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BLADDER FUNCTION CHANGES ACCORDING TO THE DOSAGE OF TAMSULOSIN AMONG THE SPINAL CORD INJURED RATS MODEL

Hypothesis / aims of study

Studies regarding the mechanism or the dosage of Alpha blocker used for neurogenic bladder after spinal cord injury are needed. In this study, change in urination and bladder contractility of spinal cord injured rats(SCIR) according to tamsulosin dosage was observed

Study design, materials and methods

55 female Sprague-Dawley rats were used for the study and they were randomly divided into 4 groups: group 1(n=10)- normal ones, group 2(n=15)-SCIR+vehicle, group 3(n=15)-SCIR+0.1mg/kg of tamsulosin, group 4(n=15)-SCIR+1mg/kg of tamsulosin. Spinal cord was surgically transected during the T10 level. Tamsulosin was intraperitoneally injected two times a day(at 9 AM and 6 PM) and for a week. Awaken cystometry and the organ bath study were performed after 7 days. Medicinal reactions of the change in bladder contractility according to following factors were comparatively analyzed: acetylcholine (Ach, 10-9~10-4 M) alone, Ach with AQ-RA 741 (M2 blocker) or 4-DAMP (M3 blocker) 10-7 M pretreated.)

Results

All spinal cord injured rats showed significant decrease in the bladder function regarding awaken cystometry, compared to the control group.) Micturation duration was increased with considerable amount only in the group 3, compared to other two experimented groups.($p<0.05$) Other parameters showed no significant difference.) In the organ bath study, acetylcholineinduced contractility in the SCIR groups was significantly higher than the control group.) Only group 3 showed considerable decrease in contractility by acetylcholine with 4-DAMP pretreated, among the SCIR groups.

Interpretation of results

These results suggest that neourogenic detrusor overactivity caused by denervation hypersensitivity
after spinal injury can be decreased by adequate amount of tamsulosin injection(0.1 mg/kg), not high dose (1mg/kg)

Concluding message

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Disclosures
Funding: No **Clinical Trial:** No **Subjects:** ANIMAL **Species:** Rats **Ethics Committee:** Wonkwang university animal committee