



Cavernous nerve injury-induced erectile dysfunction in rats

A MODEL OF ERECTILE DYSFUNCTION

Model

Erectile dysfunction (ED) is defined as the inability to achieve or maintain an erection for satisfying sexual intercourse; 5-20 % of men have moderate-to-severe ED. We developed a model of ED based on bilateral cavernous nerve (CN) ablation. This model mimics injuries occurring at some stage in radical pelvic surgeries for BPH or cancer (prostatectomy, cystoprostatectomy and abdominoperineal resections)

Species

Rat

Interest

- Bilateral CN injury models are believed to recapitulate the condition in humans following a radical prostatectomy.
- This model of CN injury is a relevant preclinical model to test therapeutic approaches for the treatment of ED.
- For example, this model can be used to evaluate intracavernous cellular treatment.

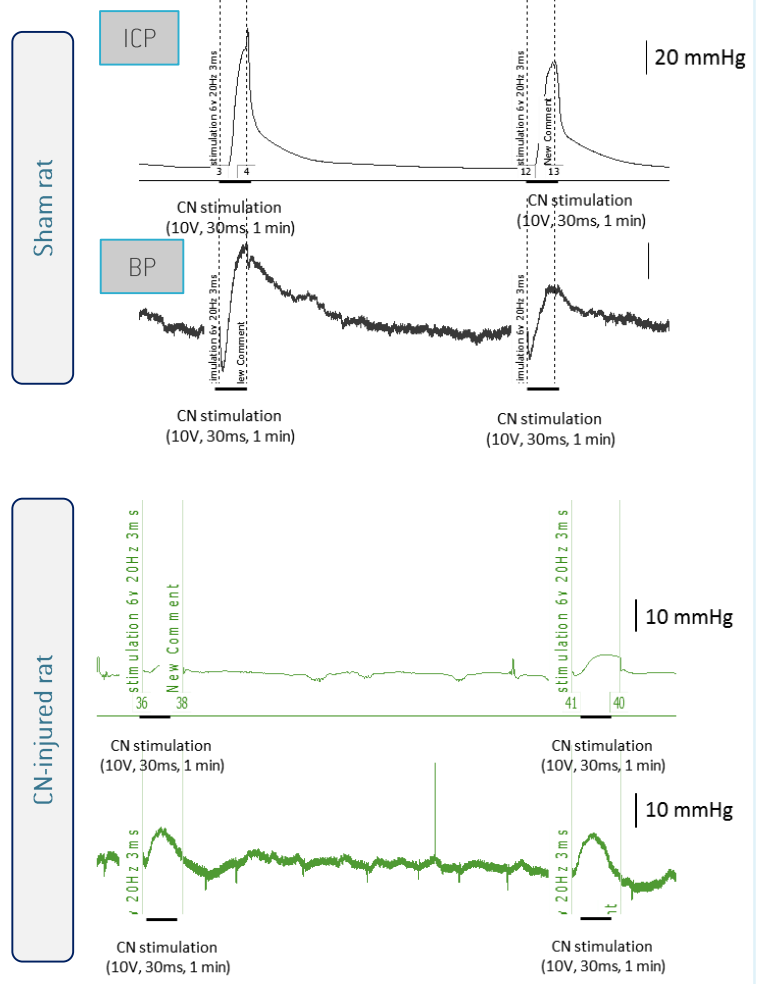
Model Description

- In anesthetized rats, the CN and pelvic ganglia are exposed on either side of the prostate. A segment of CN is removed from each side. For sham group, CN are exposed but no ablation is performed.
- 4 or 8 weeks after CN injury, erectile function is assessed.
- In anesthetized rats, wire steel electrodes are placed around the pelvic ganglia and the cavernous nerve for electrical stimulation. CN are stimulated three times at 6V, 3ms for 1 min at 20 Hz
- Intracavernous pressure (ICP) and blood pressure (BP) are recorded.

Evaluated Parameters

- Intracavernous pressure (ICP, mmHg)
- Mean of arterial pressure (MAP)

Representative recordings of intracavernous and arterial pressures in rats: in CN-injured rats, response on ICP is compromised



Cellular treatment partly restores the erectile response 4 weeks after CN injury

