



## Urine-ID Case Review

- **Patient History:**  
45-year-old female patient with recurring UTI, previously treated with doxycycline.
- **Disease State:**  
Symptoms resolved for 3 weeks. Then burning and frequency of urinating returned. Initial C&S showed E. coli
- **Why This Test was Ordered:** The patient was having a severe recurring UTI that was not being resolved by a C&S.
- **Outcome:**  
Vikor report showed no presence of E. coli, but 3 bacterial pathogens over  $10^6$  and 2 more mildly pathogenic bacteria with resistance to 4 antibiotics. In addition, patient showed  $1-3$  count of BVB2 which was mildly pathogenic. Patient was prescribed Macrobid and Flagyl (following Vikor's treatment guidance) and symptoms resolved within a few days.  
This treatment was just given last week, but the patient was quickly feeling relief after several visits to her PC and then GYN. Client was impressed to see how detailed Vikor's testing was and was finally able to address this patient's symptoms.

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#39D2166771

Patient Name



Date of Birth



Gender

F



Race

UNDISCLOSED

Facility Information

**Ordering Provider:**

**Facility:**

**Facility Phone:**

**Facility Fax:**

Specimen Information

**ACC:**

**Collection Date:** 07-01-2021

**Received Date:** 07-02-2021

**Notes:**

**Report Date:** 07-03-2021





**Sample Type:** Urine Swab

**Laboratory Results**

**PATHOGENS DETECTED**

|                                  |                               |         |
|----------------------------------|-------------------------------|---------|
| Klebsiella oxytoca               | 1 x 10 <sup>6</sup> copies/uL | 33.188% |
| Klebsiella pneumoniae            | 1 x 10 <sup>6</sup> copies/uL | 33.188% |
| Enterobacter cloacae             | 1 x 10 <sup>6</sup> copies/uL | 33.188% |
| Enterococcus faecalis            | 1 x 10 <sup>4</sup> copies/uL | 0.332%  |
| Streptococcus agalactiae         | 1 x 10 <sup>3</sup> copies/uL | 0.033%  |
| Uncultured Megasphaera 1         | 1 x 10 <sup>3</sup> copies/uL | 0.033%  |
| BVAB2                            | 1 x 10 <sup>3</sup> copies/uL | 0.033%  |
| Mobiluncus curtisii and Mulieris | 1 x 10 <sup>2</sup> copies/uL | 0.003%  |

**RESISTANCE GENES DETECTED & POTENTIAL MED CLASS AFFECTED**

|                         |              |   |
|-------------------------|--------------|---|
| ermB                    | Macrolides   |    |
| tetM                    | Tetracycline |    |
| ampC, ACC, DHA, ACT/MIR | Ampicillin   |   |
| BlaSHV                  | Beta-lactams |  |

ABXAssist™

Pharmacy Guidance Provided by:



Electronically approved on 07-03-2021 by: Tamar Momo

•Email: [pharmconsult@vikorscientific.com](mailto:pharmconsult@vikorscientific.com) • Phone: 1-855-742-7635, 1-855-PharmD5

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Drug Allergies: NONE

Notes from Ordering Physician: URINE

**DISCLAIMERS:**

1. The treatment guidance listed is based on infectious disease treatment references, the organisms detected, and genes known to contribute to medication resistance. Important clinical information such as comorbidities, renal function, etc. may influence the overall appropriateness of therapy. The provided guidance only takes drug allergies into account when they are provided. The provider should take the entire clinical presentation into account when making treatment decisions. Not all detected microbes will require antimicrobial therapy as some are part of the normal flora or can be non-pathogenic colonizers.

2. Treatment options take into account individual pathogens and potential resistances detected.

**RECURRENT UTI:**

If UTI is recurrent (at least 2 UTIs in 6months or at least 3 UTIs in a year), consider combination therapy with Ceftriaxone 1G x1dose PLUS Bactrim DS or Cephalexin 500mg or Nitrofurantoin 100mg once daily at bedtime for 30 days. Be cautious of allergies.

Causative agents of Bacterial vaginosis (BV):BVAB2, Uncultured Megasphaera 1, Mobiluncus curtisii and mulieris. These are anaerobic organisms. Treat if symptomatic including symptomatic in pregnancy.

Clinician discretion whether to treat BV at low loads/percentages (Metronidazole (FLAGYL) 500mg BID x 7 days ( ok in pregnancy lower dose to 250mg q8h x7 days))

Enterococcus sp. is a part of the normal microflora, but when present at elevated levels it can be pathogenic. Treatment is recommended in symptomatic patients. Bactrim and cephalosporins are not effective. Recommended treatments are Augmentin, Nitrofurantoin (UTI), Doxycycline, Fosfomycin(UTI), Quinolones, and Linezolid. Be cautious of allergies.

**MEDICATION  
 REVIEW**

Notes from Pharmacist:

**FIRST LINE**

| Medication   | Route | Dose   |
|--|-------|--|
| sulfamethoxazole / trimethoprim  | oral  | Sulfamethoxazole/trimethoprim (BACTRIM) Double Strength: BID orally x 3-7 days for uncomplicated cystitis. BID orally x 7- 14 days for complicated cystitis. |
| <p>Considerations: Covers Klebsiella, Enterobacter. 50% dose adjustment for CrCl &lt; 30ml/min. Contraindicated CrCl &lt; 15ml/min. Avoid use in Asthma pts and pregnancy. Avoid use with Warfarin. Avoid in pts with folate deficiency. Avoid pts with sulfa allergies. Longer duration in male patients.</p> |       |  |



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SECOND LINE

nitrofurantoin

oral

Nitrofurantoin (MACROBID) 100mg orally BID x 5-7 days

Considerations: Covers Klebsiella, Enterobacter. Taking with food can reduce nausea/vomiting and increases bioavailability. Not effective in Pyelonephritis. Use caution and adjust dose CrCl < 60ml/min. Contraindicated CrCl < 30ml/min. Pregnancy category B. Contraindicated at 38-42 weeks term. Avoid G6PD. May cause brown or rust-yellow discoloration of urine.

ALTERNATIVE

ciprofloxacin

oral

Ciprofloxacin (CIPRO) 250 mg-500mg orally BID x 3-7 days for uncomplicated cystitis. 500mg orally BID x 7-14 days for complicated pyelonephritis. OR 400mg IV BID x 7 days for more serious infections.

Considerations: Covers Klebsiella, Enterobacter. Fluoroquinolones have been associated with serious and possible irreversible reactions; tendonitis/tendon rupture, peripheral neuropathy, CNS effects. These may occur all together or months after therapy. Increased risk in patients over 60 and patients on corticosteroids. Avoid in Myasthenia Gravis. Reserve for patients with no alternative therapy options for acute bacterial sinusitis, acute bacterial exacerbation of chronic bronchitis, or uncomplicated UTI. Adjust dose for CrCl <50ml/min.

OR

fosfomycin

oral

Fosfomycin (MONUROL) 3G PO single dose. For uncomplicated cystitis only.

Considerations: Covers Klebsiella, Enterobacter. Do not use in pyelonephritis Caution in renal impairment. May require Prior Auth.

|             |  |
|-------------|--|
| Methodology | The infectious disease and antibiotic resistance detection panels are tested utilizing Real-time PCR technology to detect the presence of genes associated with pathogens and antibiotic resistance via amplification of genomic DNA. Amplification and detection are performed using the Applied Biosystems™ QuantStudio™ 12K Flex Real-time PCR system, which includes the QuantStudio™ 12k Software v1.3 and Thermo Fisher Scientific TaqMan™ assays. The assays are preloaded onto TaqMan™ OpenArray plates.   |
| Limitations | This test only detects microorganisms and antibiotic resistance (ABR) genes specified in the panel. ABR genes are detected in the specimen and are not specific to a detected pathogen. ABR genes may be detected in bacterial strains not tested for in the panel.  |
| Disclaimer  | <p>The resistance genes for Ampicillin, selected Extended-Spectrum-BetaLactamases, Vancomycin, Carbapenems, Sulfonamide, Trimethoprim, Aminoglycosides and the Quinolone gyrase groupings are assays customized by pooling the individual genes listed in the associated group. If listed as positive, this indicates that at least one of the genes in the group was detected and the class of medication could have potential resistance.</p> <p>This test was developed and its performance characteristics determined by KorGene™. It has not been cleared or approved by the FDA. The laboratory is regulated under CLIA as qualified to perform high complexity testing. This test is used for clinical purposes. It should not be regarded as investigational or for research. Pharmacy guidance and recommendations therein are not under the purview of the laboratory or agencies which accredit the laboratory.</p> <p>The treatment guidance listed in the report is based on infectious disease treatment references, the organisms detected, and genes known to contribute to medication resistance. Important clinical information such as comorbidities, renal function, patient weight, platelet count, microbiology results, etc. may influence the overall appropriateness of therapy. The provided guidance only takes drug allergies into account when they are provided and available to the pharmacist making the recommendation. The overall appropriateness of therapy must be determined by the physician treating the patient. The provider has all the patient information necessary to make that determination and should take the entire clinical presentation into account when making treatment decisions. Should the treating physician wish to discuss the provided guidance, the pharmacist is available for consult at the email and phone number provided. KorGene™ is currently in the Accreditation phase by the College of American Pathologist (CAP).</p> |



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#### NEGATIVE PATHOGENS

- Acinetobacter baumannii
- Actinobaculum schaalii
- Aerococcus urinae
- Alloscardovia Omnicolens
- Atopobium vaginae
- Candida albicans
- Candida glabrata
- Candida krusei
- Candida parapsilosis
- Candida tropicalis
- Chlamydia trachomatis
- Citrobacter freundii
- Citrobacter koseri
- Corynebacterium riegelii
- Corynebacterium urealyticum
- Enterobacter aerogenes
- Enterococcus faecium
- Escherichia coli
- Gardnerella vaginalis
- HPV 16
- HPV 18
- HSV1
- HSV2
- Haemophilus ducreyi
- Morganella morganii
- Mycoplasma genitalium and Mycoplasma Hominis
- Neisseria gonorrhoeae
- Prevotella bivia
- Proteus mirabilis
- Proteus vulgaris
- Providencia stuartii
- Pseudomonas aeruginosa
- Serratia marcescens
- Staphylococcus aureus
- Staphylococcus epidermidis
- Staphylococcus saprophyticus
- Treponema pallidum (Syphilis)
- Trichomonas vaginalis
- Ureaplasma urealyticum

#### NEGATIVE RESISTANCE GENES

- aac6-1b/aacA4, ant(3), aph(A6), aac6-1b-cr
- SULL, DFRA
- CTX-M, PER-1, PER-2, VEB, blaNDM-1, OXA-1, GES
- OXA-23, OXA-40, OXA-58, OXA-72, IMP-16, NDM, blaOXA-48, OXA-48, KPC, VIM, IMP-7
- ermC, ermA
- mecA
- mcr-1
- qnrS\_Pa04646145\_s1, Gyrase A D87N\_GTT, Gyrase A S83L\_TGG, QnrA
- VanB, VanA1, VanA2

#### ANTIBIOTIC CLASS

- Aminoglycosides
- Bactrim
- Beta-lactams
- Carbapenems
- Macrolides
- Methicillin
- Polymyxins
- Quinolones
- Vancomycin

