



BLADDER OUTLET OBSTRUCTION

A MODEL FOR DETRUSOR INSTABILITY AND BLADDER HYPERTROPHY

MODEL

Cystometry in animals with Bladder Outlet Obstruction (BOO).

This experimental model mimics the functional (bladder instability / non-voiding contractions) and morphological changes (bladder hypertrophy) observed in the urinary bladder of patients affected by benign prostatic hyperplasia (BPH).

SPECIES

Rat, mouse, guinea-pig

INTEREST

- This model is suitable for testing compounds for the inhibition of bladder instability.
- Cardiovascular parameters (blood pressure, heart rate) can be monitored simultaneously to verify functional uroselectivity.
- Compounds that show a positive response in this model include antimuscarinics and K_{ATP} channel openers.

MODEL DESCRIPTION

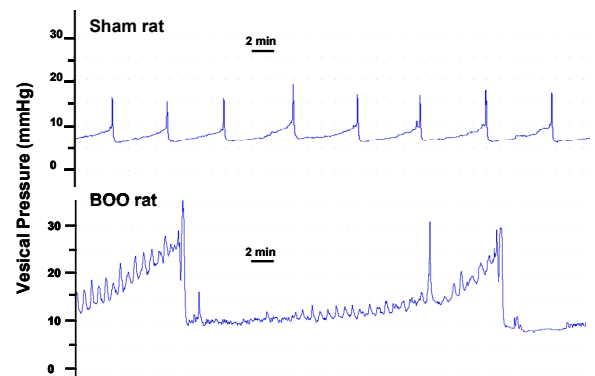
- Outlet obstruction is produced by a ligature around the urethra for five or six weeks.
- Cystomanometry, in restraining or metabolic cages, in conscious animals using saline infusion into the bladder.
- Test compounds can be administered acutely *via* various routes (i.v., p.o., s.c., i.g.) or chronically using osmotic pumps implanted subcutaneously.

PARAMETERS EVALUATED

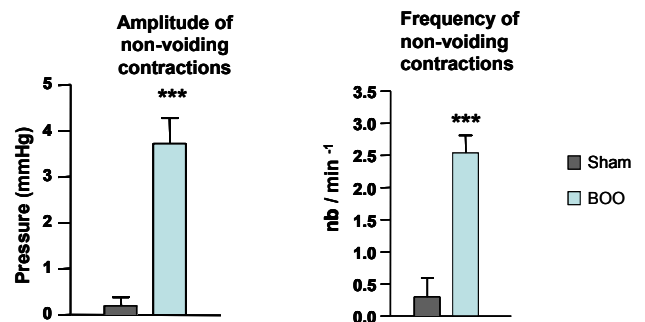
- Bladder capacity and bladder weight
- Intercontraction intervals during continuous cystometry
- Micturition pressure
- Micturition volume and residual volume
- Basal intravesical pressure
- Threshold pressure for micturition
- Voiding frequency and efficiency
- Histomorphometric analysis on bladder sections

SCIENTIFIC PUBLICATIONS

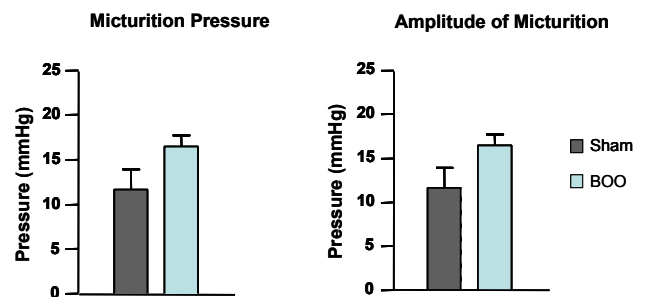
- Lluel P et al, *J Urol* **160**: 2253-7, 1998
- Lluel P et al, *Neurourol Urodyn* **21**: 142-53, 2002
- Lluel P et al, *J Urol* **175**: Abst. 1455, 2006



Typical cystometrograms in conscious female rats (control and after bladder outlet obstruction).



*** P < 0.001 versus sham, unpaired Student t-test (n=8/9 per group)



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Effects of BOO on different cystometric parameters in conscious female rats.