

Author(s)	Jeong Gu Lee , Dong Hee Yoon
Institution, city, country	Department of Urology, Korea University College of Medicine, Seoul, Korea
Title (type in CAPITAL LETTERS, leave one blank line before the text)	
ROLE OF PERIPHERAL AND SPINAL α 1-ADRENOCEPTOR IN BLADDER OVERACTIVITY INDUCED BY PARTIAL BLADDER OUTLET OBSTRUCTION IN RAT	
<p>Aims of Study. It is suggested that bladder overactivity seen after infravesical obstruction may be caused by receptor changes in the bladder or in the neural pathway connecting bladder and spinal cord. This study was performed to see whether α1-adrenoceptors at the peripheral and spinal level mediate the micturition reflex of partially obstructed bladder and to identify if spinal or peripherally injected α1-adrenoceptor antagonist inhibit bladder contraction induced by obstruction.</p>	
<p>Methods Female SD rats (200-250g), were divided into normal(n=33) and obstructed(n=110) groups. Partial obstruction of bladder neck was done using silk, and the cystometric test was performed 6 weeks after the obstruction. Both groups were anesthetized with urethane(125mg/100gm B.W.), and continuous cystometry was done with infusion of saline. The α-adrenoceptor antagonists were injected into femoral artery and subarachnoid space at the level of L6-S1 spinal cord segment. Cystometric parameters analyzed were as followed; basal pressure(BP), premicturition pressure(PMP), micturition pressure(MP), micturition volume(MV), bladder capacity(BC), frequency(Freq.), residual volume(RV), and frequency of involuntary contractions(FIC).</p>	
<p>Results Partial obstruction led to significant increase in bladder weight. In the obstructed group, MV, BC, and RV were increased significantly compared to the normal group. 30% of the obstructed group exhibited involuntary bladder contraction. After the intra-arterial (i.a.) administration of doxazosin and tamsulosin, PMP, MV, and BC were significantly increased in both normal and obstructed groups. The extent of increase in BC after the injection of tamsulosin was greater than that after the injection of doxazosin in both normal and obstructed rats. FIC was significantly decreased after the i.a. administration of doxazosin and tamsulosin in the obstructed group. No significant cystometric changes were observed after the intrathecal(i.t.) administration of doxazosin and tamsulosin in the normal group. However, in the obstructed group, i.t. injection of doxazosin and tamsulosin induced increase in BC and decrease in frequency. In the obstructed group, the extent of both of increase in BC and decrease in frequency after the injection of tamsulosin was greater than that after the injection of doxazosin. The i.t. injection of phentolamine induced overflow incontinence in both normal and obstructed groups.</p>	
<p>Conclusion In the rats with partial bladder outlet obstruction, α1-adrenoceptor is involved in micturition reflex at both spinal and peripheral level. In the normal group, α1-adrenoceptor antagonist had no specific effect on spinal micturition reflex. Tamsulosin was shown to be more effective than doxazosin in inhibiting micturition reflex at both peripheral and spinal levels of obstructed rats. According to these results, α1-adrenoceptor antagonist widely used in BPH also seem to be effective in reducing involuntary bladder contraction secondary to infravesical obstruction by BPH.</p>	