





8TH CONGRESS OF THE SOCIETY OF ENDOMETRIOSIS AND UTERINE DISORDERS



Endometriosis associated Pain

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Fellowship of Advanced Laparoscopy(Endometriosis)

Avicenna Endometriosis Clinic





The Impact of Laparoscopic Surgery for Endometriosis on Patients Symptoms

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Background

Endometriosis is a chronic benign gynecological disease that unfortunately impairs the quality of life of affected women. Laparoscopy is the most common surgical procedure for diagnosing and treating endometriosis as that relieves the associated painful symptoms in most cases. However, it does not make it clear how long the therapeutic benefits would last. The aim of this study was to evaluate pain relief after laparoscopic removal of endometriosis over a 2-year period of postoperative follow-up.

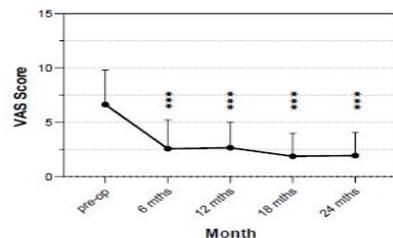
Methods

A population-based registry study included one hundred and twenty-two symptomatic women with endometriosis who underwent laparoscopic surgery for endometriosis between 2019–2021. Prior to surgery, a visual analog scale was used to assess pain intensity, as well as after 6, 12, 18, and 24 months after surgery.

Results

The mean visual analog scale score for dysmenorrhea decreased from 6.6 ± 3.1 at baseline to 2.5 ± 2.6 at 6 month (p <0.001), 2.6 ± 2.3 (p <0.001) at 12 month, 1.8 ± 2.1 (p <0.001) at 18 month, and 1.9 ± 2.1 (p <0.001) at 24-month post operation.

Figure 1. Dysmenorrhea visual analog scale (VAS) scores significantly improved after surgery.



Before surgery, mean visual analog scale score for dyspareunia was 3.4 ± 3.7, but decreased to 1.9 ± 2.4 after 6-month (p <0.01), 1.5 ± 2.1 after 12-month (p <0.01), 1.3 ± 2.02 after 18-month (p <0.001), and 2.1 ± 2.6 after 24-month (p <0.005) post surgery. The mean visual analog scale score for noncyclic pelvic pain showed reductions after 6 months (2.2 ± 3.7 to 1.5 ± 2.3), although there was a recurrence.

Figure 2. Dyspareunia visual analog scale (VAS) scores significantly improved after surgery.

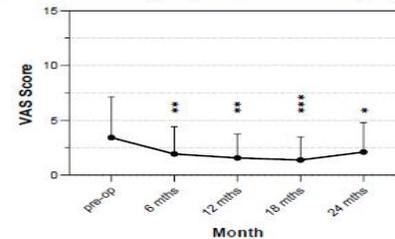


Table 1. Summary of women's symptoms before and after laparoscopic surgery for endometriosis.

	pre-op	6 mths	12 mths	18 mths	24 mths
Quantitative evolution of symptoms (VAS) (Mean ± SD)					
Dysmenorrhea	6.6±3.1 (of 58)	2.5±2.6** (of 48)	2.6±2.3*** (of 46)	1.8±2.1*** (of 47)	1.9±2.1*** (of 47)
Dyspareunia	3.4±3.7 (of 58)	1.9±2.4** (of 46)	1.5±2.1** (of 45)	1.3±2.02** (of 45)	2.1±2.6* (of 46)
Non-cyclic pain	2.2±3.7 (of 58)	1.5±2.3 (of 48)	2.6±2.8 (of 45)	1.9±2.9 (of 45)	2.2±2.8 (of 45)

* p<0.05, **p<0.01, ***p<0.001

Conclusion

In many women with preoperative symptoms, laparoscopic excision of endometriosis significantly improves dysmenorrhea and dyspareunia for up to 2 years after surgery. Therefore, women with endometriosis who have severe pain complaints may benefit from conservative laparoscopic surgery.

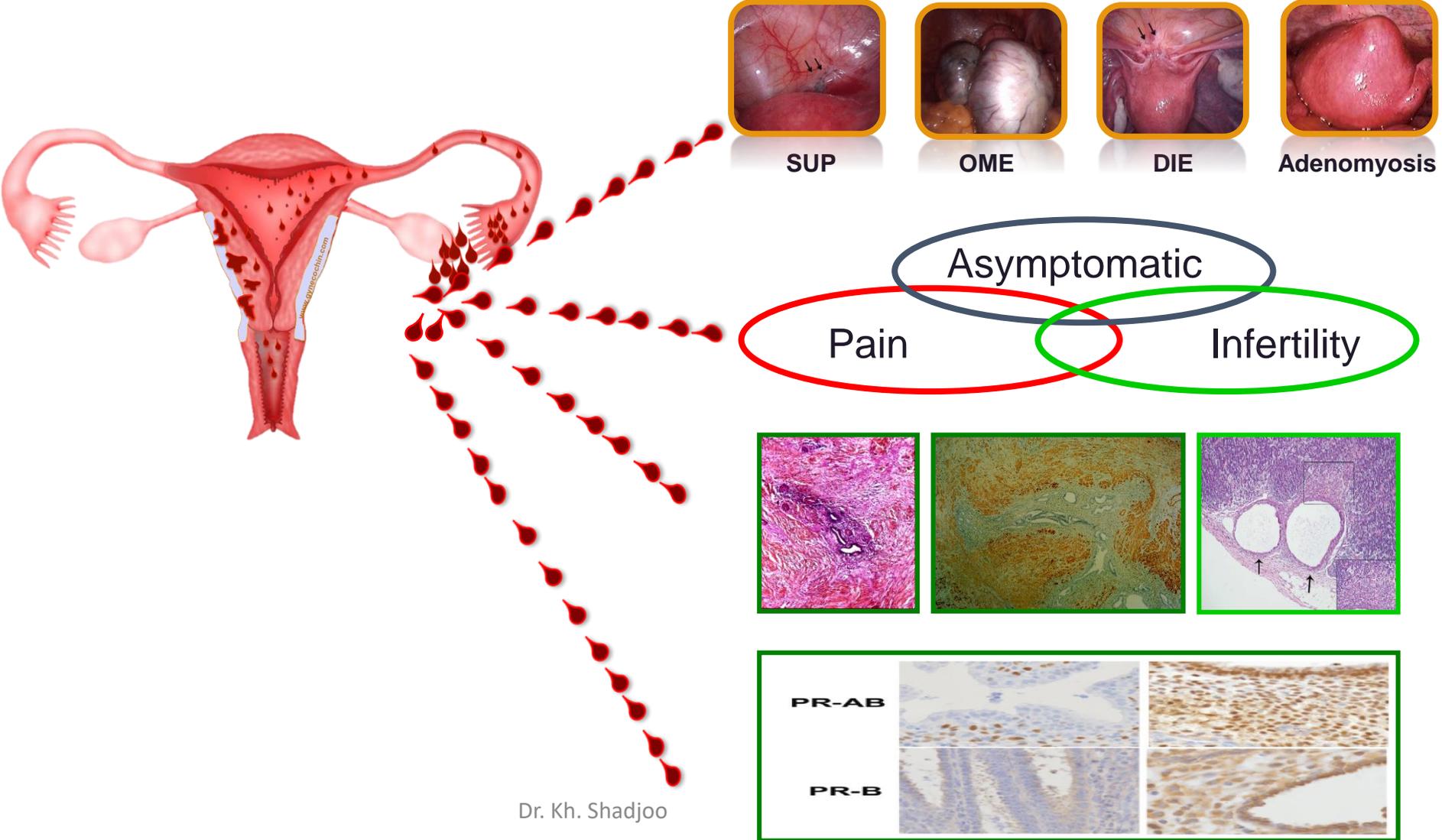
References

- Aurelie Comptour, Pauline Chauvet, Michel Canis, Anne-Sophie Gremeau, Jean-Luc Pouly, Benoit Rabisshong, Bruno Pereira, Nicolas Bourdel. Patient quality of life and symptoms following surgical treatment for endometriosis. The Journal of Minimally Invasive Gynecology (2019).
- Busacca M, Bianchi S, Agnoli B, Candiani M, Calia C, De Marnis S, Vignali M. Follow-up of laparoscopic treatment of stage III-IV endometriosis. J Am Assoc Gynecol Laparosc. 1999 Feb;6(1):55-8. doi: 10.1016/s1074-3804(99)50041-3. PMID: 9971852.

- ENDOMETRIOSIS & PAIN

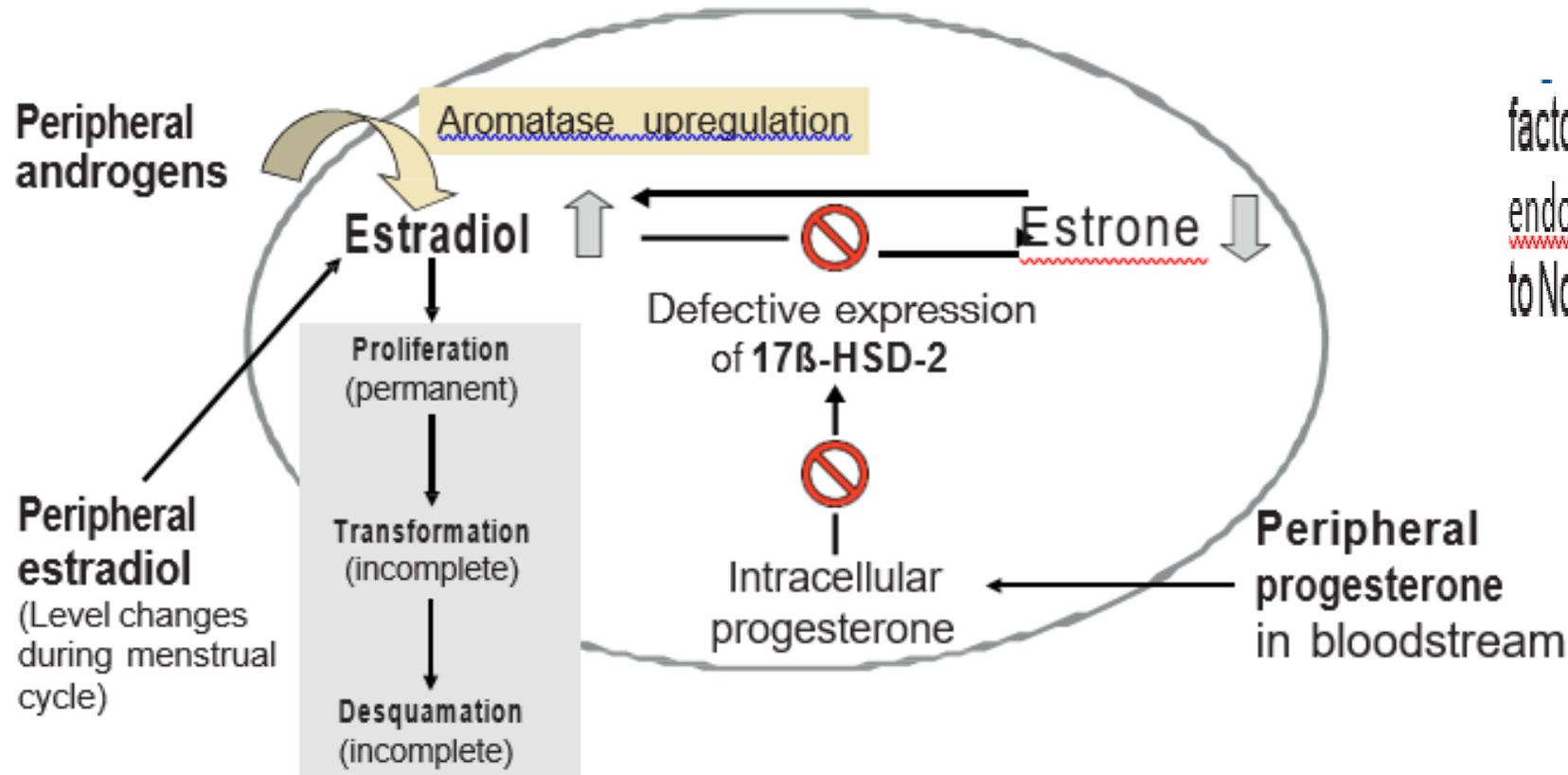
Endometriosis

Heterogeneous disease



Dr. Kh. Shadjoo

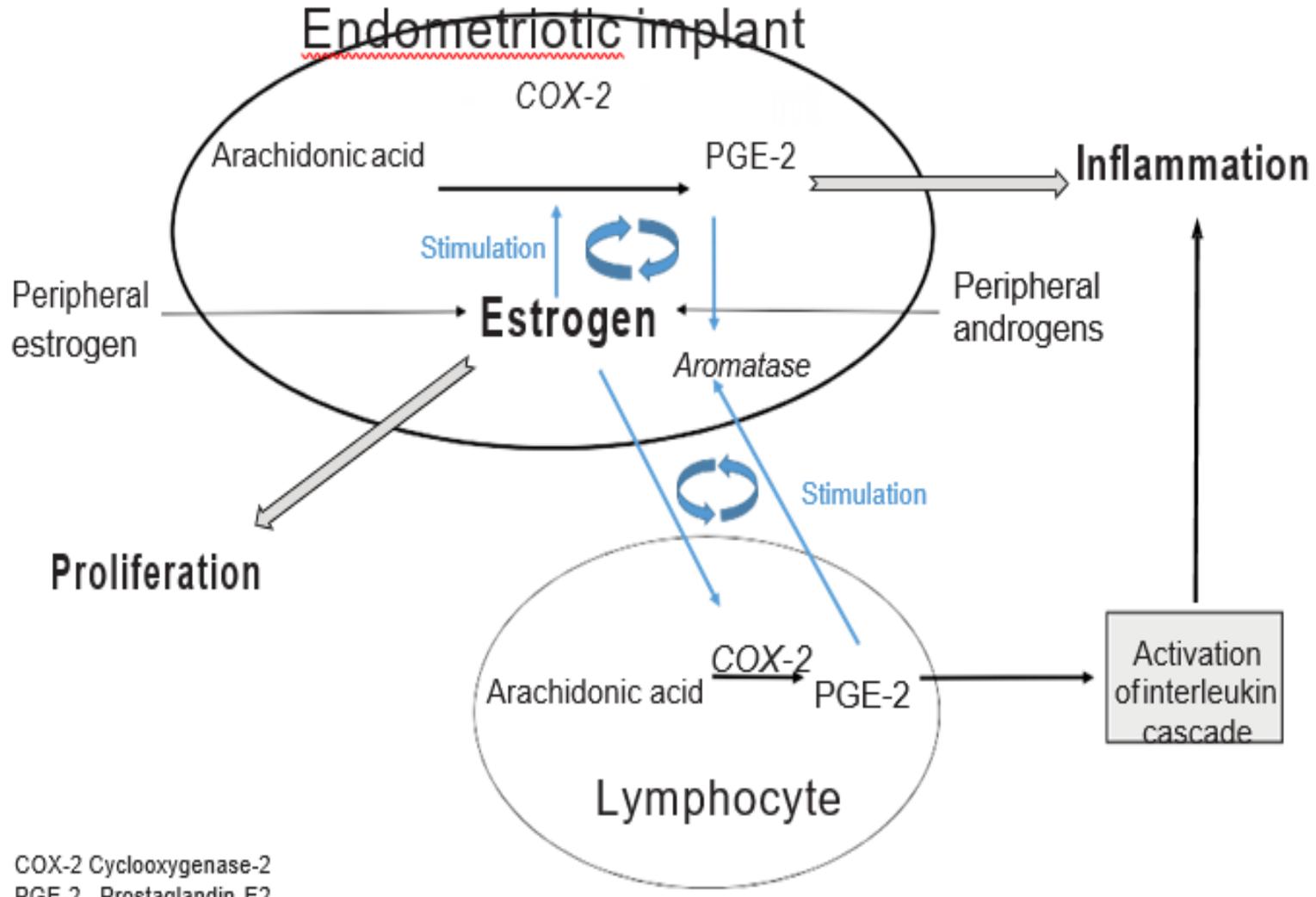
Endometriotic implant



factors involved in the pathogenesis of endometriotic lesions (modified according to Noble LS, et al. (1996).²²

⊘ = Inhibition of the metabolic pathway

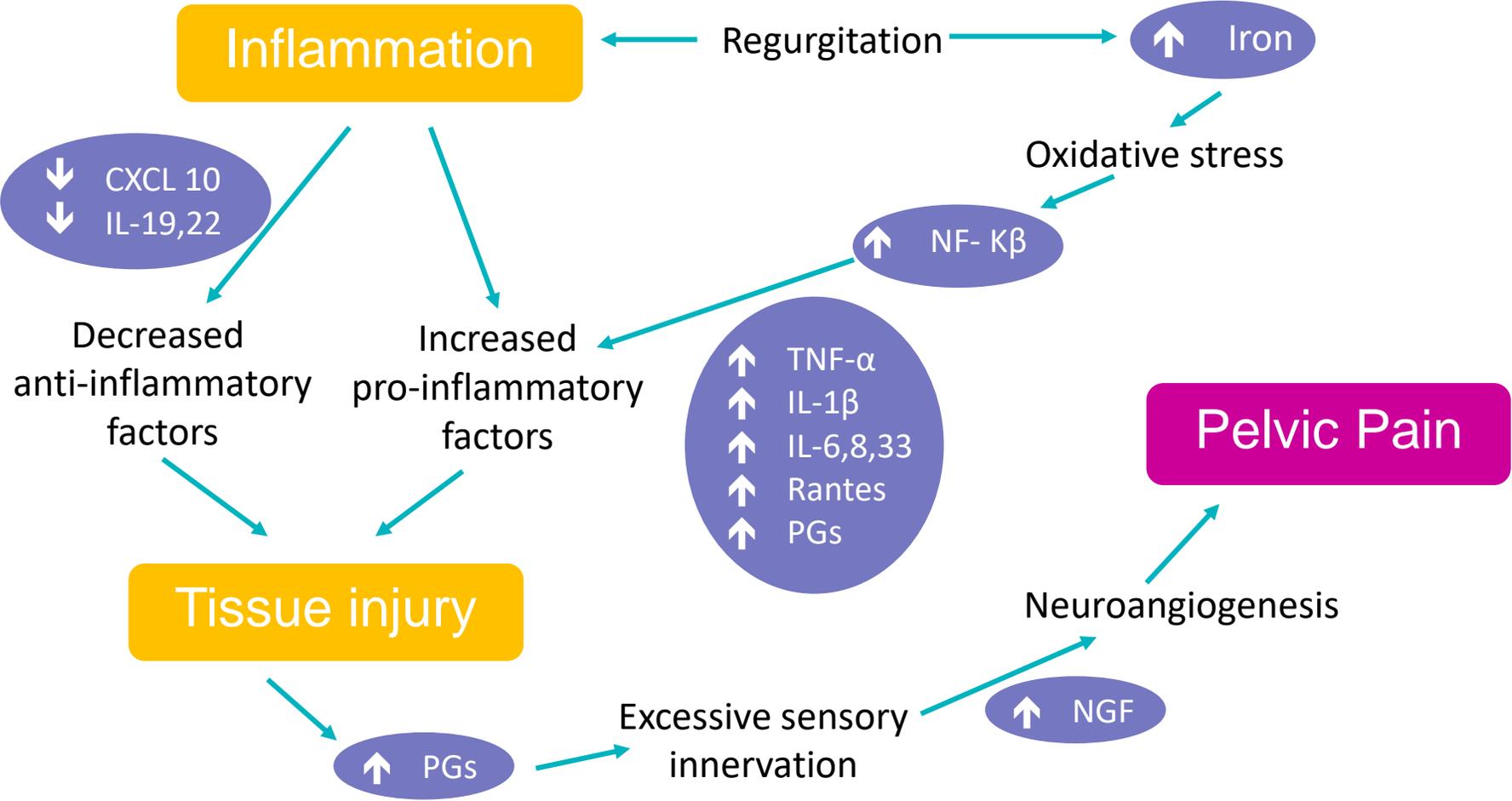
17 β -HSD-2 (17 β -hydroxysteroid dehydrogenase type 2)



the impact of prostaglandins and oestrogen on the inflammatory reaction in endometriosis tissue.

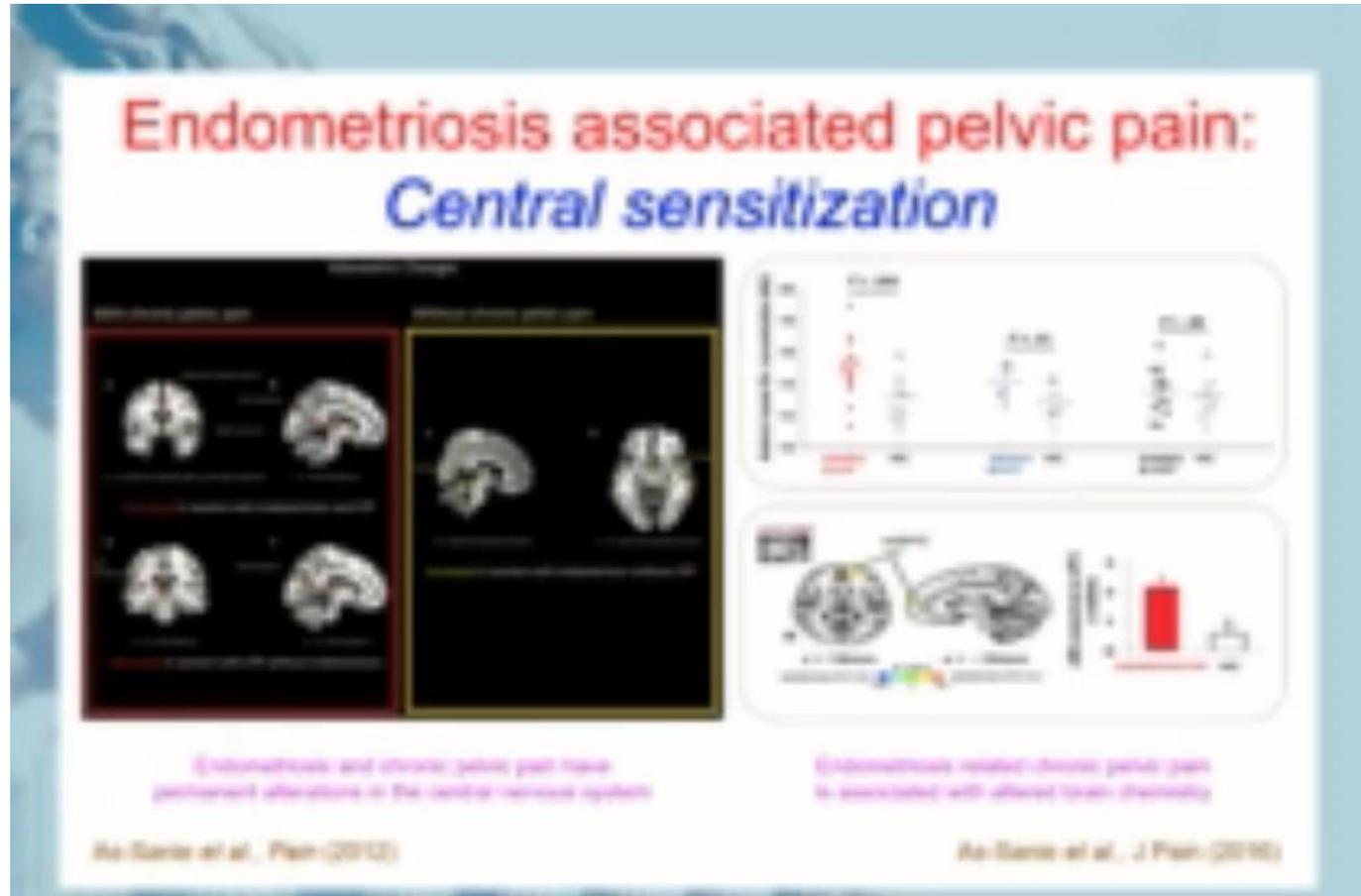
Inflammatory response pathway

Tissue injury and chronic pain

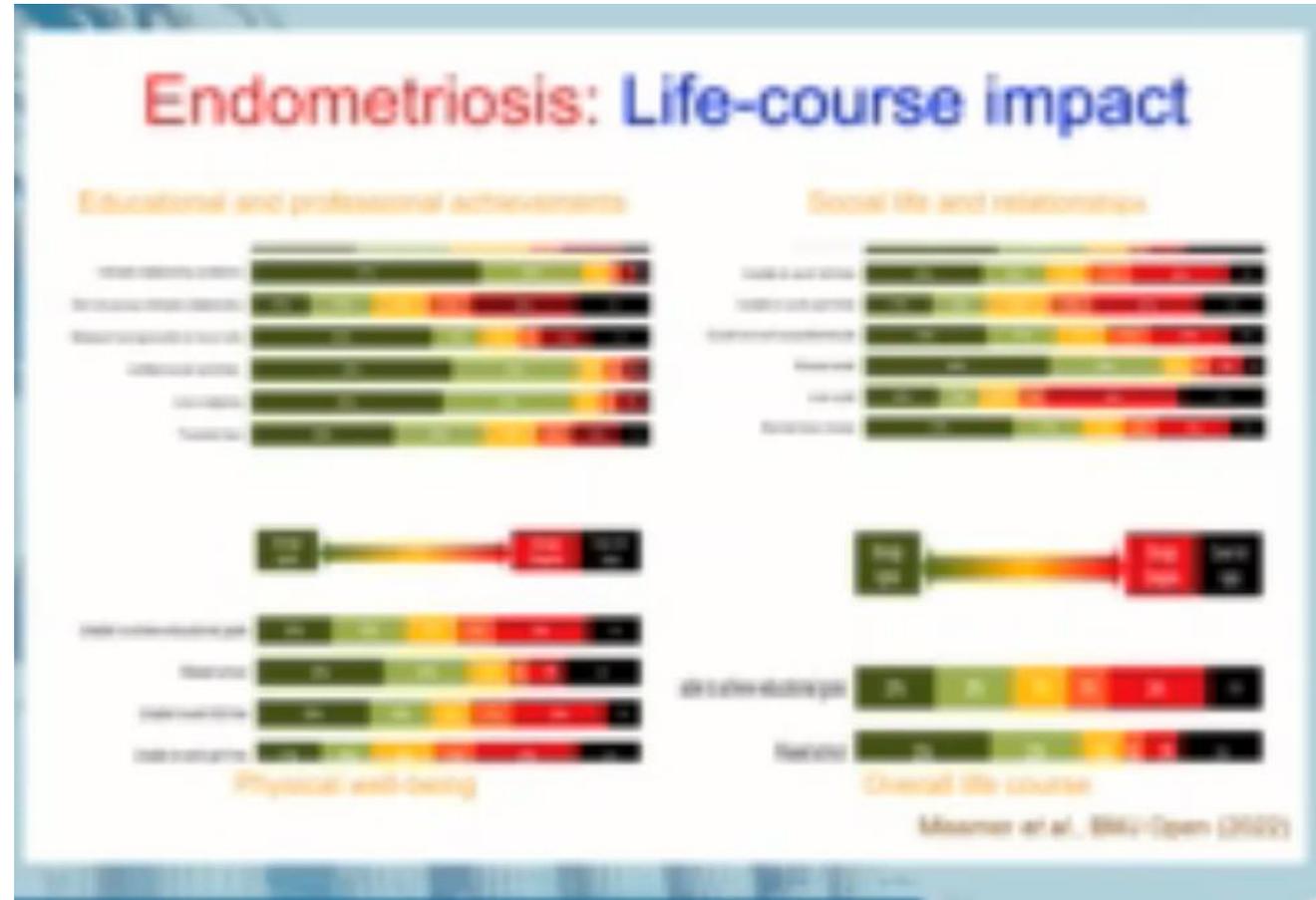


IL, interleukin; TNF, tumor necrosis factor; PG, prostaglandin; CXCL, chemokine; NGF, nerve growth factor; NF-κβ, nuclear factor kappa beta.

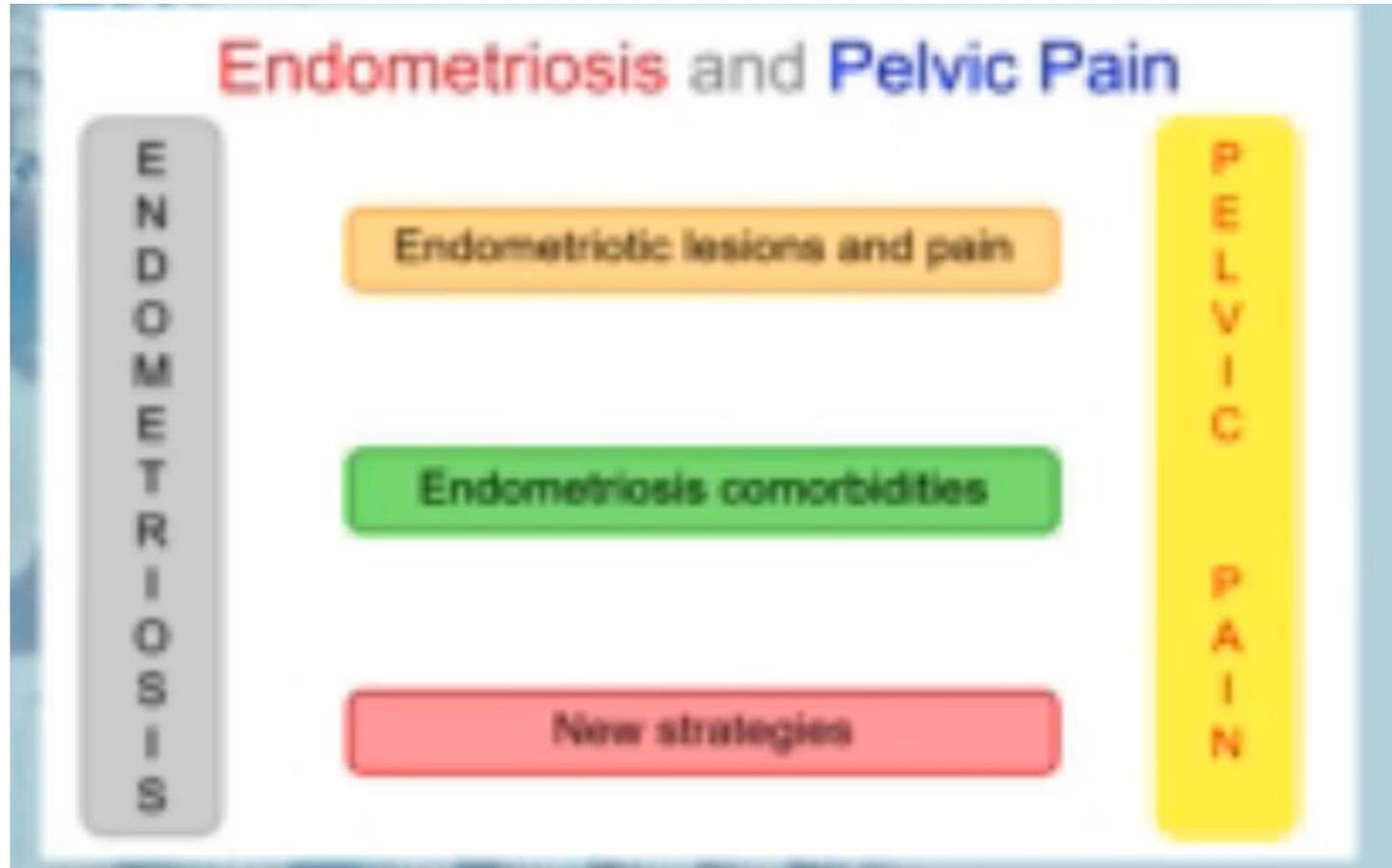
Central Sensitization



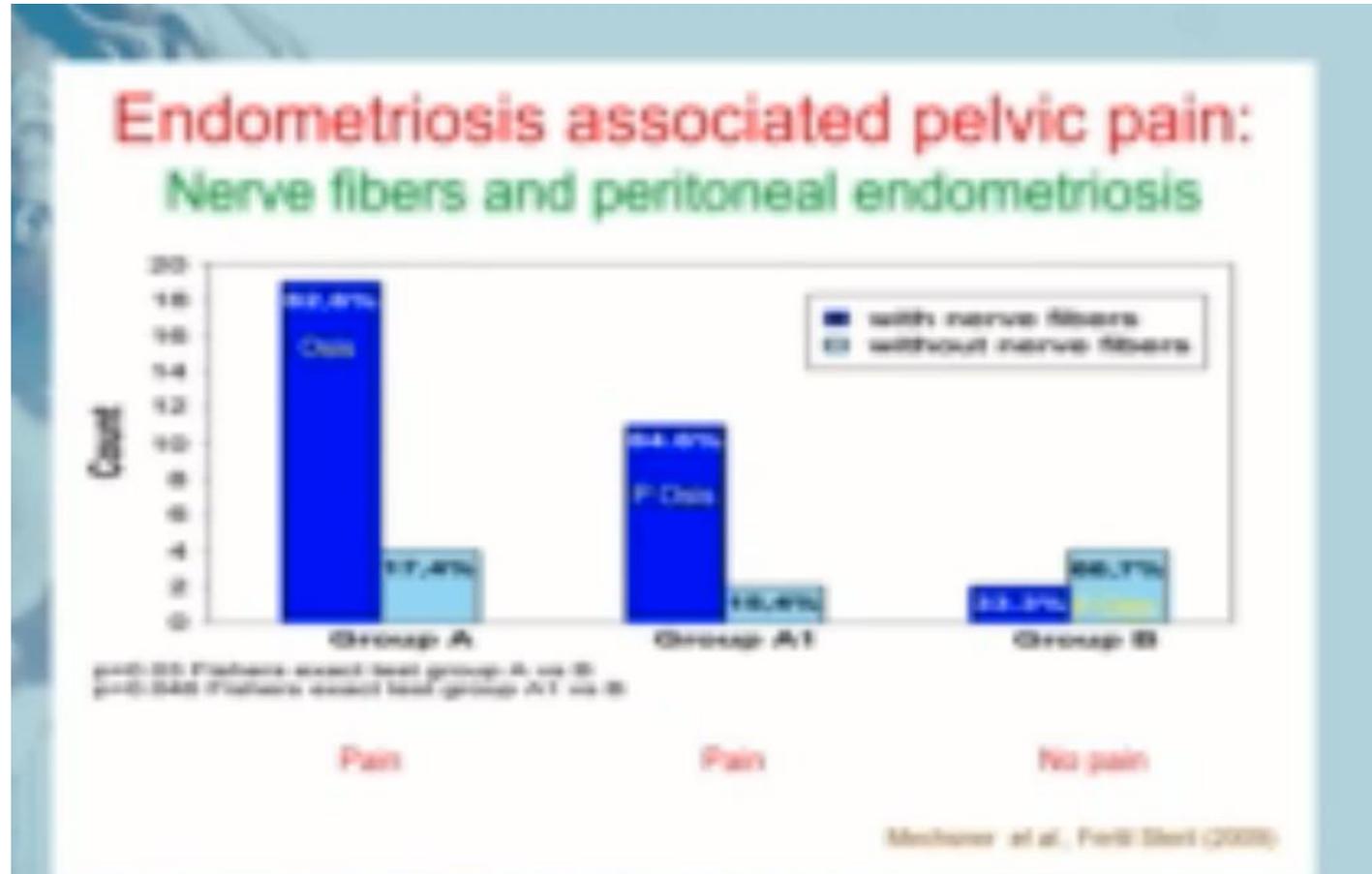
Life –course impact



Pain-comorbidity



Nerve Fibers- superficial Endometriosis



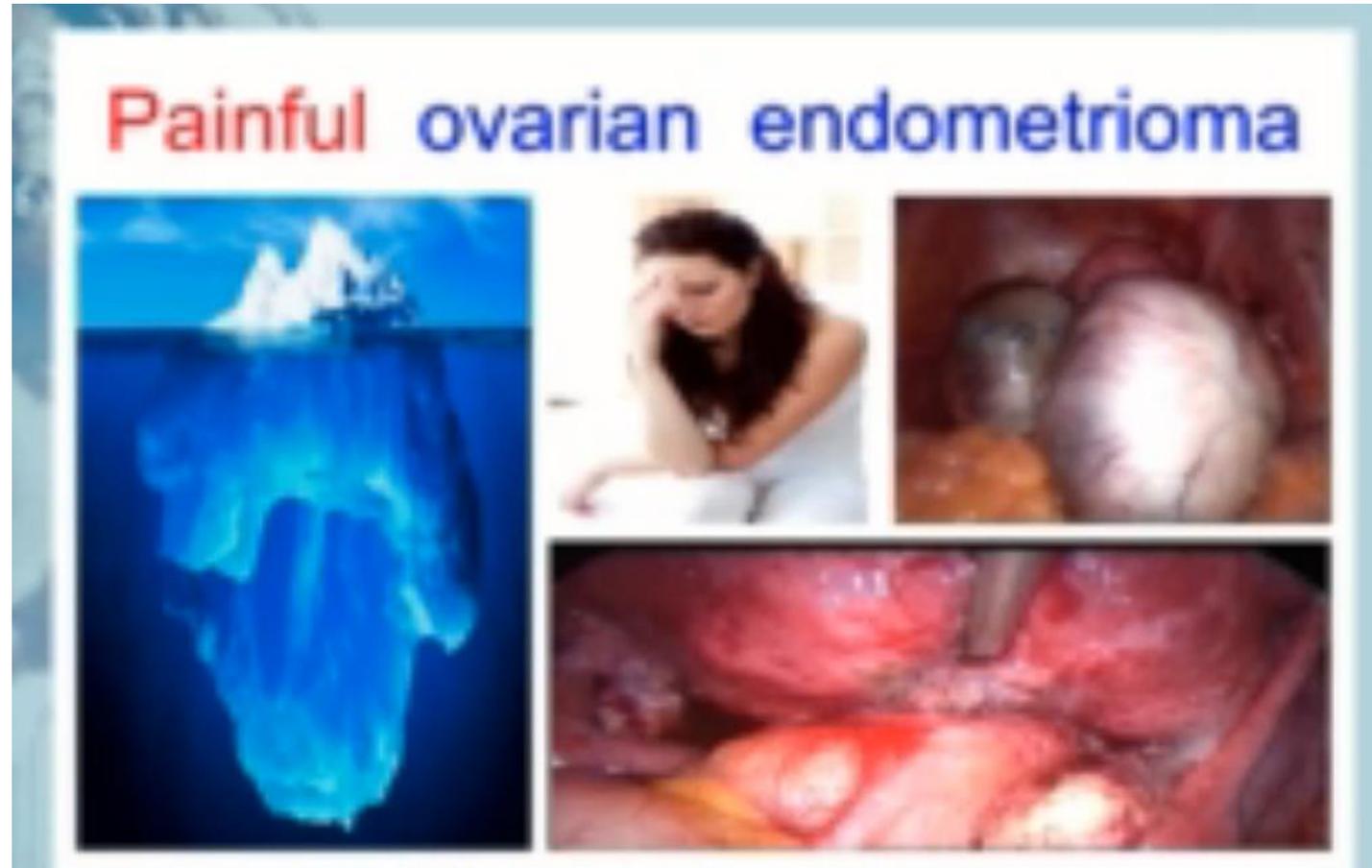
OMA: Determinant for painful symptoms severity (Multiple logistic regression analysis)

Dysmenorrhoea	Main DRE lesion: intestine ^a	5.2 (2.7–10.3)
	Bilateral endometrioma	2.8 (1.4–5.6)
Deep dyspareunia	Main DRE lesion: UFSL ^a	2.0 (1.1–3.5)
	Left-sided endometrioma	2.1 (1.1–4.3)
Non-cyclic chronic pelvic pain	Left-sided endometrioma	3.5 (1.7–7.1)
	Previous surgeries for endometriosis	2.2 (1.1–4.5)
Gastrointestinal symptoms	Main DRE lesion: intestine ^a	7.1 (3.3–15.3)
LU symptoms	Main DRE lesion: vagina ^a	13.4 (3.2–55.8)
	Hematuria	10.0 (1.3–77.6)

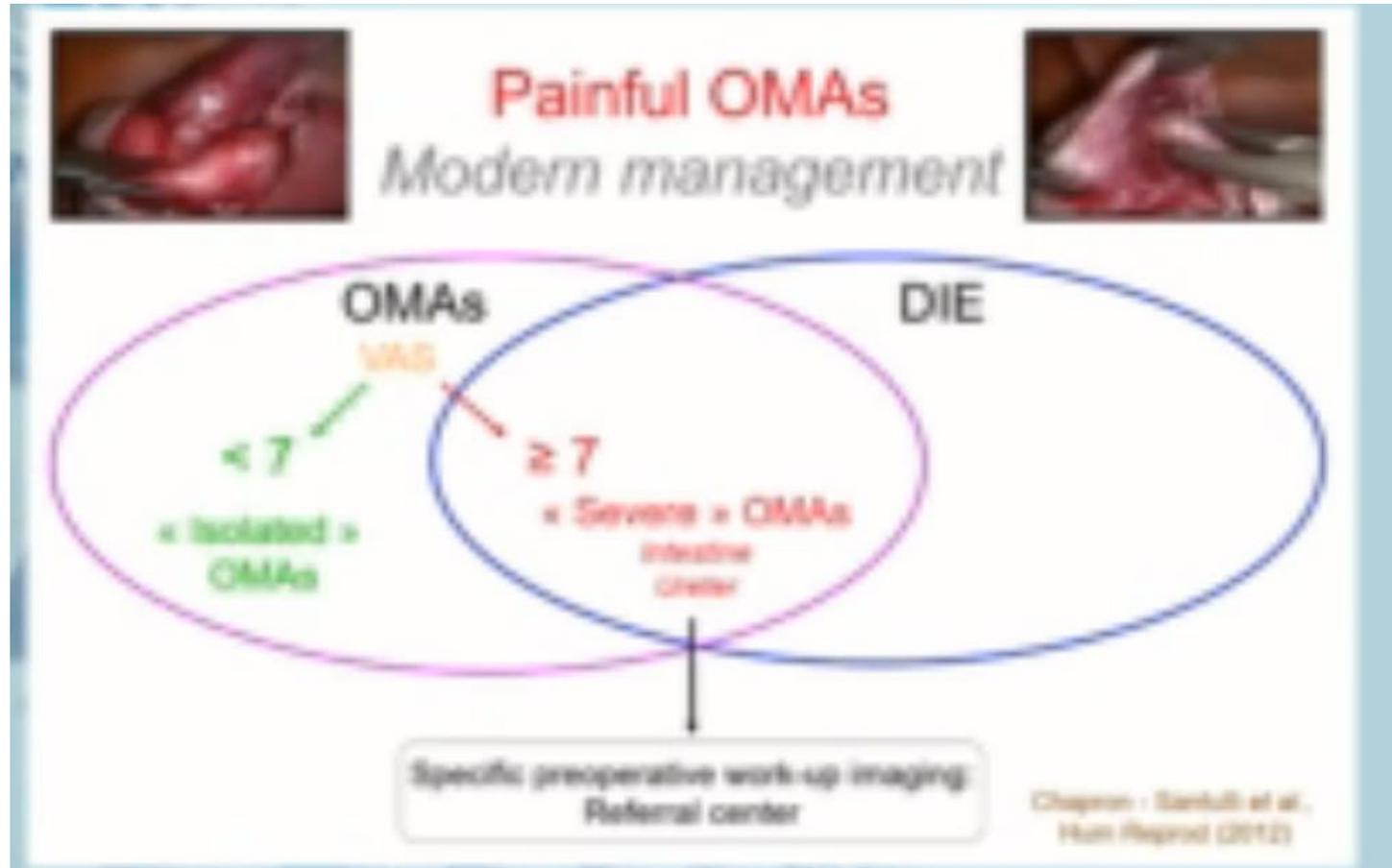
Deeply infiltrating endometriosis (n = 500 patients).
Results according to the presence of OMA

Main DIE lesion	R	OR	95% CI	p - value
USL	0.118	-	-	NS
Vagina	5.96	1.70	1.1 - 2.6	.014
Bladder	0.137	-	-	NS
Intestine	34.5	3.59	2.3 - 5.6	< 0.0001
Ureter	8.6	3.91	1.4 - 10.1	.003

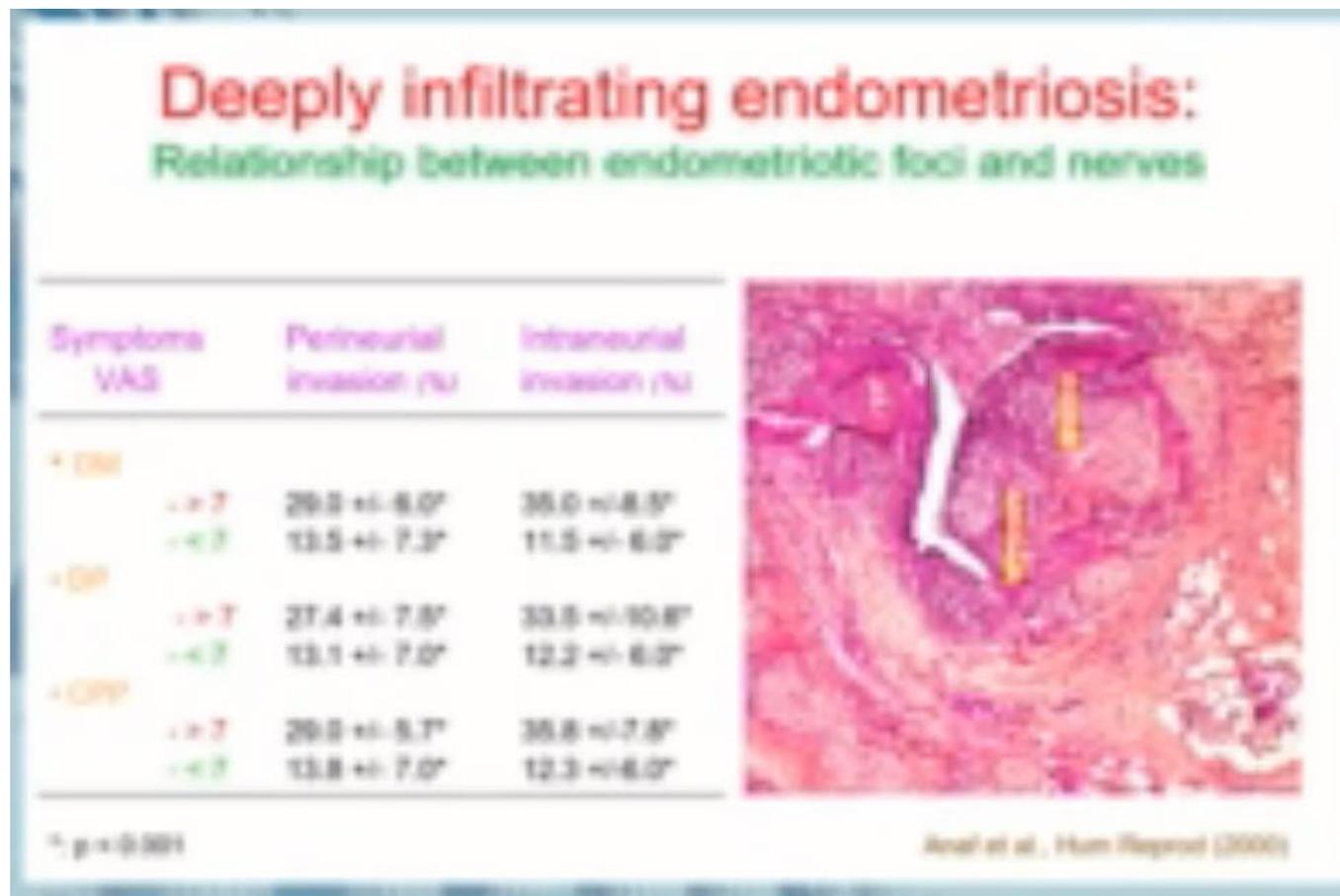
Painful OMA



Painful OMA



DIE nerve fibers



Nerve Growth Factor

proliferative & secretory
phase

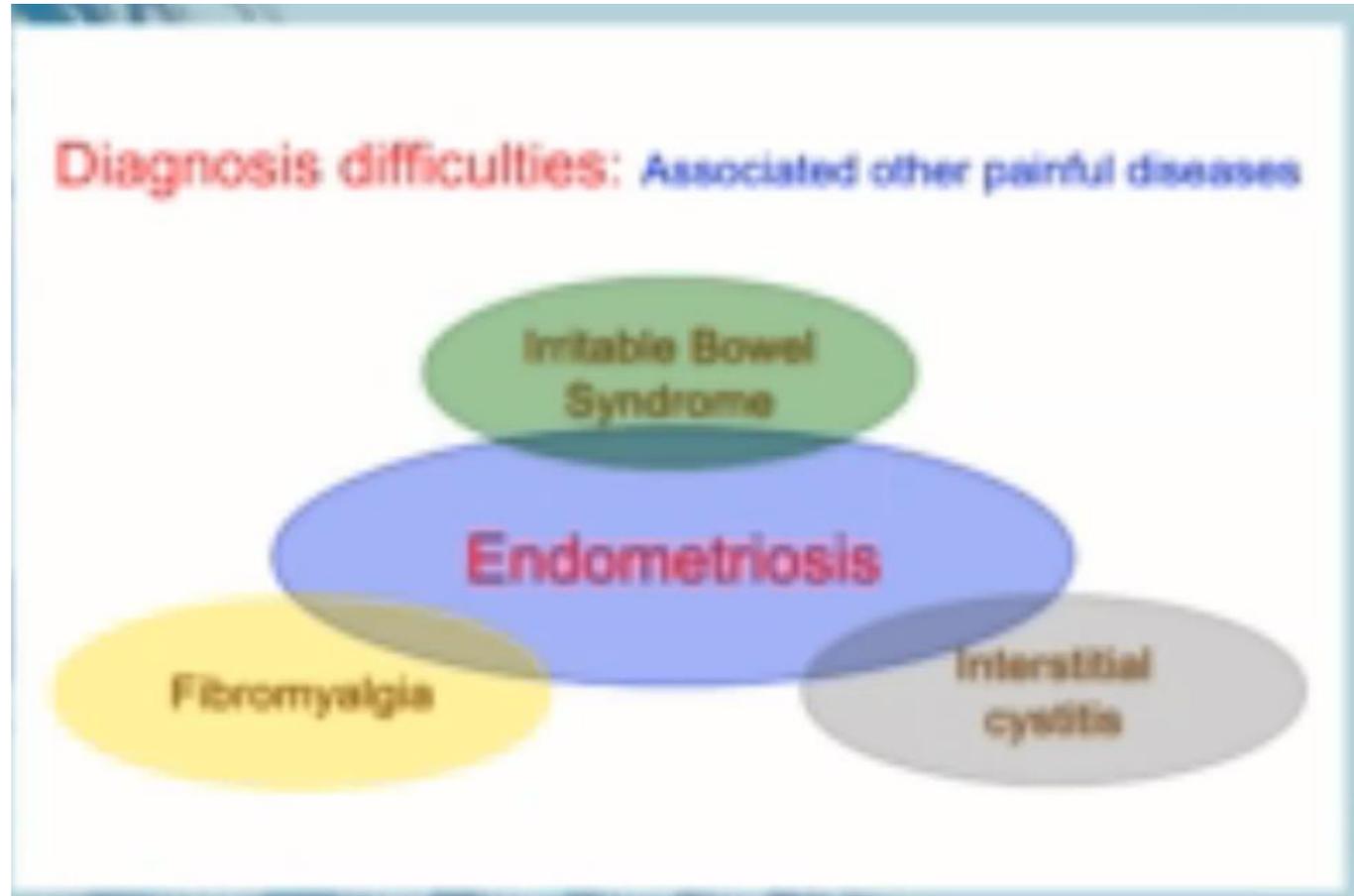
Endometriosis: NGF expression in stroma between different anatomical locations

Endometriosis anatomical location	NGF expression
Proliferative phase	
+ Deep nodule	204 +/- 21
+ Ovarian endometriosis	125 +/- 15
+ Peritoneal endometriosis	100 +/- 9
Secretory phase	
+ Deep nodule	173 +/- 28
+ Ovarian endometriosis	85 +/- 3.5
+ Peritoneal endometriosis	35 +/- 13

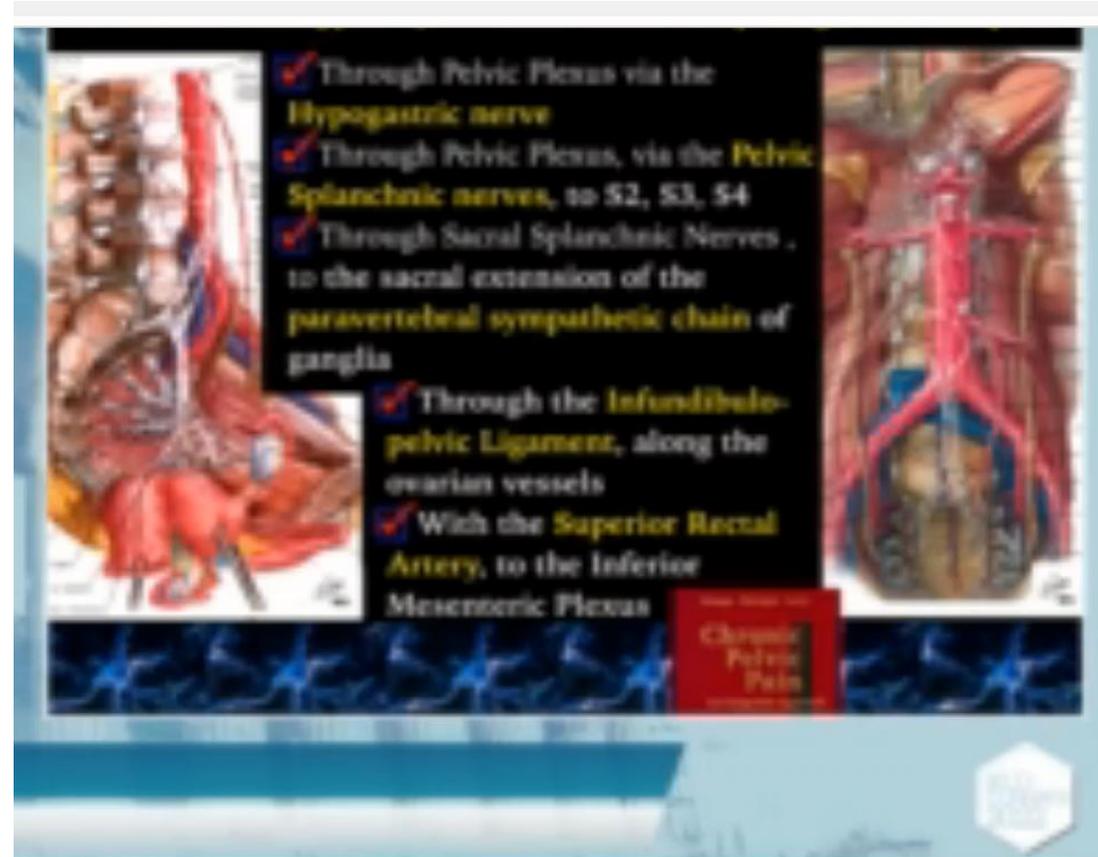
NGF expression was significantly stronger in deep nodules than in ovarian and peritoneal endometriosis

Anal et al., Hum Reprod (2002)

Endometriosis CO-Morbidities



Endometriosis central sensitization



Endometriosis treatment goals



in a Referral Center



- ✓ Symptoms relief
- ✓ Eradication of disease
- ✓ Fertility improvement
- ✓ Prevention of complications
- ✓ Prevention of neurologic post-operative dysfunctions



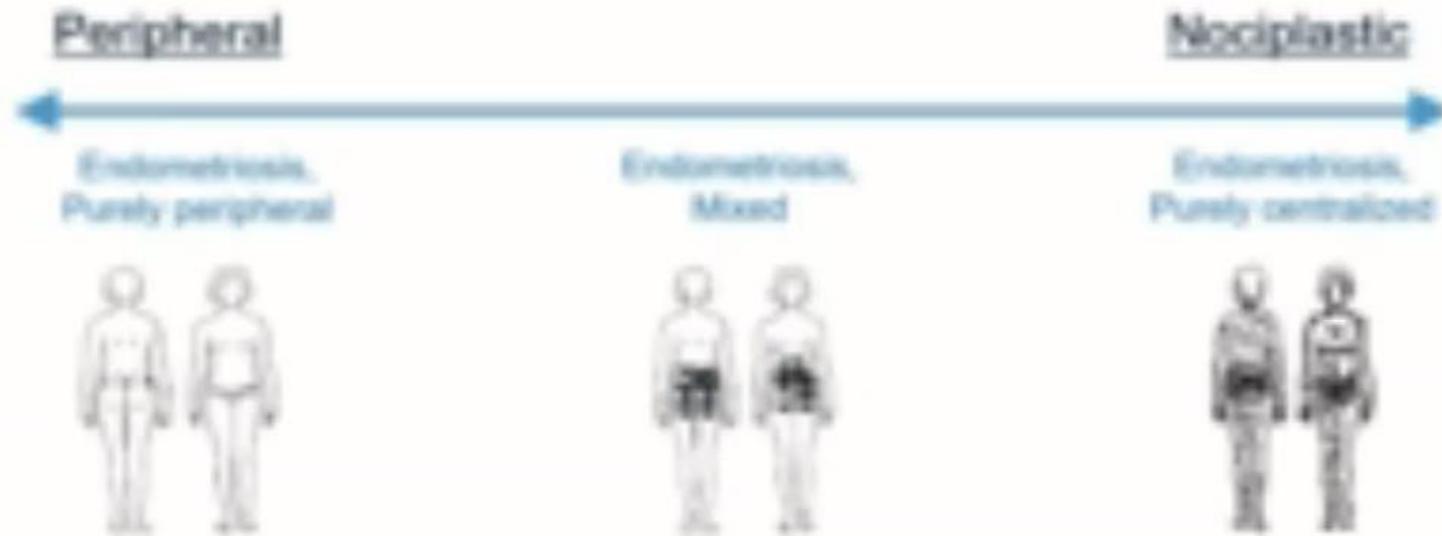
www.isaschool.com

Endometriosis treatment goals



CPP-mixed pain

#2- Most chronic pain conditions are "mixed pain" conditions with variable degrees of peripheral versus central mechanisms



RECOMMENDED PERIOD BETWEEN ADENOMYOSIS SURGERY AND PERMISSION FOR PREGNANCY *OSADA 2019*

No reported investigation into the contraception period recommended prior to pregnancy, following surgical removal of [uterine adenomyosis](#), has been found. The postoperative field may be observed as an avascular area, when using colored Doppler imaging and contrast-enhanced [MRI](#). The author has given permission for pregnancy to be attempted after confirming the resumption of blood flow (loss of the avascular area) to the postoperative field. In this area, blood flow resumed, in 92 cases (81.4%), within 6 months. However, when the uterine wall was largely resected, the resumption of blood flow could be delayed by >2 years ([20](#)).

but when? how? How much? By whom?

• Live

ADENOMYOSIS SURGERY YES...
BUT WHEN? HOW? HOW MUCH AND BY
WHOM?

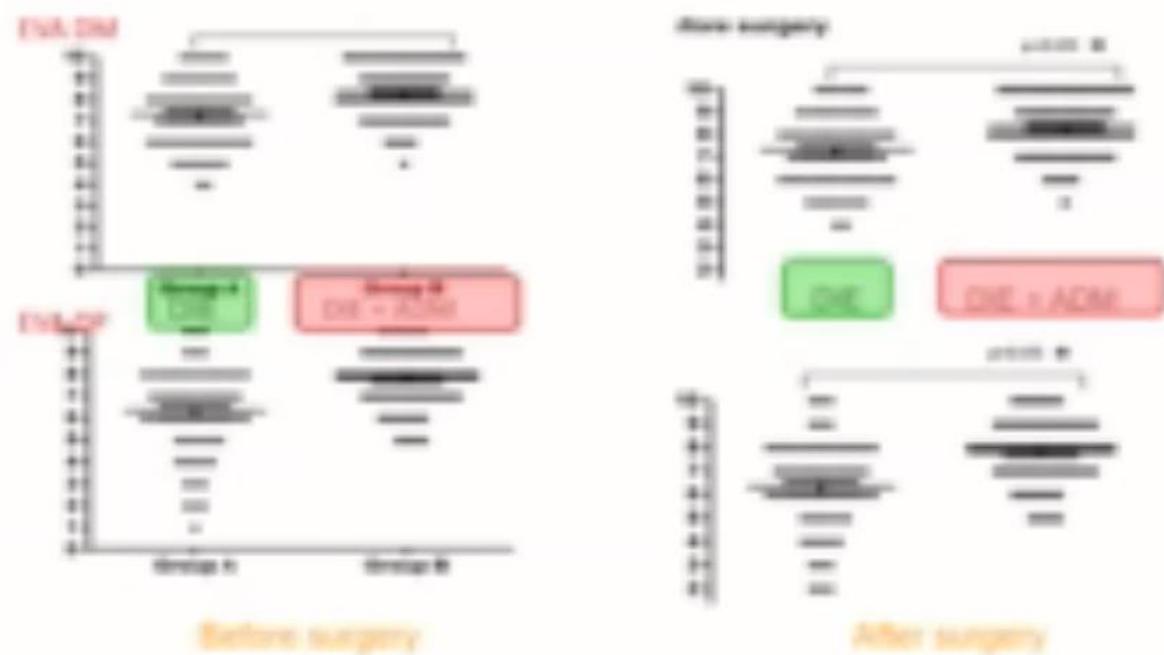
EXPERIENCE = Specialization

Consultation & Counseling = Information

Obstetrical care & communication = Team work

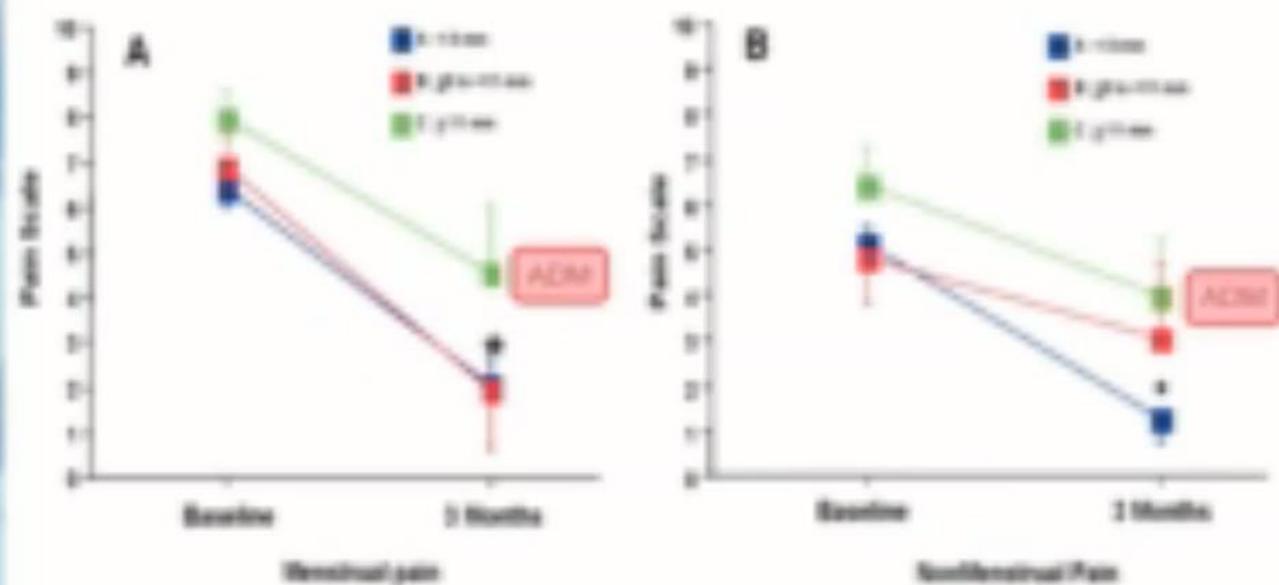


Adenomyosis: a cause of persistent pain after DIE surgery



Lazzari L, et al., *Reprod Sci* (2016)

Adenomyosis leads to Pelvic pain



Parker et al., Fertil Steril (2006)

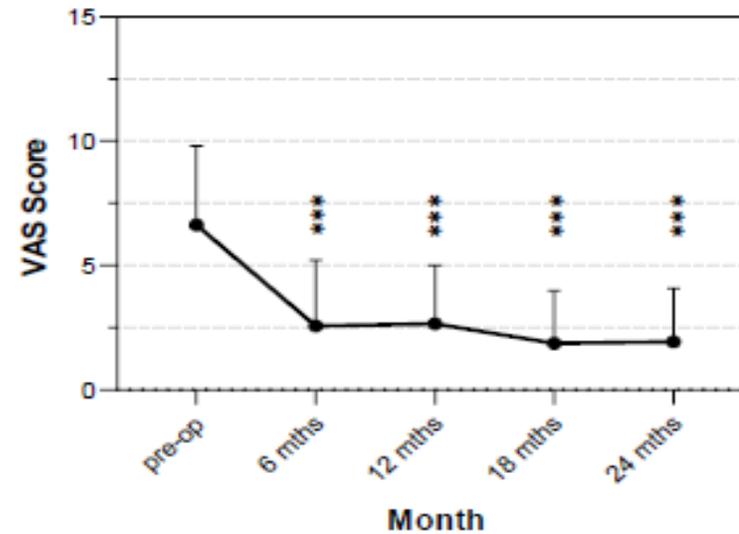
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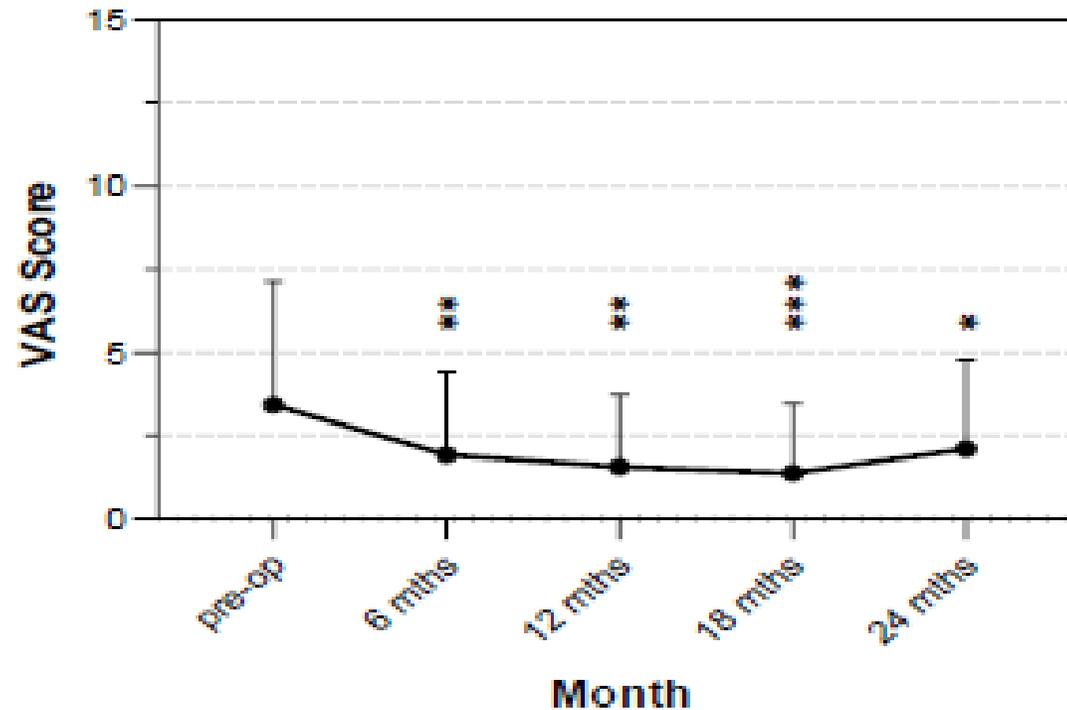
- **Methods:** : A population-based registry study included one hundred and twenty-two(122) symptomatic women with endometriosis who underwent laparoscopic surgery for endometriosis between 2019–2021. Prior to surgery, a visual analog scale was used to assess pain intensity, as well as after 6, 12, 18, and 24 months after surgery.

Figure 1. Dysmenorrhea visual analog scale (VAS) scores significantly improved after surgery.



The mean visual analog scale score for dysmenorrhea :
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Figure 2. Dyspareunia visual analog scale (VAS) scores significantly improved after surgery.



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