



Urine-ID Case Review

- **Patient History:**

97-year-old male resident in Assisted Living.

- **Disease State:**

Pain while urinating, cloudy urine, and confusion. Suspected UTI, specifically from E. coli because most urine cultures previously sent in were only positive for E. coli.

- **Why This Test was Ordered:**

Male cystitis is considered complicated, so a Urine-ID was ordered to look for possibility of co-infections.

- **Outcome:**

Vikor's full Urine ID results were positive for E coli. Plus, Klebsiella oxytoca at 10^6 , Pseudomonas aeruginosa at 10^6 , Klebsiella pneumoniae at 10^6 , Enterococcus faecalis at 10^6 , Enterobacter cloacae at 10^5 and 6 Antibiotic Resistant Genes. We were able to show that Urine-ID was able to identify coinfections including a Pseudomonas infection, which due to the potential seriousness, of this type of infection, treatment should be aggressive and monitored closely for treatment effectiveness.

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Patient Name



Date of Birth

XX-XX-1927



Gender

M



Race

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Facility Information

Ordering Provider:

Facility:

Facility Phone:

Facility Fax:

Specimen Information

ACC:

Collection Date: 07-07-2021

Received Date: 07-08-2021

Notes:

Report Date: 07-09-2021

Sample Type: Urine Swab

Laboratory Results

PATHOGENS DETECTED

Klebsiella oxytoca	1 x 10 ⁶ copies/uL	23.808%
Pseudomonas aeruginosa	1 x 10 ⁶ copies/uL	23.808%
Klebsiella pneumoniae	1 x 10 ⁶ copies/uL	23.808%
Enterococcus faecalis	1 x 10 ⁶ copies/uL	23.808%
Escherichia coli	1 x 10 ⁵ copies/uL	2.381%
Enterobacter cloacae	1 x 10 ⁵ copies/uL	2.381%
Morganella morganii	1 x 10 ² copies/uL	0.002%
Enterobacter aerogenes	1 x 10 ² copies/uL	0.002%

RESISTANCE GENES DETECTED & POTENTIAL MED CLASS AFFECTED

TEM, TEM E102K, TEM R162S, TEM G238S	Class A Beta-lactams	
ermB	Macrolides	
tetM	Tetracycline	
ampC, ACC, DHA, ACT/MIR	AmpC beta lactamase	
BlaSHV	Beta-lactams	
SULL, DFRA	Bactrim	

ABXAssist™

Pharmacy Guidance Provided by:



Electronically approved on 07-09-2021 by: John Ekstrand

•Email: pharmconsult@vikorscientific.com • Phone: 1-855-742-7635, 1-855-PharmD5



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Drug Allergies:

NKDA

Notes from Ordering Physician:

SWAB

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.

MEDICATION REVIEW

Notes from Pharmacist:

Due to the potential seriousness of a Pseudomonas infection, treatment should be aggressive and monitored closely for treatment effectiveness. Treatment recommendations include quinalones, fosfomycin, cefepime, and meropenem.

Male cystitis is considered complicated. The dosing regimens in the treatment recommendations below contain dosing for complicated cystitis.

Prostatitis due to Enterococcus is more difficult to treat. Acute, mild cases with prompt response may require only 14 days of antibiotics. Chronic infection should be treated longer. Courses shorter than 4 weeks are associated with higher relapse rates. Preferred regimens are ceftriaxone, ciprofloxacin, levofloxacin, and fosfomycin

NOTE Please add CEFTRIAZONE 1g x 1 dose to the treatment recommendations below due to prostate involvement.

Due to patient allergies and/or resistance genes, treatment recommendations are very limited.

FIRST LINE

Medication

Route

Dose

ciprofloxacin

oral

500 mg BID x 10-14 days(complicated)

Considerations: (Pseudomonas, Klebsiella, Enterococcus, E. Coli, 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 tx. Increased risk in patients over 60 and pt on corticosteroids. Avoid in Myasthenia Gravis. Reserve for pts with no alternative tx options for acute bacterial sinusitis, acute bacterial exacerbation of chronic bronchitis, or uncomplicated UTI. Adjust dose for CrCl <50ml/min. Not recommended in children under 18 y/o. Not first line agent in children with complicated UTI or pyelonephritis.



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OR

fosfomycin

oral

3g q72h x 3 doses(complicated)

Considerations: (Pseudomonas, Klebsiella, Enterococcus, E. Coli, Enterobacter)

Do not use for pyelonephritis, Can be used for chronic prostatitis. Empty stomach preferred. Now available as a generic. can be used in prostatitis resistant E.coli.

SECOND LINE

meropenem / vaborbactam

intravenous

4g q8h x 7-10 days

Considerations: (Pseudomonas, Klebsiella, Enterococcus, E. Coli, Enterobacter)

Treatment option takes into account the potential resistance

Adjust dose per renal function

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. 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.
Disclaimer	This test was developed and its performance characteristics determined by Vikor Scientific™. 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. 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.



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NEGATIVE PATHOGENS

- Acinetobacter baumannii
- BVAB2
- Candida albicans
- Candida glabrata
- Candida parapsilosis
- Candida tropicalis
- Citrobacter freundii
- Enterococcus faecium
- Prevotella bivia
- Proteus mirabilis
- Proteus vulgaris
- Providencia stuartii
- Serratia marcescens
- Staphylococcus aureus
- Staphylococcus saprophyticus
- Streptococcus agalactiae
- Uncultured Megaspera 1

NEGATIVE RESISTANCE GENES

- aac6-1b/aacA4, ant(3), aph(A6), aac6-1b-cr
- 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
- CTX-M
- ermC, ermA
- mecA
- mcr-1
- QnrB, Gyrase A D87N_GTT, Gyrase A S83L_TGG, QnrA
- VanB, VanA1, VanA2

ANTIBIOTIC CLASS

- Aminoglycosides
- Beta-lactams
- Carbapenems
- ClassA Beta-lactamases
- Macrolides
- Methicillin
- Polymyxins
- Quinolones
- Vancomycin