INTRODUCTION & OBJECTIVE

The efficacy of chronic treatment with serotonin selective re-uptake inhibitors (SSRIs) in delaying ejaculation is well documented although their ability to delay ejaculation after acute administration is still a matter of debate (McMahon and Touma, 1999; Waldinger et al., 2004).

Sensory stimuli from the genitourinary area is transmitted to perineal muscle reflex circuits in the spinal cord. Electrical stimulation of the dorsal nerves of the penis (DNP), which convey sensory inputs from the penile glans, has been shown to induce pudendal motoneuron reflex discharges (PMRD) measured in the motor branch of the pudendal nerve, which drives motor outputs to bulbospongiosus muscle (Johnson and Hubscher, 1998).

The goal of the study is to investigate the effects of acute i.v. delivery of dapoxetine on PMRD elicited by stimulation of DNP.

METHODS

Surgical preparation

All animal experiments were carried out in accordance with European Communities Council Directives on the use of laboratory animals.

Adult male Wistar rats weighing 250-300 g were anesthetized with urethane (1.2 g/kg, i.p.), tracheotomized, and the carotid artery catheterized for blood pressure measurement. Bipolar platinum stimulating electrodes connected to an electrical stimulator (AMS 2100, Phymep, Paris, France) were placed bilaterally on the dorsal nerves of the penis (DNP). Electrical stimulation consisted of 0.1 ms duration pulses which intensity was set between 50 and 175 μA. The recording electrode was placed on the motor branch of the left pudendal nerve. Electrode signals were amplified (DP-301, Warner Instrument Corp., Phymep; gain: 10,000; Low pass, 10 KHz; High pass, 300 Hz) before being digitized.

Experimental procedure

Sixty successive single-shock stimuli were bilaterally delivered to DNP and the average evoked responses recorded in the motor branch of the left pudendal nerve were generated.

Pudendal motoneuron reflex discharges (PMRD) recordings were performed 5 minutes prior to and 60 minutes after i.v. injection of saline or dapoxetine (volume 1ml/kg).

Each rat was injected with one of the three tested doses of dapoxetine (1, 3 or 10 mg/kg, i.v.). Latency and duration of PMRD elicited by stimulation of DNP were determined.

RESULTS

Figure 1: Example of pudendal motoneuron reflex discharges (PMRD) elicited by bilateral stimulation of the dorsal nerves of the penis (DNP). The latency of PMRD was increased after dapoxetine treatment in comparison with pre-treatment at the three doses of dapoxetine tested. Values represent the means±sem of 9-10 rats. Statistics. Asterisks (one symbol, p<0.05; three symbols, p<0.001): paired t-test.

Figure 2: Effect of acute i.v. injection of dapoxetine on latency of PMRD elicited by stimulation of DNP. The latency of PMRD was increased after dapoxetine treatment in comparison with pre-treatment at the three doses of dapoxetine tested.

Values represent the means±sem of 9-10 rats. Statistics. Asterisks (one symbol, p<0.05; three symbols, p<0.001): paired t-test.

CONCLUSION

Acute i.v. delivery of dapoxetine increases PMRD latency and reduces PMRD duration at a dose of 1 mg/kg.

Acute i.v. dapoxetine is capable of modulating the ejaculatory reflex loop in anesthetized rats.