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[\[PDF \(608K\)\]](#) [\[References\]](#)**Early capsaicin intervention for neurogenic bladder in a rat model of spinal cord injury**

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**ABSTRACT**

We explored capsaicin pretreatment, prior to spinal trauma, as a method to prevent the development of neurogenic detrusor overactivity (NDO) and urethral-bladder dyssynergia reflex after spinal cord injury (SCI). In addition, the duration of effect of capsaicin therapy on NDO in a rat model of SCI was investigated. Two sets of experiments were performed on female Sprague Dawley rats transected at the T9-T10 spinal level. First, SCI rats received capsaicin (125 mg/kg s.q.) 3-4 days before and 4-5 days after SCI. Cystometrograms (CMG) was performed 4 weeks after injury. In the second set of experiments, serial CMG in the same SCI animal was performed after one time injection of capsaicin (125 mg/kg s.q.) 4 weeks after spinalization. There were no differences in intercontraction intervals, voiding efficiency, or voiding pressure between the capsaicin pretreated and control SCI rats. However, the number of uninhibited detrusor contractions decreased 4 weeks after injury. We found that a single dose of capsaicin suppressed uninhibited detrusor contractions for 34 days in the chronic SCI animals. Early therapy with capsaicin was able to prevent/reduce detrusor hyperreflexia in spinal cord injured animals 4 weeks after injury. Early vanilloid therapy may prevent development of urologic sequelae after SCI.

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