

# Intravesical Antibiotics Instillation For The Treatment Of Uncomplicated Recurrent Urinary Tract Infection: A Case Series

Dr. Aashee Parganiha<sup>1</sup>, Dr. Anuradha Koduri<sup>2</sup>, Dr. Nirmala Papalkar<sup>2</sup>,  
Dr. Bindupriya<sup>2</sup>

1. Dept of Urogynaecology, KIMS-Kingsway Hospital, Nagpur, India
2. Dept of Urogynaecology, KIMS Hospital, Hyderabad, India

## INTRODUCTION

- Urinary tract infection (UTI) is a common infection in women<sup>1</sup>.
- Recurrent UTI (rUTI) is defined as two episodes of symptomatic UTI proven with positive urine cultures in 6 months or 3 such episodes in 1 year<sup>2</sup>.
- Upto 60% of women develop UTI once in their lifetime, 20-40% have at least one recurrence, of whom 20-25% have multiple recurrences<sup>3</sup>.
- Current treatment strategies of rUTI include,

oral/parenteral antibiotics	D-mannose	long-term suppressive antibiotics
prophylaxis with cranberry extracts	vaginal estrogen creams in postmenopausal women	

- Long-term antibiotics are given in 3 ways

daily suppressive dose	95% decrease in rate of UTI
post-coital prophylaxis	decrease in UTI from 3.6 to 0.3 UTI/year
self-treatment at symptom onset	92% cure rate

- But, long-term antibiotics are **associated with increased cost, morbidity, allergy, adverse effects and drug resistance**. *WHO has declared antimicrobial resistance as one of the top 10 global public health threats facing humanity*<sup>4</sup>.
- Intravesical antibiotic instillation was described in the 1960s.
- Aminoglycoside bladder instillations for the prevention of bacteriuria in indwelling catheter was described by Martin and Bookrajian in 1962<sup>5</sup>.

## AIM

- To assess the result of intra-vesical antibiotic instillation in uncomplicated rUTI

## MATERIAL & METHODS

- Sample size : 8 women with uncomplicated rUTI
- Duration : 1 years
- Exclusion criteria-
  - pregnant women, infants, diabetics
  - Neurogenic bladder
  - Abnormal genitourinary anatomy
- Follow-up period: 6 - 9 months
- Validated questionnaires used for symptoms & QoL:  
PFDI-20, POPDI-6, CRADI-8, UDI-6, PFIQ-7, ICIQ-VS, ICIQ-BOTHER, PGI-I, ICIQ-SATISFACTION

### PROCEDURE DONE:

- Daily intravesical instillation of 80 mg of gentamicin in 50 ml normal saline done, after a lavage with sterile water**, for 7 days.
- Gentamicin used **based on their current/old culture-sensitivity profile**.
- 15 days after completion of treatment, **urine culture was repeated to confirm the absence of infection**.
- Patients were given local estrogen cream, cranberry extract & D-mannose prophylaxis.
- Toxicity is monitored by measuring serum creatinine** on day 3 and 7.
- Symptoms & QoL scores monitored** with validated questionnaires.

## FINDINGS

- MC presentation were frequency & dysuria f/b urgency. One pt hospitalized for urosepsis & one had ER visit for acute UTI symptoms
- Statistically significant reduction in all the symptoms noted

## FINDINGS

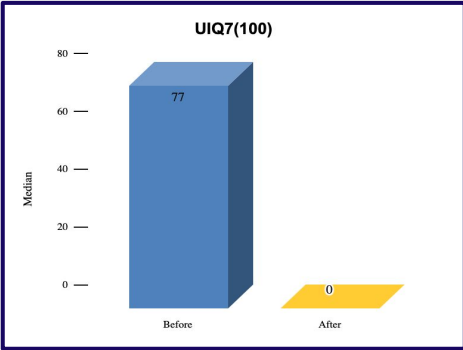
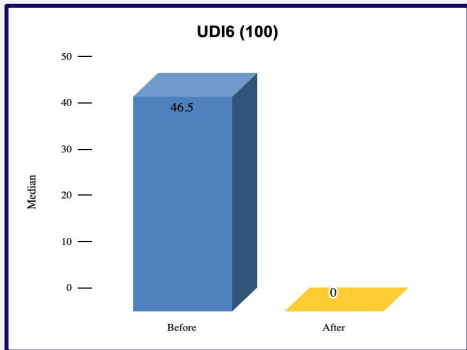
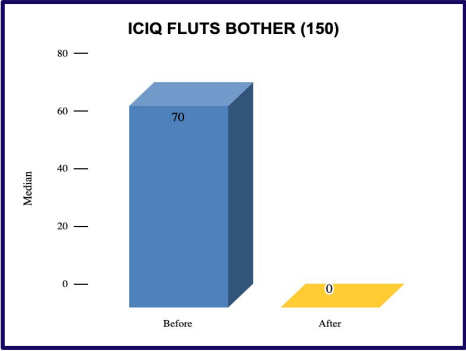
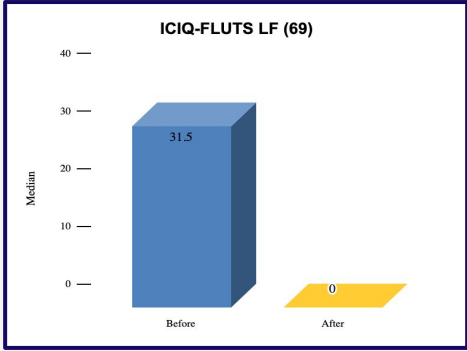
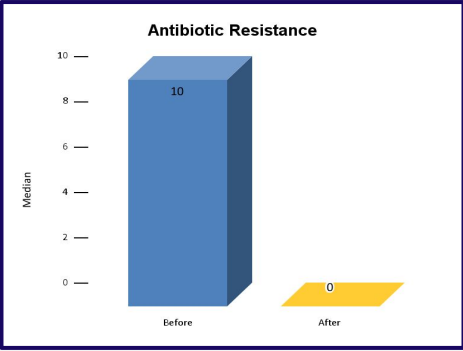
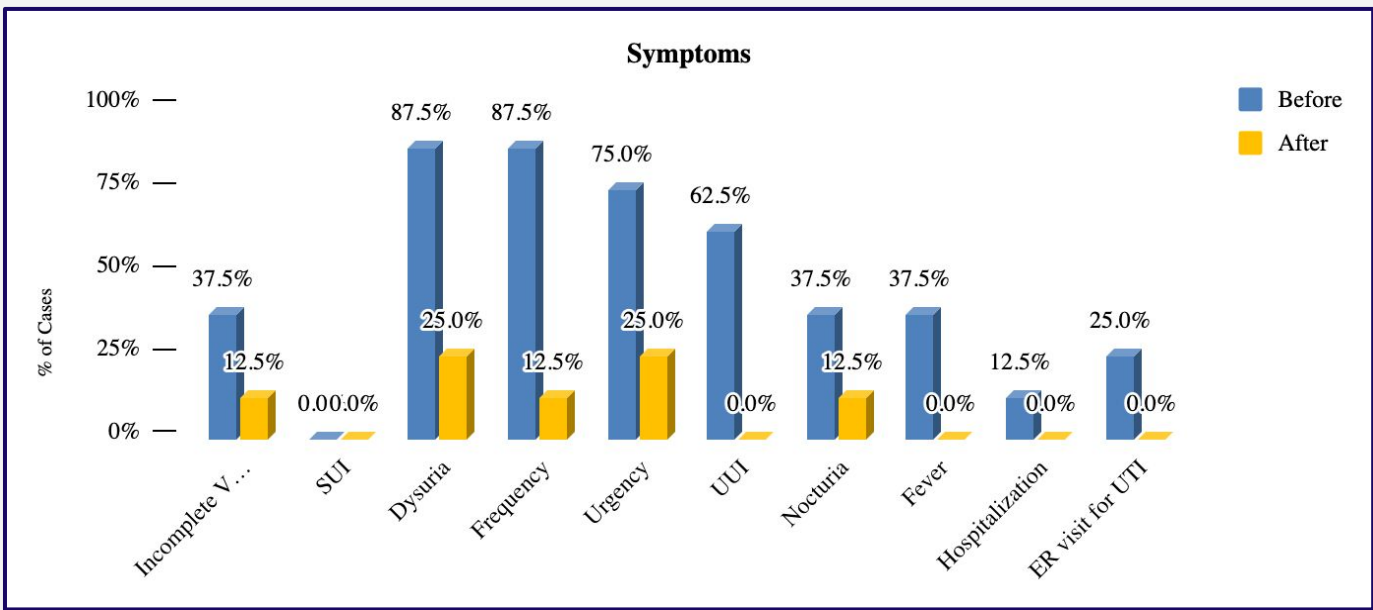
Demographic Data	
Age(mean)	59.9 ± 10.3 years
BMI(Mean)	25.8 ± 2.3 kg/m <sup>2</sup>
Parity(median)	2 (2 to 2)
Menopausal state	62.5% (5/8)
Vaginal E2	62.5% (5/8)
Sexual activity	50% (4/8)
Previous hysterectomy	37.5% (3/8)
Previous TOT	12.5% (1/8)

Clinical Data	
PVR (Median - IQR)	20(7.5 - 55) ml
Dwell time (Mean ± SD)	127.5 ± 21.21 minutes
Adverse reaction to instillation	0
POP (more than stage 1)	0
Follow - up	6 to 9 months

## RESULTS

- Median antibiotic resistance reduced from 10 to 0
- There was a statistically significant reduction in all the symptom & QoL Scores
- Median ICIQ satisfaction score - 22.5 PGI- I - 2

Observations	Before T/t	After T/t
Mean number of recurrences	2.88 ± 0.99	
UTI recurrence(mean) at 1 month		0
UTI recurrence(mean) at 2 month		0.25 ± 0.46
UTI recurrence(mean) at 6 month		0.125 ± 0.35
Number of pathogens isolated (median)	1.5(2 to 4)	
Number of pathogens isolated (median)		0(0 to 0)



## CONCLUSION

- Intravesical antibiotic instillation offers a promising therapy for the treatment of uncomplicated rUTIs in women who fail oral and parenteral antibiotic therapy.
- Future prospective studies are required to create protocols for the dosage and duration of treatments.

## REFERENCES

1. Osamwonyi B, Foley C. Management of recurrent urinary tract infections in adults. Surgery (Oxford). 2017;35:299–305.
- 2.Malik, Rena D. MD; Wu, Yuefeng (Rose) BS; Zimmern, Philippe E. MD. Definition of Recurrent Urinary Tract Infections in Women: Which One to Adopt?. Female Pelvic Medicine & Reconstructive Surgery 24(6):p 424-429, 11/12 2018. | DOI: 10.1097/SPV.0000000000000509
- 3.Mabeck, C. E. (1972). Treatment of uncomplicated urinary tract infection in non-pregnant women. *Postgraduate Medical Journal*, 48(556), 69-75. <https://doi.org/10.1136/pgmj.48.556.69>
- 4.World Health Organization (WHO). Antimicrobial Resistance. 2021. Available online: <https://www.who.int/news-room/factsheets/detail/antimicrobial-resistance>
5. MARTIN, C. M. (1962). *Bacteriuria Prevention After Indwelling Urinary Catheterization*. *Archives of Internal Medicine*, 110(5), 703. doi:10.1001/archinte.1962.03620230149020