Objective: Serotonin and norepinephrine systems are involved in the neural control of lower urinary tract function. The aim of this study was to compare the response on striated anal sphincter electromyographic (SAS-EMG) activity and cystometric parameters, when duloxetine and clomipramine were intravenously administrated. Methods: The effects of intravenous 1 and 2 mg./Kg. duloxetine or clomipramine on lower urinary tract function were studied in a total of 32 male and 32 female rabbits, under nonirritative conditions (intravesical infusion of saline) and in a model of bladder irritation (i.e., transvesical infusion of 0.5% acetic acid). A transurethral double-lumen catheter in male rabbits, and a subcutaneous cystostomy in female rabbits, were used for liquid infusion and recording of intravesical pressure during a cystometrogram. Simultaneously, SAS-EMG was recorded through electromyography electrodes placed in the perianal striated muscle. Results: Cystometric parameters: Under irritative conditions, 2mg./Kg. clomipramine in male rabbits and 1 or 2 mg./Kg. in female rabbits, depending on the dose, increased bladder capacity (BC), contraction duration (CD) and intercontraction interval (ICI), and decreased baseline pressure (BP). In male and female rabbits, duloxetine dose-dependently increased BC, CD and ICI. Under nonirritative conditions, clomipramine at 2 mg./Kg. and duloxetine dose-dependently solely increased BC in female rabbits. Electromyographic activity: A marked effect on SAS-EMG activity of duloxetine under irritative conditions was revealed in male and female rabbits. Under these conditions, clomipramine increased SAS-EMG activity only in female rabbits. Under nonirritative conditions, 2 mg./Kg. duloxetine increased SASEMG activity only in female rabbits. Conclusions: The stronger effects on the SAS-EMG activity were produced by duloxetine in female rabbits under irritated bladder conditions. Clomipramine, under irritative conditions, had a relaxing effect on intravesical pressure, which is not the case with duloxetine.

Keywords