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## **INTRAVESICAL TREATMENT OF POLYSACCHARIDE ALGINATE/COLLAGEN GEL IN A SWINE MODEL OF KETAMINE-INDUCED CYSTITIS**

### Hypothesis / aims of study

Since the pathophysiology of ketamine-induced cystitis (KC) is still unclear, no effective treatments are currently available. The aim of this study was to develop a KC-induced cystitis swine model to evaluate the intravesical polysaccharide alginate/collagen gel treatment.

### Study design, materials and methods

In this study, we used the swine, which shares greater similarities with a human than a mouse or a rat does, as a model for studying human diseases. The female Lanyu swine were injected ketamine to induced cystitis. The bladder function was characterized by cystoscopy, urodynamic and histological evaluations. The swine were distributed into two groups: normal saline injection as control group and ketamine injection group. The swine were bladder irrigated with 100 mL of polysaccharide alginate/collagen gel or saline once a week for 4 weeks. Urodynamic examination and cystoscopy were performed at post-ketamine administration 4, 8, 12week and treatment after 4 weeks.

### Results

After 12 weeks of ketamine injection, cystoscopy revealed remarkable engorged vessels in the ketamine-treated swine bladder. The urodynamic study showed that the inter-contraction interval and micturition volume in ketamine group were lower than saline group. The histological exam demonstrated that inflammatory cells infiltrated in the bladder wall of ketamine-treated swine. After intravesical alginate/collagen treatment, both the inter-contraction interval time and micturition volume increased although there was no significant difference.

### Interpretation of results

Swine bladder may be affected by long-term ketamine administration as the human bladder. Polysaccharide alginate/collagen may have potential to recover the bladder function of KC patients.

### Concluding message

We have established the first swine KC model which may help us better understand the pathophysiology of KC and intravesical polysaccharide alginate/collagen treatment may have potential to treat KC.

### Disclosures

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