Does Leuprolide Acetate Predict Successful Pain Relief After Hysterectomy and BSO in Endometriosis Patients?

University of Colorado Anschutz Medical Campus

Erica Dolph, MS4; Janelle Sheeder, PhD; Jaime Arruda, MD

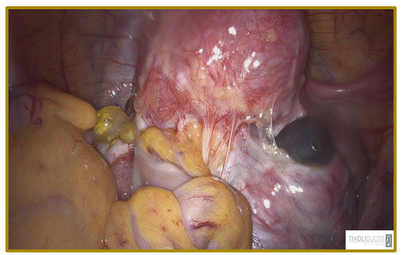
University of Colorado, Department of Obstetrics and Gynecology

Aim

To evaluate whether patients with endometriosis-associated pelvic pain who achieve pain relief with leuprolide acetate (depo Lupron) are more likely to achieve pain relief after definitive surgical management with hysterectomy and oophorectomy (BSO)

Background

- Endometriosis is a common disease affecting approximately 10% of reproductive age women
- Treatment can include hormonal suppression, conservative surgery with removal of endometriosis, or definitive surgery with hysterectomy and/or BSO
- Some patients have persistent pelvic pain after surgery
- It can be difficult to predict which patients with endometriosis may have pain relief after surgery



Methods

- Retrospective chart review at an urban academic teaching hospital from years 2015-2021
- IRB Exemption was approved through the COMIRB project proposal protocol 20-1329.
- Inclusion Criteria: a surgical pathologic diagnosis of endometriosis, a trial of Lupron prior to surgery, >6 weeks of follow-up noted in EMR
- Pain was recorded as a binary measure and was obtained from the subjective portion of the patient's pre and post operative notes

Results

	Lupron Responders (n=15)	Lupron Non-Responders (n=16)	P-Value
Age (Years)	40 (27-51)	39 (18-51)	0.86
Age > 35 Years	80%	81.30%	1
Hispanic/Latinx	13.30%	0%	
White	73.30%	93.60%	
Black/African American	0%	6.30%	
Unknown/Not Reported	20%	6.30%	
Race			0.346
Ethnicity			0.086
BMI	28.5	27.8	0.862
Parity	.93 (0-3)	1.93 (0-5)	0.192

	Lupron Responders (n=15)	Lupron Non-responders (n=16)	P-value
Adhesions (present)	93%	100.00%	0.484
# Prior therapies for pain	2.93	3.12	0.537
EBL (cc)	50	50	0.466
Abdominal hysterectomy	2	2	
Laparoscopic hysterectomy	5	7	
Robotic hysterectomy	8	7	
Mode of hysterectomy			0.368
Complete pain relief after surgery	**0.733**	**0.375**	**0.045 ***

- 31 patients were identified who had undergone a trial of Lupron prior to hysterectomy and BSO for endometriosis-associated pelvic pain
- 15 patients reported complete relief from pain with leuprolide acetate ("Lupron responders")
- 16 patients reported incomplete or no pain relief from leuprolide acetate ("Lupron non-responders")
- The groups were statistically similar with regard to age, ethnicity, race, BMI, parity, number of past treatments for pelvic pain, mode of hysterectomy, blood loss during surgery, presence of adhesions, and surgical complications
- Patients used Lupron for 12-24 weeks prior to surgery on average.
- Patients were followed for 12 weeks after surgery on average
- "Lupron responders" were **MORE LIKELY** to report complete resolution of pain after hysterectomy and BSO than "Lupron non-responders" (73.7% versus 37.5%, p=0.045)

Disclosures: Dr. Arruda is a consultant and PI for Eximis Surgical (fibroid research)

Conclusions

- In our study, patients who had complete pre-operative pain relief using leuprolide acetate were more likely to achieve complete pain relief with hysterectomy and BSO
- A trial of leuprolide prior to surgery may be helpful to predict which patients will benefit from hysterectomy and BSO for endometriosis-related pelvic pain.

Future Considerations

- Prospective randomized trial of leuprolide acetate (or other GNRH agonist or antagonist) as a predictor for surgical pain relief
- Utilize a standardized pain scale to evaluate patients with moderate pain relief
- Standardize longer follow-up for these patients to evaluate if pain relief persists years after surgical intervention

References

1. Adamson GD, Kennedy S, Hummelshoj L. Creating solutions in endometriosis: global collaboration through the World Endometriosis Research Foundation. J Endometr Pelvic Pain Disord. 2010;2(1): 3–6. http://www.nichd.nih.gov/health/topics/endometri/Pages/default.aspx. Accessed 12 July 2017.
2. Armstrong C. ACOG updates guideline on diagnosis and treatment of endometriosis. Am Fam Phys. 2011;83:84–85.
3. Practice Committee of the American Society for Reproductive Medicine. Treatment of pelvic pain associated with endometriosis: a committee opinion. Fertil Steril 2014; 101:927.
4. Guzick DS, Huang LS, Broadman BA, et al. Randomized trial of leuprolide versus continuous oral contraceptives in the treatment of endometriosis-associated pelvic pain. Fertil Steril 2011; 95:1568.
5. Brown J, Pan A, Hart RJ. Gonadotrophin-releasing hormone analogues for pain associated with endometriosis. Cochrane Database Syst Rev 2010; :CD008475.
6. Practice bulletin no. 114: management of endometriosis. Obstet Gynecol 2010; 116:223.
7. ESHRE Guideline Endometriosis. European Society of Human Reproduction and Embryology. February 2022. https://www.eshre.eu/Guidelines-and-Legal/Guidelines/Endometriosis-guideline (Accessed on February 09, 2022).
8. Shakiba K, Bena JF, McGill KM, et al. Surgical treatment of endometriosis: a 7-year follow-up on the requirement for further surgery. Obstet Gynecol 2008; 111:1285.