CI
Benaglia, 2014	17	49	9	49	9.5%	2.36 [0.93, 6.00]
Chiang, 1999	2	19	36	144	5.7%	0.35 [0.08, 1.60]
Costello, 2011	11	37	42	164	10.8%	1.23 [0.56, 2.70]
Hou, 2020	203	416	1620	2767	15.5%	0.67 [0.55, 0.83]
Neal, 2020	66	95	361	543	13.6%	1.15 [0.72, 1.84]
Sharma, 2019	8	64	128	466	11.0%	0.38 [0.17, 0.81]
Stanekova, 2018	16	34	110	137	10.7%	0.22 [0.10, 0.48]
Yan, 2014	19	77	29	77	11.6%	0.54 [0.27, 1.08]
Youm, 2011	11	48	186	302	11.5%	0.19 [0.09, 0.38]
Total (95% CI)		**839**		**4649**	**100.0%**	**0.59 [0.37, 0.92]**
Total events	353		2521			

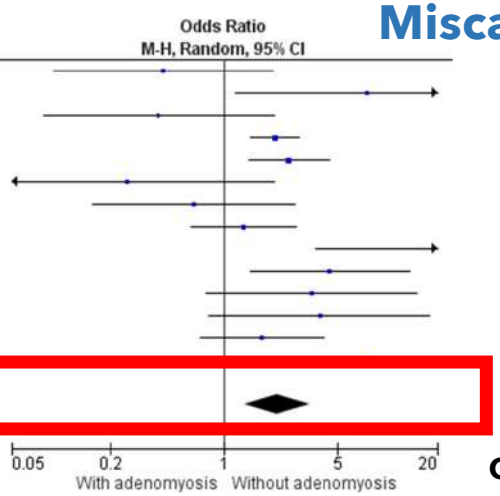
Heterogeneity: Tau² = 0.33; Chi² = 37.60, df = 8 (P < 0.00001); I² = 79%
Test for overall effect: Z = 2.31 (P = 0.02)



Miscarriages

Study or Subgroup	With adenomyosis Events	Total	Without adenomyosis Events	Total	Weight	Odds Ratio M-H, Random, 95% CI
Benaglia, 2014	4	21	5	14	5.4%	0.42 [0.09, 1.98]
Chiang, 1999	4	6	8	38	4.2%	7.50 [1.16, 48.56]
Costello, 2011	2	13	16	51	5.1%	0.40 [0.08, 2.01]
Hou, 2020	48	252	196	1893	13.1%	2.04 [1.44, 2.88]
Martinez Conejero, 2011	43	131	24	147	11.7%	2.50 [1.42, 4.43]
Mavrelos, 2017	1	21	21	129	3.7%	0.26 [0.03, 2.02]
Mijatovic, 2010	4	11	14	30	6.0%	0.65 [0.16, 2.71]
Neal, 2020	10	76	42	407	10.4%	1.32 [0.63, 2.75]
Salim, 2013	2	4	3	108	3.2%	35.00 [3.61, 339.20]
Sharma, 2019	6	15	21	161	7.6%	4.44 [1.44, 13.76]
Stanekova, 2018	3	19	6	116	5.7%	3.44 [0.78, 15.13]
Thalluri, 2012	3	9	9	78	5.4%	3.83 [0.81, 18.06]
Yan, 2014	19	38	17	46	9.4%	1.71 [0.71, 4.09]
Youm, 2011	12	23	29	224	9.1	
Total (95% CI)		**639**		**3442**	**100.0**	**2.11 [1.33, 3.33]**
Total events	161		411			

Heterogeneity: Tau² = 0.38; Chi² = 35.04, df = 13 (P = 0.0008); I² = 63%
Test for overall effect: Z = 3.19 (P = 0.001)



Cozzolino et al, Reprod Sci (2022)

Adenomyosis and infertility :

How ART

- When should we transfer : fresh or differed ?

- With or without down regulation ?

ART and differed embryo transfer : Adenomyosis

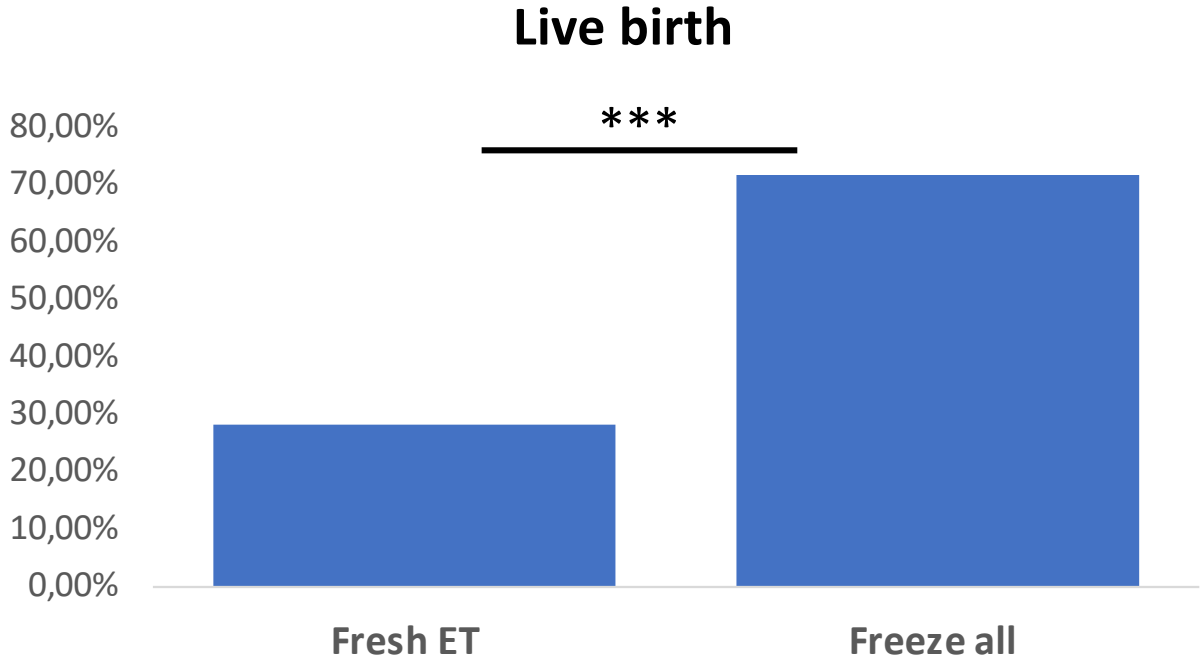
Variables associated with the presence of a live birth: multiple logistic regression analysis.

Parameters[a]	Odds ratio (95% CI)
Freeze-all vs. fresh embryo transfer strategy	1.80 (1.02–3.16)
AMH level	1.12 (0.99–3.56)
Having at least one transfer of a top-quality blastocyst	2.08 (1.22–3.56)
Age (y)	0.88 (0.81–0.95)
Estradiol level at triggering day	1.00 (0.99–1.01)
ICSI vs. IVF	0.88 (0.52–1.50)
Number of previous IVF/ICSI cycles	0.81 (0.64–1.04)
Year of retrieval	1.07 (0.84–1.36)

AMH = antimüllerian hormone; CI = confidence interval; ICSI = intracytoplasmic sperm injection; IVF = in vitro fertilization.

[a] Freeze-all vs. fresh embryo transfer strategy, the AMH level, having at least one transfer of a top-quality blastocyst, the women's age, the estradiol level at triggering day, the technique of fertilization (ICSI vs. IVF), and the number of previous IVF and ICSI cycles and the year of retrieval were variables included in the analysis.

Bourdon. "Freeze-all" strategy and adenomyosis. Fertil Steril 2023.



Bourdon M, et al. Fertil Steril 2023

Adenomyosis and ART :
GnRHa downregulation

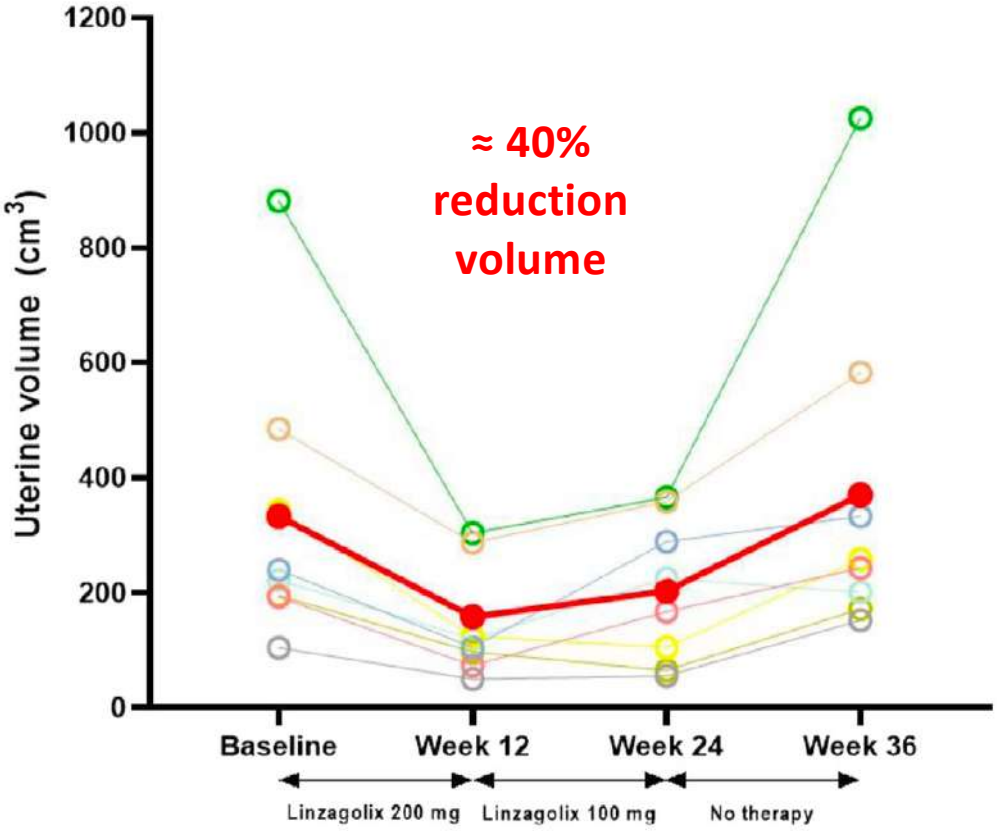
FERTILITE PARIS CENTRE

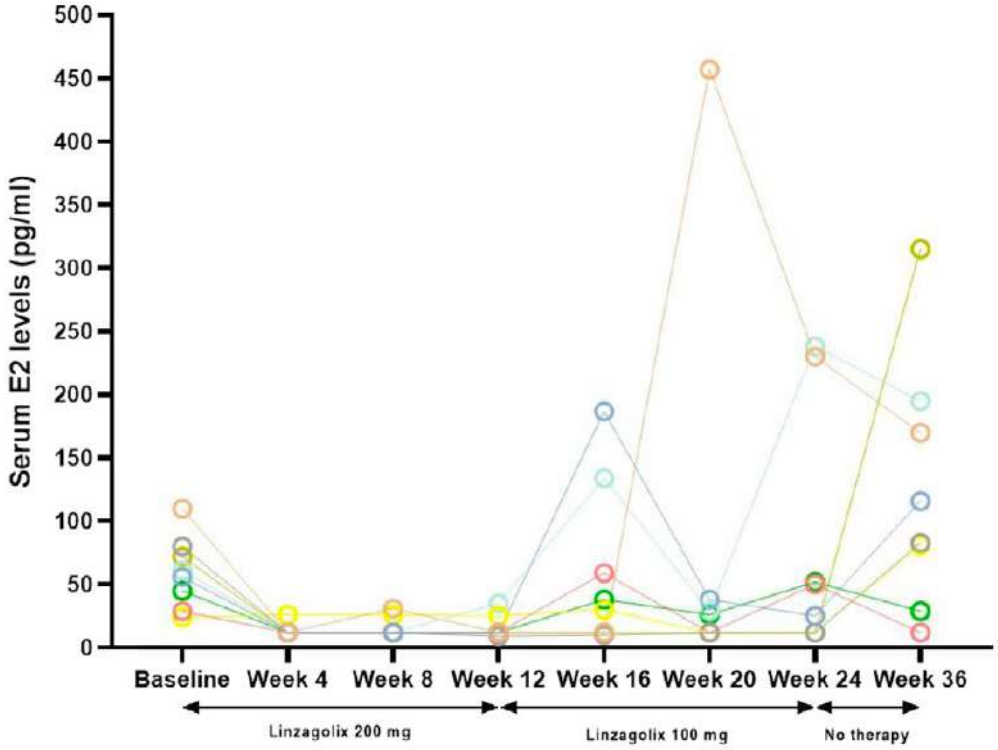
Effectiveness of prolonged downregulation with gonadotrophin-releasing hormone analogue (GnRHa) in women with adenomyosis undergoing IVF/ICSI

Author	Journal	Inclusion	Studies	Patients	Iplantation	CP	Miscarriage	LBR	
Cozzolino M	Reprod Sci 2022	--> 11/2020	3		≈	≈	≈	≈	Pretreatment with the use of long-term GnRHa could not be beneficial
Latif S	EJOG 2024	--> 03/2023	8 (all from china)	2422 women with adenomyosis	↑	↑	≈	≈	Higher CPR after preTTT (Fresh and frozen mixed)
Ge L	BMJ Open 2024	--> 10/2023	23	4872 cycles with adenomyosis 6289 cycles without adenomyosis	↑	↑	≈	↑	Higher LBR in FET with preTTT/ Fresh LBR in FET with preTTT adenomyosis = controls

Adenomyosis and uterine volume :

Oral antagonists

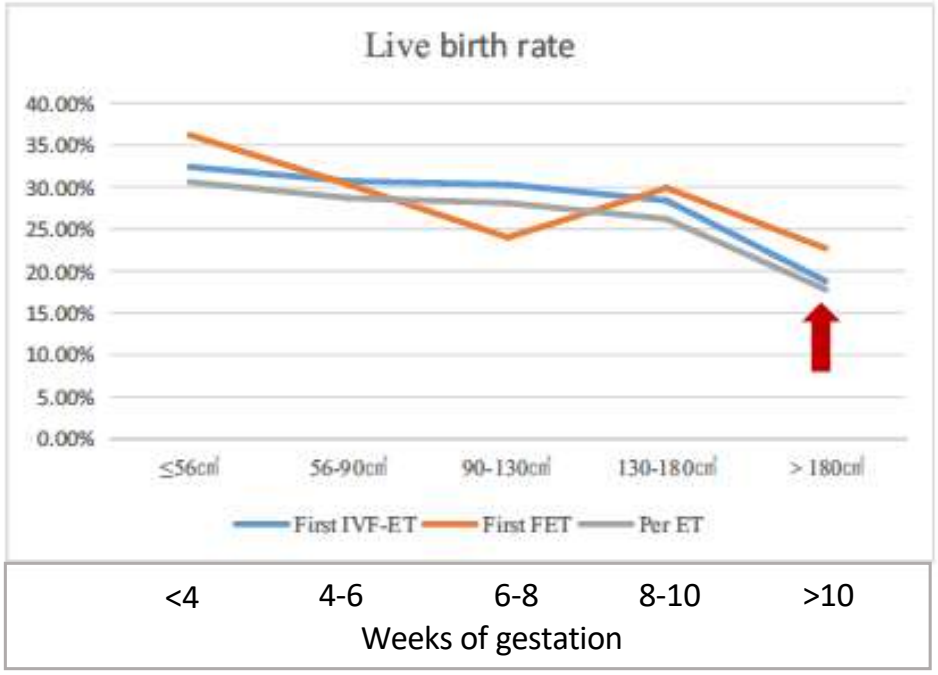


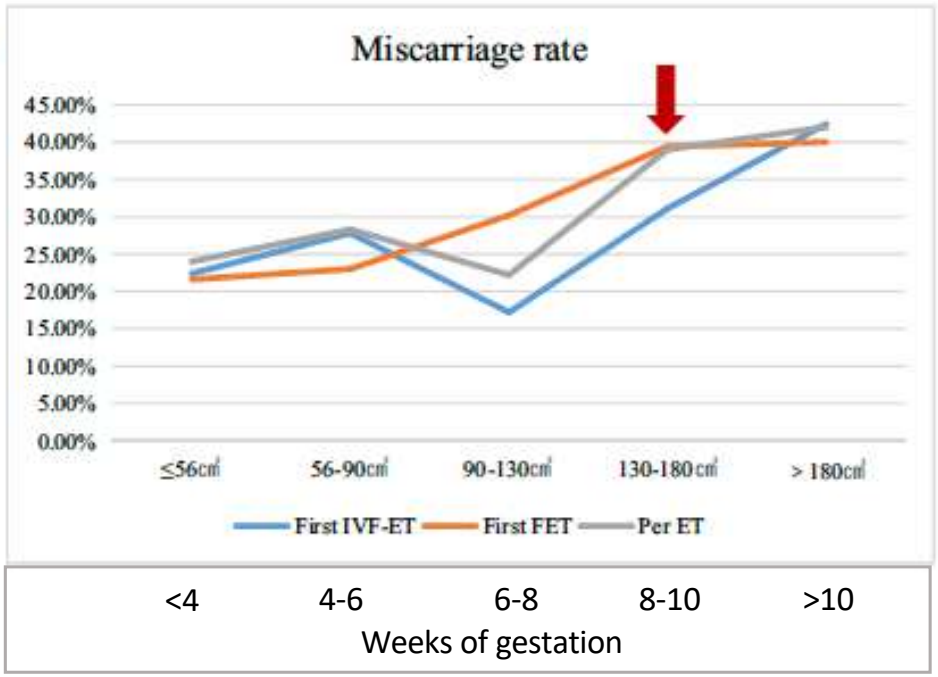


Donnez J et al. Fertil Steril 2023

Adenomyosis and ART :

Uterine Volume



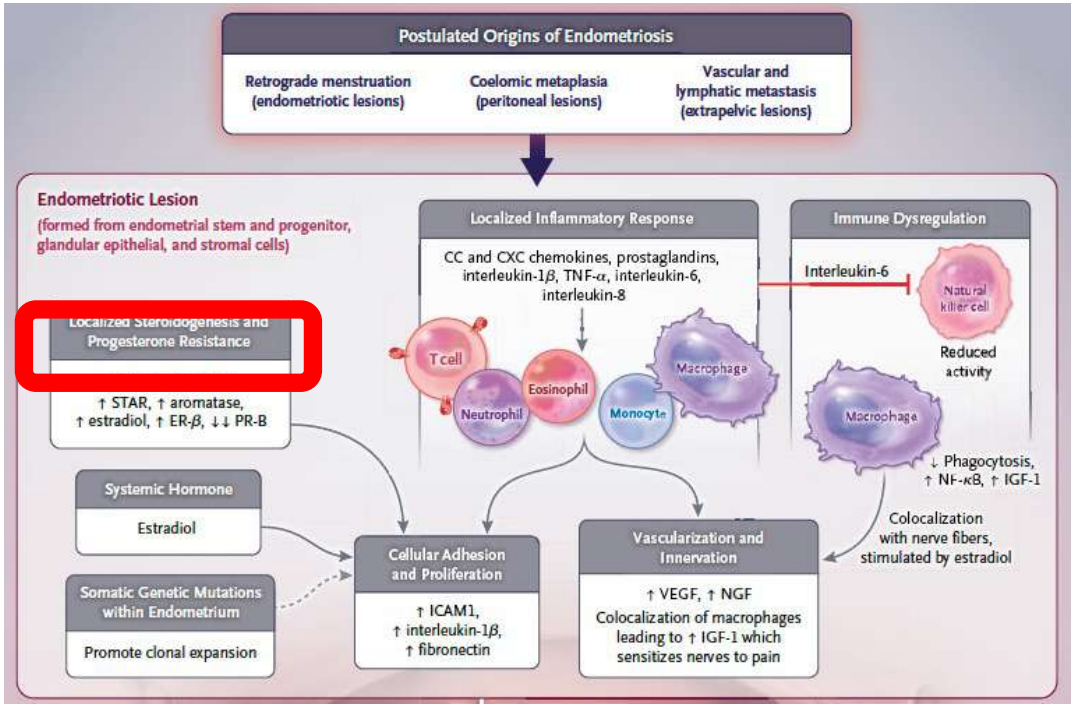


Us based Retro : 1155 patients
Fresh and subsequent Frozen : 1876 transfers
China

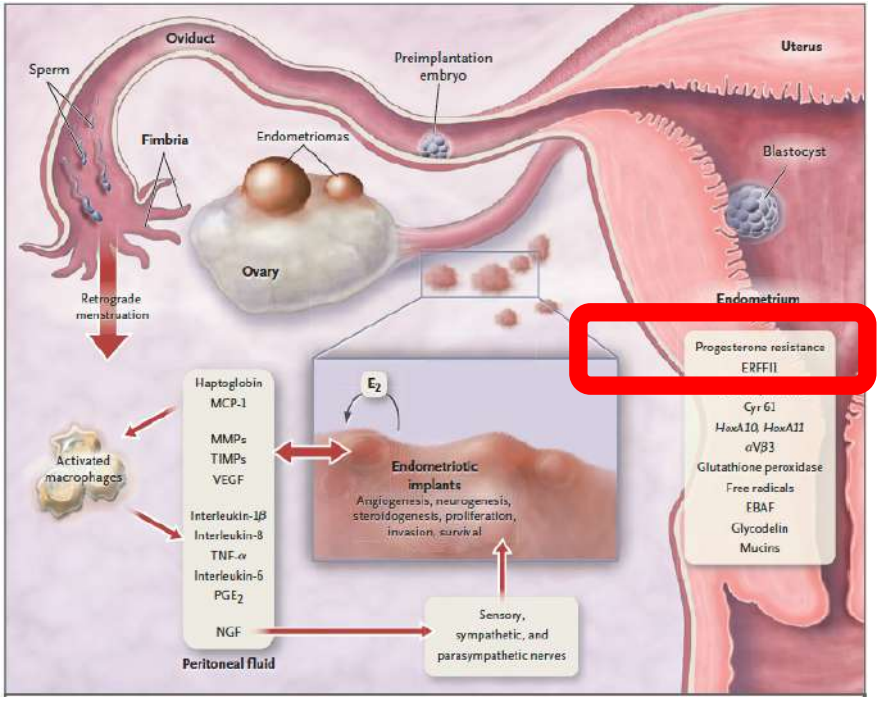
Zhang W. *et al.*, Reprod Sci (2023)

Endometriosis / Adenomyosis and infertility

Progesterone resistance



Zondervan KT *et al.* Nejm 2020

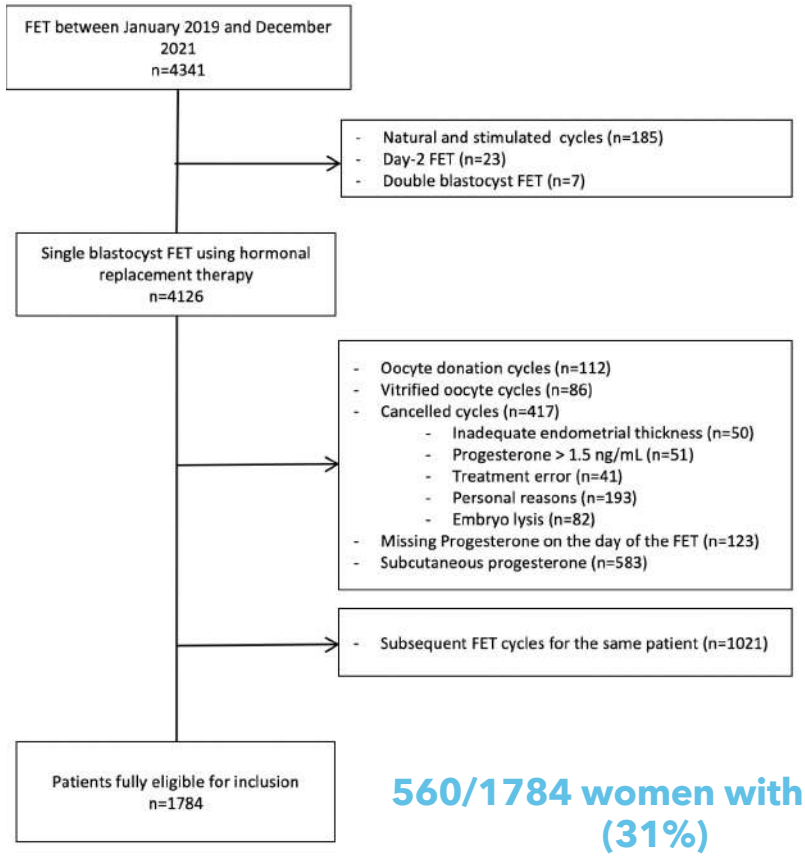


Giudice LC. Nejm 2010

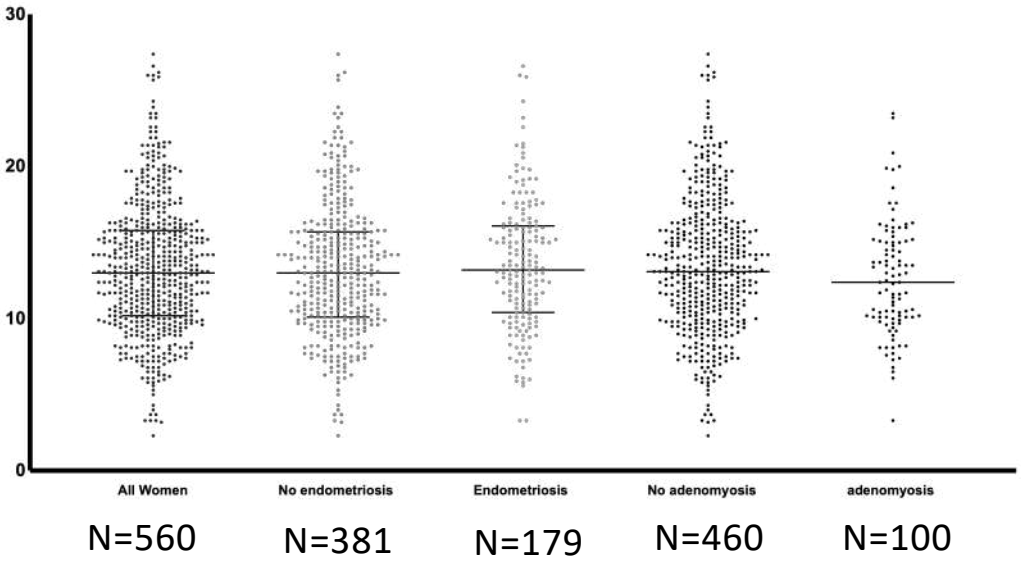
HRT - FET

Progesterone levels and endometriosis

FERTILITE PARIS CENTRE



560/1784 women with a LBR (31%)



In endometriosis women, the progesterone level the day of transfer, does not differ with unaffected patients, in case of achieving a LB after HRT-FET.

Bourdon, et al. Human Reprod 2024

Fertility and endometriosis-adenomyosis

FERTILITE
PARIS CENTRE

Endometriosis and adenomyosis related infertility: who matters the most ?

What are the available therapeutic options for infertility?

What conclusions can we draw ?

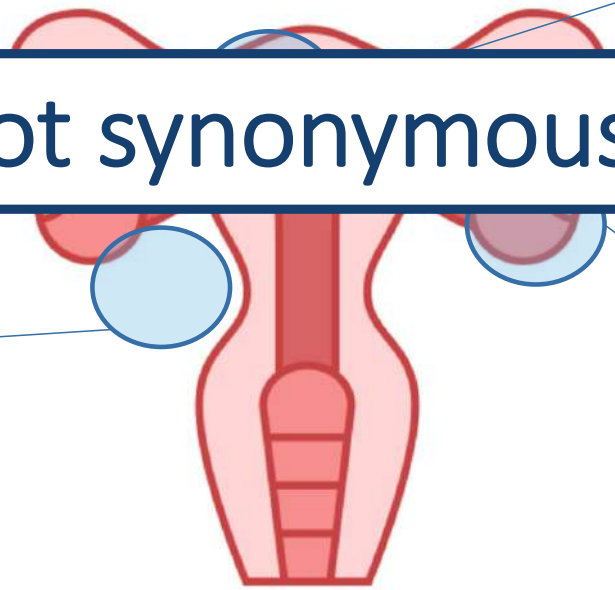
Endometriosis and infertility

Take Home Message

FERTILITE PARIS CENTRE

Uterus:

- Increased synthesis of prostaglandin & altered receptivity
- Production of estrogens *in situ* and resistance to progestogen



Endometriosis is not synonymous of infertility

Pelvic cavity:

- Proliferation of macrophages
- Phagocytic dysfunction
- Release of proinflammatory factors

Ovaries:

- Decreased ovarian response
- Altered oocyte quality?
- Iron overload (proinflammatory factors)

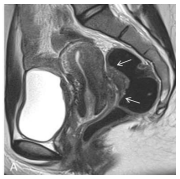
de Ziegler D *et al.* Lancet 2010

Endometriosis and implantation

Main messages

No major impact on the quality of the ovarian reserve

Altered quantity of the ovarian reserve (surgery +++)

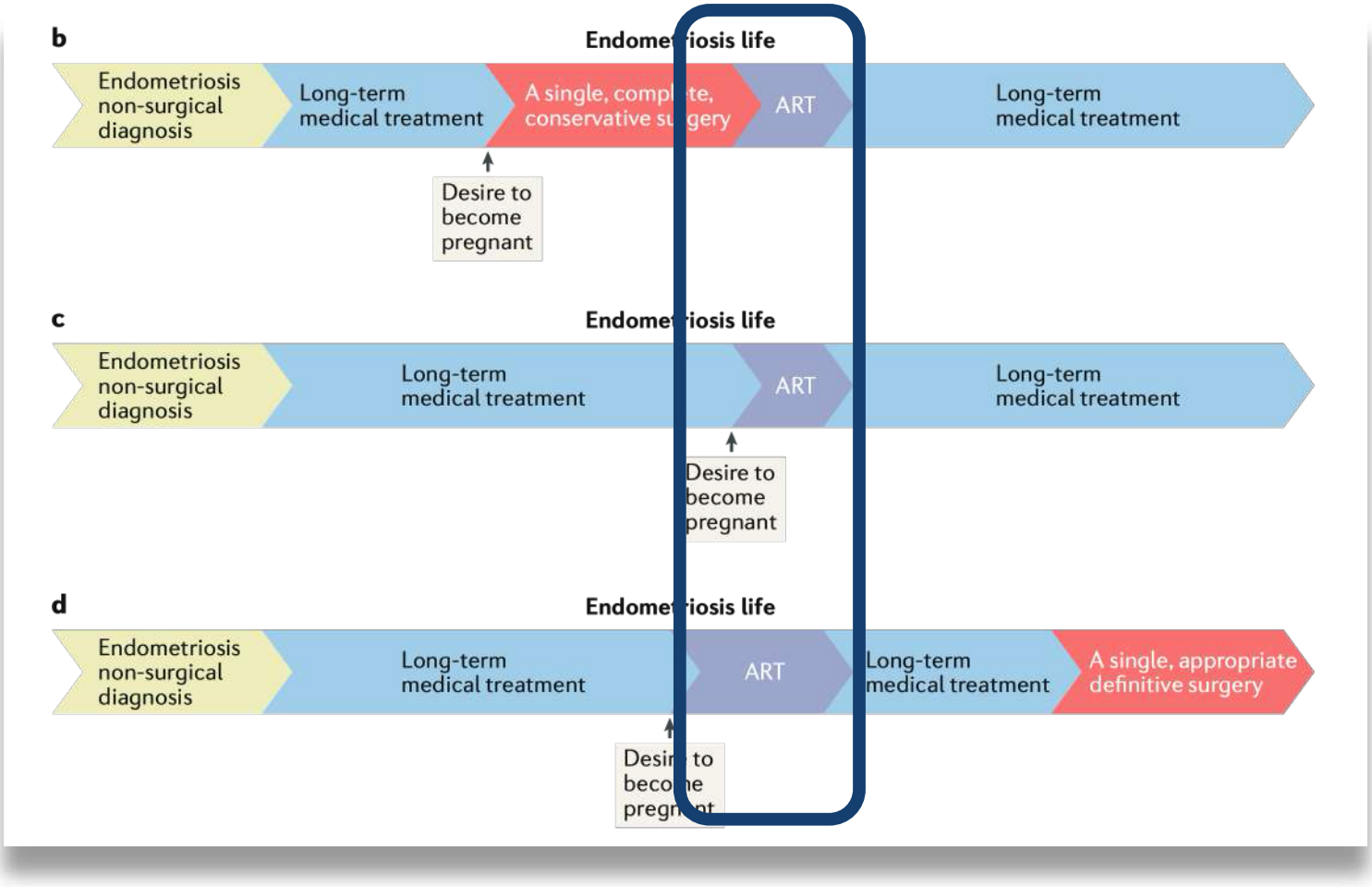


No major impact of endometriosis phenotype on ART outcomes

Adenomyosis decreases (+/-) the chances of LBR

Endometriosis : Primum non nocere

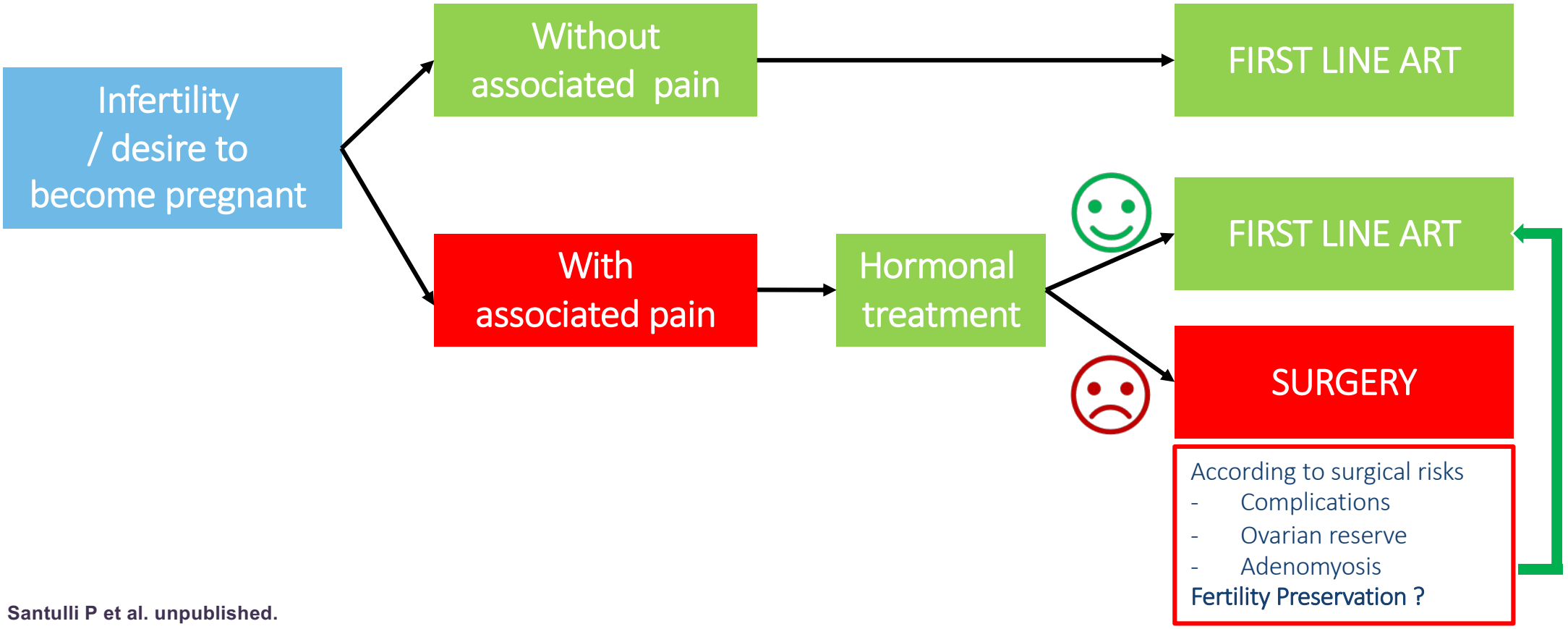
Evolution toward medical treatments



Chapron C, Marcellin L, Boorghese B, Santulli P Nat Rev Endocrinol (2019)

Take Home Message

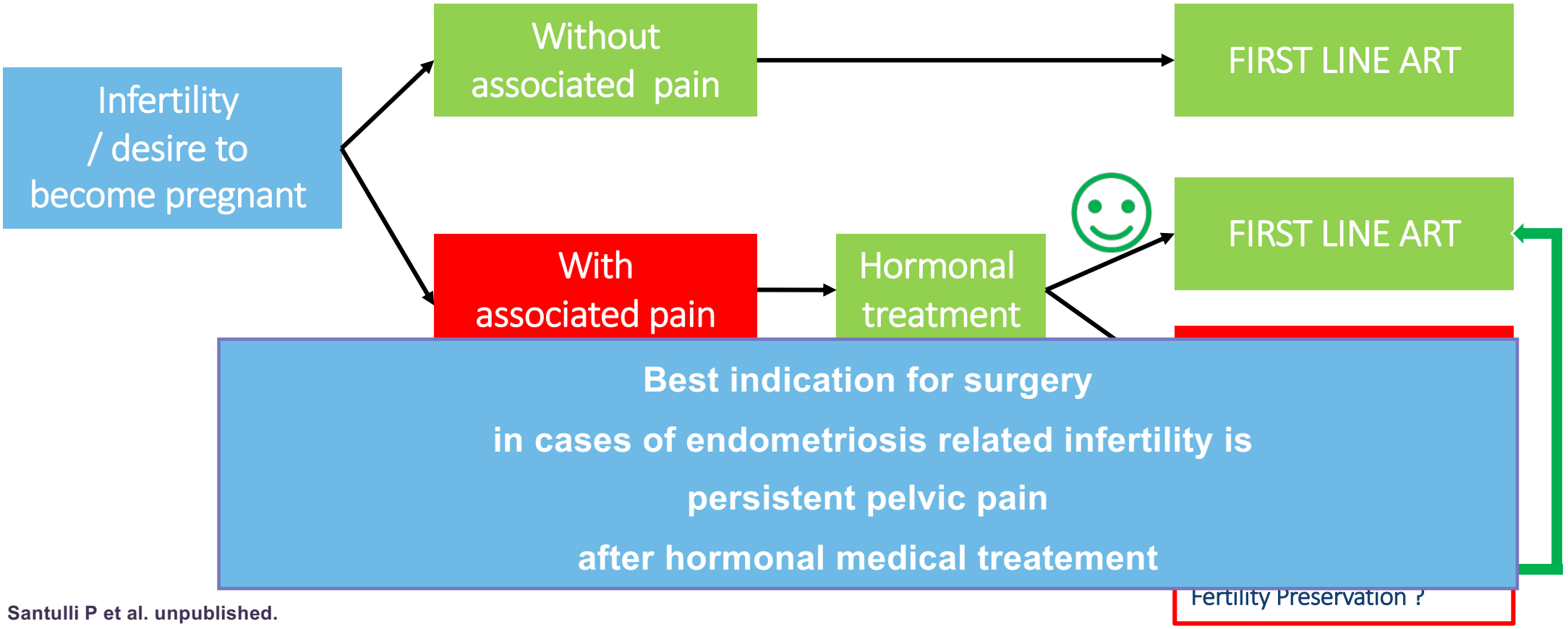
Modern treatment strategy



Santulli P et al. unpublished.

Take Home Message

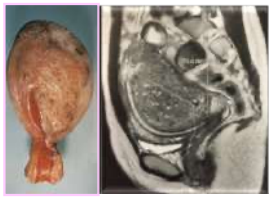
Modern treatment strategy



Santulli P et al. unpublished.

Adenomyosis and infertility :

Algorithm



INFERTILITY

Symptoms +
(pain – bleeding)

Symptoms -
(pain – bleeding)

Standard ART cycles

Freeze all with GnRHa 3-6 months

Implantation Failures
Recurrent Miscarriages

Medical treatment

Improvement

ART Cycle with Fertility preservation

After surgery

Conservative Surgery

Imaging work-up - PHENOTYPE
(even in young women)
New treatment needed

Santulli et al RBMO 2025

Gynecology, *Surgical unit:* C Chapron, L Marcellin, B Borghese, L Campin, A Gaudet Chardonnet, P Marzouk, G Parpex, G Darlet, F Llouquet, A Bourret, G Pierre, F Decuypere,

Gynecology, *Medical unit:* G Plu-Bureau, L Maitrot Mantelet, S Perol

Gynecology, *Reproductive ART and Infertility unit :* P Santulli, M Bourdon, C Maignien, L Melka, M sorel, J Cormier, L Fouque Gadol, A Gracia, F Kefelian , C Richaud, S koutchinsky, V Gayet, S Douard, A Fubini, A Bititi, J Gonnot, C Cervantes, E Laviron, A Houliat, E Serve, E Batti, A Quimerch

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