ABSTRACT

L6-S1 SPINAL NERVES STIMULATION REDUCES MICTURITION FREQUENCY IN ANESTHETIZED RATS WITH CYCLOPHOSPHAMIDE-INDUCED CYSTITIS.

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ABSTRACT

Introduction and Objective: the intensity of the electrical stimulation of the spinal nerves, the subtype of fibers recruited, and the resulting effect on micturition frequency.

Methods: Experiments were carried out in isoflurane-anesthetized male Wistar rats. Cystitis was induced by intraperitoneal delivery of cyclophosphamide (CYP, 150 mg/kg, 48 h before the experiment). Neurograms were performed by placing a recording electrode on the pelvic nerve and a stimulating electrode on either the L6 or S1 ipsilateral spinal nerves (intensity range: 25 µA to 4 mA). Two intensities were chosen from the neurograms and systematically tested for spinal nerve stimulation (SNS) in control and CYP treated rats. Continuous electrical stimulation (ES) of the L6/S1 spinal nerves at 200 µA, 20 Hz, marginally reduced the frequency of voiding and non-voiding contractions in CYP treated rats. ES of the L6/S1 spinal nerves at 2 mA resulted in the suppression of voiding contractions, and was not C-fibers, lowered the number of voiding contractions in CYP treated rats to a level not significantly different from the value observed in control rats. These results further demonstrate the ability of electrical stimulation of the spinal nerves, or neuromodulation, to decrease bladder overactivity in pathophysiological models, and give support to the use of SNS to treat interstitial cystitis in humans.

REFERENCES