

EFFECTS OF INTRAVENOUS TNP-ATP IN CONSCIOUS RATS WITH BLADDER OUTFLOW OBSTRUCTION.**Hypothesis / aims of study**

Mechanisms underlying bladder instability in conditions like BPH are not clear; however the mechanical obstruction could affect a change in the purinergic receptor population in sensory neurons in urothelium and suburothelia tissue. ATP produced in urothelium is known to contribute to the control of afferent activity, in bladder

Study design, materials and methods

Continuous cystometry was performed in freely moving normal, female Sprague-Dawley rats with 2 weeks partial urethral obstruction. Urodynamic parameters were evaluated before and after i.v. administration of TNP-ATP.

Results

TNP-ATP had no significant affect on cystometric parameters in normal awake rat. In obstructed animals, i.v.TNP-ATP ($50\mu\text{M}^{-1}$), reduced micturition pressure (MP) from (110 ± 11 to 81 ± 3 cm H₂O, $n = 6$, $p < 0.05$), amplitude of spontaneous activity (ASA) from (25 ± 0.25 to 1.88 ± 0.22 cm H₂O, $p < 0.01$) and frequency of spontaneous activity (FSA) from $2.85 \pm 0.25 \text{ min}^{-1}$, $p < 0.001$).

Interpretation of results

Purinergic receptors are involved in mechano-afferent signaling in bladder and combined with nitergic and tachykinin mechanisms may be playing a significant role in bladder over activity.

Concluding message

Activation of purinergic mechanisms on sensory nerves may be important in regulating micturation reflex.