Effects of Tamsulosin in Neurogenic Voiding Dysfunction in Rat Model

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INTRODUCTION

α1 AR antagonists were also used for voiding dysfunctions of neurogenic origin empirically.

We are to investigate the effects of tamsulosin on the neurogenic voiding dysfunction in regard to peripheral bladder function and central micturition area using intracerebral hemorrhage (ICH) induced rat model.

MATERIALS & METHODS

Animals: Female Sprague-Dawley rats (10 weeks; 260 ± 10 g)

A. Sham-operation group (n = 10)
B. ICH-induced group (n = 10)
C. ICH-induced and 0.01mg/kg tamsulosin treated group (n = 10)
D. ICH-induced and 0.1mg/kg tamsulosin treated group (n = 10)
E. ICH-induced and 1mg/kg tamsulosin treated group (n = 10)

Induction of ICH

• For the induction of hemorrhage in the hippocampal CA1 region, the rats placed in a stereotaxic frame.
• Though a hole drilled in the skull, a 26-gauge needle was implanted into the hippocampal CA1 region at the following coordinates: 2.4 mm lateral to the midline, 4.2 mm anterior to the coronal suture, and depth 2.4 mm deep from the surface of brain.
• ICH-induced and sham-groups received 2µl collagenase solution (containing 0.2 U/µl of Type IV collagenase) and 2µl physiological saline, respectively.

RESULTS

Effects of tamsulosin on bladder function in cystometry

Fig. 1. Intracerebral hemorrhage-induction operation

Cystometry

• The bladder function was tested using a cystometry.
• The rats were tested in a cystometry 14 days after first treatment of tamsulosin.

Fig. 2.

Fig. 3.

Data analysis – Immunohistochemistry (c-Fos & NGF)

CONCLUSION

Tamsulosin exerts inhibitory effect on neuronal activation in the neuronal voiding centers of ICH.

The present results suggest the possibility that tamsulosin is effective therapeutic modality for ameliorating the symptoms of ICH.

Disclosures Statement

I have no relevant financial relationships to disclose.