

## HYALURONIC ACID INTRAVESICAL INFUSION IN IMMUNOGENESIS CYSTITIS RATS INDUCED BY INTRAVESICAL ZYMOBAN

### Hypothesis / aims of study

To examine the functional and histologic changes of the hyaluronic acid intravesical infusion in the immunogenesis cystitis rats.

### Study design, materials and methods

Timed-pregnant female Sprague Dawley rats are obtained and 30 female pups are maintained following birth. Twenty pups were anesthetized for 30 minutes and the bladder was inflamed by intravesical zymosan (0.1 mL) for 3 consecutive days from ages P14 to P16 (P=postnatal day). The rat pups remain housed with their mothers and are separated from their mothers at approximately 3 weeks of age. They were raised to adulthood and tested after ages 8 weeks. We distributed the neonatal induced 20 rats into two groups: intravesical saline, or intravesical hyaluronic acid. The rats are anesthetized and have a 24-gauge intravesical catheter placed transurethraly and receive either saline or hyaluronic acid solution instilled intravesically in volume of 0.5 mL. The solutions are left in place for 30 min and each rat receives 7 successive daily treatments. The third group was control group. Then each group was performed conscious cystometrograms (CMG), urethral and bladder electromyography (EMG). After sacrifice, the bladders of the rats were harvested for histological examination, staining of NGF. The differences between groups were compared with two-sided Student t-test at 0.05 significance level.

### Results

The intravesical saline group revealed higher abdominal withdrawal reflex (AWR) scores compared to intravesical hyaluronic acid and control groups. There was shorter intercontraction interval during CMG in intravesical saline group compared to intravesical hyaluronic acid and control groups. Bladder EMG activity was stronger in intravesical saline group compared to intravesical hyaluronic acid and control groups. Immunostainings showed NGF expression increased in the bladder in intravesical saline group compared to intravesical hyaluronic acid and control groups.

### Interpretation of results

The intravesical saline group revealed higher AWR scores and stronger bladder EMG activity indicates the immunogenesis cystitis rats suffered more discomfort. Immunostainings showed NGF expression increased in the bladder in intravesical saline group indicated NGF might be a predictor for the severity of the immunogenesis cystitis in rats.

### Concluding message

Our immunogenesis cystitis animal model has shown functional and histological alterations after hyaluronic acid intravesical infusion. This may provide a useful model for the study of the pathogenesis and treatment in human interstitial cystitis.

### Disclosures

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