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A NEW EXPERIMENTAL MODEL FOR INDUCING INTERSTITIAL CYSTITIS BY OXIDATIVE STRESS USING BLADDER INSTILLATION OF A NITRIC OXIDE DONOR GEL

Hypothesis / aims of study The aim of this study is to develop a new experimental model of inducing interstitial cystitis (IC) through vesical instillation of a polymeric solution containing the NO donor S-nitrousglutathione (GSNO) and to compare it to the experimental interstitial cystitis induced by vesical instillation of protamine and potassium chloride.
Study design, materials and methods For that purpose were used 40 female Wistar rats, divided in four groups: **1** – saline solution + GSNO; **2** – Saline solution + polymeric solution (without GNSO); **3** - protamine sulphate + KCl; **4** - protamine sulphate + GSNO. The rats received one application (5 animals) or 3 applications (5 animals) of the corresponding substance through intravesical instillation, and after 6 days (5 animals) or 9 days (5 animals) they were euthanized and their bladders were removed for macroscopic evaluation and histological study.
Results In the macroscopic evaluation we observed edema and hiperemia of the mucosa in 2 (22%) of the animals in group 1, in 0 (0%) of the animals in group 2, in 10 (100%) of the animals in group 3, and in 5 (50%) of the animals in group 4. In the protamine + KCl group and in saline + GSNO were observed similar effects on the bladder wall. The animals in group 2 (saline + polymeric) showed vascular congestion significantly smaller than the other groups after 9 days of the instillations (p=0.0035). Significant fibrosis was observed in groups 3 and 4 after 6 days (p=0.3781) and 9 days (p=0.0459) after instillations, when compared to control (group 2).
All groups presented neutrophilic infiltrate of variable intensities, 6 days after instillations (p=0.7277). After 9 days, there was a regression of the infiltrate, with no evidence of accentuated neutrophilic reaction in all the groups (p=0.2301).
Interpretation of results
The inflammatory response to bladder instillation of an aqueous solution of S-nitrousglutathione was very similar to that induced by bladder instillation of protamine and KCl.

Concluding message Instillation of an aqueous solution of S-nitrousglutathione can be considered a new model for experimental induction of interstitial cystitis.

References
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Were guidelines for care and use of laboratory animals followed or ethical committee approval obtained?	**Yes**
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