

**Measurement of intracavernous pressure in conscious rat using radiotelemetry**

**Objective:**

To measure continuously pressure within the corpus cavernosum of the penis in conscious, freely moving rats. Intracavernous pressure (ICP) represents a physiological marker of the erectile function. ICP monitoring gives rational data on erectile activity in response to different stimuli (e.g. drug, sexual cues) in various conditions (e.g. peripheral/CNS lesion or rehabilitation).

**Summarized methodology:**

The telemetric device (model TA11PA-C40, Data Sciences International; figure 1) is implanted to rats under isoflurane anaesthesia. The tip of the catheter is inserted into the proximal shaft of the corpus cavernosum for ICP measurement. The other end of the catheter is connected to the core of the pressure transmitter positioned laterally under the skin of the abdominal wall. After one-week post-surgical recovery period, rats are placed in the experimental setting equipped with a radiofrequency signal receiver that forwards telemetric signal to a computer (figure 2). Analysis of ICP recording is performed a posteriori using custom-written routines in Elphy software (Sadoc, CNRS, Gif-sur-Yvette, France).

**Endpoints:**

- Number and latency of erectile events (corresponding to ICP increases higher than ICP baseline + 3 standard deviations)
- Amplitude of ICP increases
- Duration of ICP increases
- Area under the curve of ICP increases

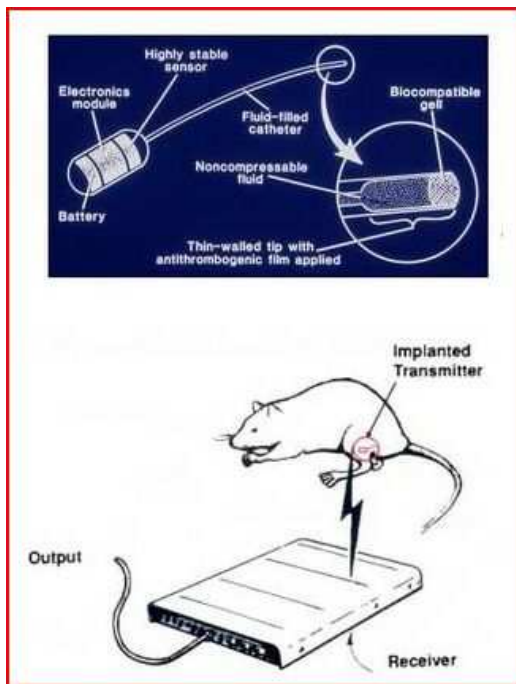


Figure 1: Implantable telemetric device for pressure measurement and receiver.

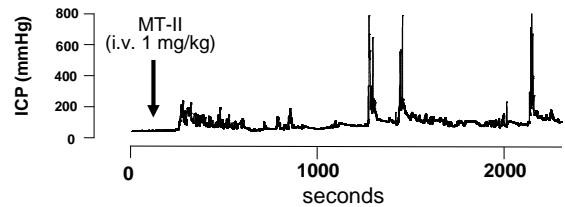


Figure 2: Example of intracavernous pressure (ICP) continuous telemetric recording in conscious, freely moving rat administrated with melanotan-II (MT-II). From Giuliano et al., *Eur Urol.*(2005):48: 145-151

**Related Pelvipharm bibliography:**

- Giuliano, F. et al. *Eur Urol* (2005) : 48 : 145-151
- Bernabé, J. et al. *Am J Physiol* (1999) : 276 : R441-449.
- Giuliano, F. et al. *Prog Urol* (1996) : 6 : 81-86.
- Bernabé, J. et al. *Physiol Behav* (1995) : 57 : 837-841.
- Giuliano, F. et al. *J Urol* (1994) : 152 : 1271-1274.

**Links to applicable therapeutic areas / targeted disorders:**

- Sexual pharmacology
- \* ED (Erectile Dysfunction)