

## Resolve mdx positive: polymicrobial

Female, age: 68 | History of complicated UTIs | 2 allergies: Contrast dye, Doxycycline | Previous treatment failures

Urine culture positive; treated with Bactrim; symptoms persisted

Resolve mdx  
Pathogens detected

Resolve mdx identified 2 pathogens and recommended 3 effective antimicrobials

Symptoms resolved successfully in 5 days

### History

5/22/2023 **Patient presents with painful urination, frequency, urgency. Positive dipstick. Urine culture ordered**

5/26/2023 **Positive urine culture; treatment prescribed; patient did not improve**

Pathogens detected: **Klebsiella pneumoniae**  
Susceptibility results: **Resistant to Ampicilin and Tetracycline**  
Treatment: **prescribed Bactrim**

6/02/2023 **Patients reports symptoms persisted**

6/06/2023 **Returned to clinic  
Resolve mdx ordered**

### Results

6/8/2023 **Pathogens detected, antibiotic recommendations provided**

Pathogens detected: **Klebsiella pneumoniae -  $2.80 \times 10^8$  CFU/mL**  
**Staphylococcus epidermidis -  $6.75 \times 10^3$  CFU/mL**

Antibiotic Resistance Genes: **none detected**

ASTX results:

- **Resistant to 17 antimicrobials, including Trimethoprim/sulfamethoxazole (Bactrim)**
- **Susceptible to 3 antimicrobials: Levofloxacin, Ofloxacin, and Gentamicin**

### Outcome

6/14/2023 **Patient prescribed Levofloxacin, symptoms successfully resolved**

Resolve mdx identified causative pathogens and provided effective therapy options  
Patient prescribed Levofloxacin, symptoms resolved within 5 days

### Case Summary

- Urine culture missed *S. epidermidis*
- Urine culture recommended ineffective antimicrobial
- Urine culture missed antimicrobial resistance
- Resolve mdx identified pathogens in polymicrobial specimen
- Resolve mdx recommended effective treatment options through whole-urine ASTX testing
- Resolve mdx helped resolve patient's infection within 5 days of treatment

Patient		Specimen		Account	
Patient Name:	██████████	Specimen #:	11261161	Physician:	██████████
Date of Birth:	██████████	Collection Date:	06/22/2023	Account:	██████████
MRN/Patient #:	██████████	Received Date:	06/24/2023	Address:	██████████
		Report Date:	06/26/2023		██████████
		Specimen Type:	Clean catch urine	City/State/Zip:	██████████
		Mdx Accession #:	RA011522		

## PATIENT RESULT: PATHOGEN(S) DETECTED

### Pathogen(s) Detected

Pathogen(s) Detected	CFU/ml
Klebsiella pneumoniae	2.80 x 10 <sup>8</sup> CFU/mL
Staphylococcus epidermidis	6.75 x 10 <sup>3</sup> CFU/mL

### Resistance Gene(s) Detected

Resistance Gene(s) Detected	Antimicrobial Resistance
No resistance gene(s) detected	-

### Patient Susceptible Antimicrobials

- Levofloxacin PO/IV
- Ofloxacin PO/IM/IV
- Gentamicin IM/IV

## Patient Susceptibility Report

#### Report Key

**S = Susceptible**    **I = Intermediate**    **R = Resistant**

**SDD = Susceptible-Dose Dependent**    **\*R = Data not patient specific**

**N/A = Detected organism has variable results**    **SNP = Susceptibility not performed**

Antimicrobial	Formulation	Antimicrobial Phenotypic Susceptibility	Supportive Data (not patient specific)	
			Klebsiella pneumoniae	Staphylococcus epidermidis
Levofloxacin	PO/IV	S	✓	✓
Ofloxacin	PO/IM/IV	S	✓	
Gentamicin	IM/IV	S	✓	✓
Nitrofurantoin	PO	I	✓	
Ciprofloxacin	PO/IV	I	✓	
Amoxicillin-clavulanate	PO	R	✓	✓
Cefaclor	PO	R	✓	✓
Cefdinir	PO	R	✓	✓
Cephalexin	PO	R	✓	✓
Linezolid	PO	R		✓
Doxycycline	PO/IV	R	✓	✓
Minocycline	PO/IV	R	✓	✓

Antimicrobial	Formulation	Antimicrobial Phenotypic Susceptibility	Supportive Data (not patient specific)	
			Klebsiella pneumoniae	Staphylococcus epidermidis
Tetracycline	PO/IV	R	✓	✓
Trimethoprim-sulfamethoxazole	PO/IV	R	✓	✓
Ampicillin	PO/IM/IV	R		✓
Cefazolin	IM/IV	R	✓	✓
Cefepime	IM/IV	R	✓	✓
Cefoxitin	IM/IV	R	✓	✓
Ceftriaxone	IM/IV	R	✓	✓
Ampicillin-sulbactam	IV	R	✓	✓
Meropenem	IV	R	✓	✓
Piperacillin-tazobactam	IV	R	✓	✓
Aztreonam	IV	*R	✓	
Fosfomycin	PO	N/A	✓	
Vancomycin	IV	N/A		✓