

Possible rodent models of induced-endometriosis-like lesions

- Homologous and syngeneic models: normal endometrial tissue is surgically transplanted or injected IP or IM into the peritoneal cavity of immunocompetent recipients and then the transplanted tissues start to grow in an estrogen-depend manner (homologous: donor is the recipient or syngeneic: donor and recipient from the same strain but not same individuals)
- Heterologous models: human endometriotic lesions are transplanted into the peritoneal cavity of immunodeficient rodent.

We established a rat model of surgically-induced endometriosis to investigate the effect of new therapies on endometriosis pelvic pain and lesions growth. The validity of the model was confirmed by investigating the effect of the clinically-used GnRH agonist, leuprolide.

Pathophysiological features and measurable endpoints

- Evoked pelvic pain evaluation by Von Frey .
- Spontaneous pain evaluation by abdominal licking behavioural test.

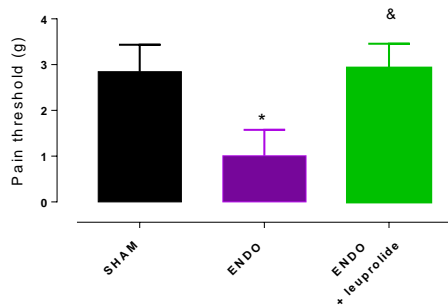


Figure 1: Abdominal pain threshold was decreased by 2 fold in rats with endometriosis vs. sham rats ($p < 0.05$, Dunnett's multiple post-test vs. SHAM). Leuprolide significantly increased the threshold force required to elicit a behavioural withdrawal response in rats suffering from endometriosis ($p < 0.05$, Dunnett's multiple post-test vs. ENDO).

- Endometriosis lesions measurement

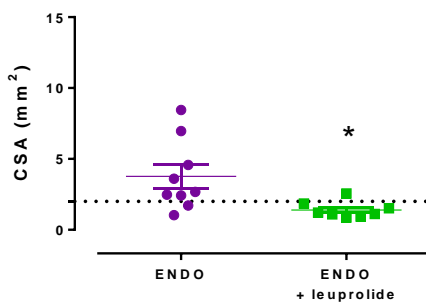


Figure 2: The mean cross-sectional lesion area was significantly larger compared with the mean area of the lesions at the time of the surgical induction of endometriosis. Leuprolide suppressed the lesions growth ($p < 0.05$, Student's t-test)

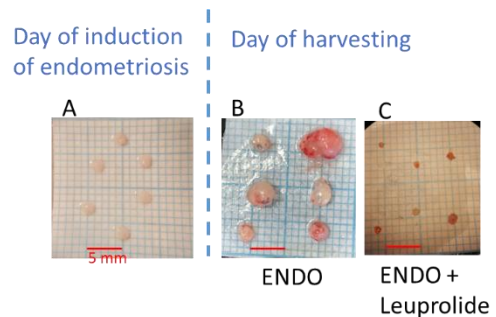


Figure 3: Representative pictures of the different range of lesions at induction of endometriosis and day of harvesting.

- Myometrium smooth muscle contractile and relaxation responses to neuropharmacological/electrical stimulation
- Tissue weight
- Histology and Immunohistology evaluation

Related Pelvipharm bibliography:

Assaly R *et al.* *Gynecol Res Obstet* (2022);8(3):036-042