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## **TESTING THE EFFICACY OF INTRAVESICAL HYALURONIC ACID INSTILLATIONS IN THE PREVENTION OF RECURRENT URINARY TRACT INFECTIONS**

### Hypothesis / aims of study

Hyaluronic acid constitutes an important proportion of bladder surface glycosaminoglycans and represents a barrier of the urothelium that may help to prevent urinary tract infection (UTI). Damage to this layer has been postulated as a causative factor in the development of recurrent UTI. To date, few studies addressed the role of hyaluronic acid in patients with recurrent cystitis. We tested the efficacy of intravesical hyaluronic acid instillation against recurrent UTI in a contemporary group of patients referred to our Institution.

### Study design, materials and methods

Between January 2006 and January 2009, we recruited 48 fertile women with recurrent cystitis who received 8 instillations (once weekly for 8 weeks) of hyaluronic acid HA (CystistatR, Bioniche Life Sciences Inc, Belleville, Ontario, Canada) at the dose of 40 mg in 50 mL of phosphate buffered saline solution. All patients had a clinical history of recurrent cystitis, defined as at least 3 episodes of uncomplicated cystitis with clinical symptoms and a positive culture for each episode, according to the European Association of Urology guidelines. In all patients, recurrent UTIs were lasting from at least 15 months, with a frequency of 1 episode every 4-6 weeks. All patients were prospectively evaluated over an 18 months follow-up period.

### Results

Mean age was 36.91 years (range 25-48 years). The most commonly diagnosed pathogen was E. Coli (76%). After the 8-week therapy, 36 patients (75.0%) were free of their disease and did not show any clinical and cultural recurrence during the 18 months follow-up period. Conversely, 10 patients (20.8%) showed a recurrence of their disease during the follow up period. However, in this patient category, the mean time to recurrence significantly increased from 39.85 days (range 23-55 days) before treatment to 190.64 days (range 170-211 days) after treatment (*p*-value <0.001). Finally, 2 patients (4.2%) experienced a recurrence during the 8 weeks of intravesical instillations. All patients tolerated the instillations well and no serious adverse events were reported during the study period.

### Interpretation of results

Prospective randomized studies are still needed to further validate our results.

### Concluding message

Intravesical hyaluronic acid instillations appears to be a safe and feasible therapeutic option that strongly reduce the incidence of recurrent UTI in fertile women.

### References

1. Prevention of recurrent bacterial cystitis by intravesical administration of hyaluronic acid: a pilot study.
2. Prevention of recurrent urinary tract infections by intravesical administration of hyaluronic Acid and chondroitin sulphate: a placebo-controlled randomised trial.
3. Prevention of recurrent bacterial urinary tract infections by intravesical instillation of hyaluronic acid.

<b>Specify source of funding or grant</b>	none
<b>Is this a clinical trial?</b>	No
<b>What were the subjects in the study?</b>	HUMAN
<b>Was this study approved by an ethics committee?</b>	Yes
<b>Specify Name of Ethics Committee</b>	San Raffaele Hospital Ethics Committee
<b>Was the Declaration of Helsinki followed?</b>	Yes
<b>Was informed consent obtained from the patients?</b>	Yes