



Antibiotics Case Studies

We are presenting you with 3 case studies. For each one, read the case history, and then click on the question and answer buttons to test your knowledge. Click on any of the 3 buttons below to view the cases. You can always press the Menu button at the bottom of the page to view another case.



Case #1



Case #2



Case #3

MENU



Case Study # 1

V.Q., a 20-year old woman with no previous history of UTI, complains of burning on urination, frequent urination of a small amount, and bladder pain. She has no fever or CVA tenderness. A clean-catch midstream urine sample shows Gram-negative rods on Gram stain. A culture and sensitivity test is ordered. Based on these findings, V.Q. is presumed to have a lower UTI.

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Case Study # 1 – Question 1

V.Q., a 20-year old woman with no previous history of UTI, complains of burning on urination, frequent urination of a small amount, and bladder pain. She has no fever or CVA tenderness. A clean-catch midstream urine sample shows Gram-negative rods on Gram stain. A culture and sensitivity test is ordered. Based on these findings, V.Q. is presumed to have a lower UTI.

What should be the goals of the treatment plan at this time?

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Case Study # 1 – Question 1, Answer

V.Q., a 20-year old woman with no previous history of UTI, complains of burning on urination, frequent urination of a small amount, and bladder pain. She has no fever or CVA tenderness. A clean-catch midstream urine sample shows Gram-negative rods on Gram stain. A culture and sensitivity test is ordered. Based on these findings, V.Q. is presumed to have a lower UTI.

What should be the goals of the treatment plan at this time?

The goals of therapy in the treatment of acute cystitis are to eradicate the infection and prevent associated complications, while at the same time minimizing adverse effects and costs associated with medication therapy.

Because resistance rates among various pathogens vary considerably among geographic areas, clinicians involved in the management of patients with UTI's must be familiar with resistance rates within the specific area in which they practice.

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Case Study # 1 – Question 2

V.Q., a 20-year old woman with no previous history of UTI, complains of burning on urination, frequent urination of a small amount, and bladder pain. She has no fever or CVA tenderness. A clean-catch midstream urine sample shows Gram-negative rods on Gram stain. A culture and sensitivity test is ordered. Based on these findings, V.Q. is presumed to have a lower UTI.

What treatment duration options are available for V.Q.?

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Case Study # 1 – Question 2, Answer

V.Q., a 20-year old woman with no previous history of UTI, complains of burning on urination, frequent urination of a small amount, and bladder pain. She has no fever or CVA tenderness. A clean-catch midstream urine sample shows Gram-negative rods on Gram stain. A culture and sensitivity test is ordered. Based on these findings, V.Q. is presumed to have a lower UTI.

What treatment duration options are available for V.Q.?

The duration of therapy for UTI's has been shortened considerably. The traditional 7 to 14 day course of antibiotic therapy now is considered excessive for most patients with uncomplicated infections.

A 3 day antibiotic treatment regimen is just as effective as a 10 day regimen in eradicating urinary tract organisms, although this is somewhat antibiotic class-specific.

Bactrim, Augmentin, and the fluoroquinolones are recommended as the preferred agents for 3 day treatment regimens.

Nitrofurantoin, sulfoanamides other than Bactrim, and tetracyclines are more appropriately reserved for longer treatment failure following regimens of shorter duration.

The choice of a specific agent should be based on geographic sensitivities as well as patient allergies and the relative cost of the agents.

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Case Study # 1 – Question 3

L.B. is a 48-year-old female, who presents with a community-acquired UTI. She has experienced a rash with Bactrim and developed acute shortness of breath while taking penicillin.

What should be the goals of the treatment plan at this time?

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Case Study # 1 – Question 3, Answer

L.B. is a 48-year-old female, who presents with a community-acquired UTI. She has experienced a rash with Bactrim and developed acute shortness of breath while taking penicillin.

What should be the goals of the treatment plan at this time?

Although the fluoroquinolones are as effective as Bactrim in the treatment of uncomplicated UTI's, they are not recommended as first-line therapy as they are very expensive and probably no more effective than conventional medications.

There are also concerns regarding the overuse of fluoroquinolones and the promotion of medication resistance among community-acquired pathogens. In this case, a fluoroquinolone is appropriate for L.B. because it will be effective and because she has experienced previous adverse reactions to penicillins and sulfas. The duration of fluoroquinolone therapy in L.B. should be three days.

It is imperative that the clinician question L.B. about other medications (both prescription and non-prescription).

Products containing magnesium, calcium, zinc, aluminum and iron significantly decrease the absorption of fluoroquinolones, and this may result in therapeutic failures.

Although the administration of these medicines can be timed to avoid the interaction, this may be inconvenient for the patient. Patients should simply avoid these products while taking fluoroquinolones

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Case Study # 2

Bacterial Vaginosis

S.D. is a 19 yr old, sexually active female with a one week history of a moderate vaginal discharge that has a “fishy” odor, most notable after intercourse. She has no complaints of vaginal pruritus or burning. On examination, the discharge appears gray, homogeneous, and is notably malodorous. A diagnosis of bacterial vaginosis is made.

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Case Study # 2, Question 1

Bacterial Vaginosis

S.D. is a 19 yr old, sexually active female with a one week history of a moderate vaginal discharge that has a “fishy” odor, most notable after intercourse. She has no complaints of vaginal pruritus or burning. On examination, the discharge appears gray, homogeneous, and is notably malodorous. A diagnosis of bacterial vaginosis is made.

What is the appropriate treatment for bacterial vaginosis?

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Case Study # 2, Question 1 - Answer

Bacterial Vaginosis

S.D. is a 19 yr old, sexually active female with a one week history of a moderate vaginal discharge that has a “fishy” odor, most notable after intercourse. She has no complaints of vaginal pruritus or burning. On examination, the discharge appears gray, homogeneous, and is notably malodorous. A diagnosis of bacterial vaginosis is made.

What is the appropriate treatment for bacterial vaginosis?

Metronidazole 500mg bid for 7 days is the most effective treatment

85% of women remain well six weeks after completion of therapy

Clindamycin cream 2% at bedtime for seven days or Metronidazole 0.75% gel bid for 5 days are topical recommendations

Alternatively, the CDC recommends Metronidazole 2g orally in a single dose

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Case Study # 2, Question 2

Bacterial Vaginosis

S.D. is a 19 yr old, sexually active female with a one week history of a moderate vaginal discharge that has a “fishy” odor, most notable after intercourse. She has no complaints of vaginal pruritus or burning. On examination, the discharge appears gray, homogeneous, and is notably malodorous. A diagnosis of bacterial vaginosis is made.

What patient instructions should be explained when dispensing clindamycin cream?

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Case Study # 2, Question 2 - Answer

Bacterial Vaginosis

S.D. is a 19 yr old, sexually active female with a one week history of a moderate vaginal discharge that has a “fishy” odor, most notable after intercourse. She has no complaints of vaginal pruritus or burning. On examination, the discharge appears gray, homogeneous, and is notably malodorous. A diagnosis of bacterial vaginosis is made.

What patient instructions should be explained when dispensing clindamycin cream?

Clindamycin cream is oil-based and may weaken latex condoms or diaphragms.

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Case Study # 3

Genital Herpes

B.J., a 28 yr old, sexually active male, complains of painful penile lesions and tender inguinal adenopathy. The lesions are vesicular and limited to the scrotum and shaft of the penis. The onset of the lesions was preceded by a one week period of fever, malaise, headache, and itching. Viral cultures of the lesions were positive for herpes simplex virus.

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Case Study # 3, Question 1

Genital Herpes

B.J., a 28 yr old, sexually active male, complains of painful penile lesions and tender inguinal adenopathy. The lesions are vesicular and limited to the scrotum and shaft of the penis. The onset of the lesions was preceded by a one week period of fever, malaise, headache, and itching. Viral cultures of the lesions were positive for herpes simplex virus.

How should B.J.'s lesions be treated?

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Case Study # 3, Question 1 - Answer

Genital Herpes

B.J., a 28 yr old, sexually active male, complains of painful penile lesions and tender inguinal adenopathy. The lesions are vesicular and limited to the scrotum and shaft of the penis. The onset of the lesions was preceded by a one week period of fever, malaise, headache, and itching. Viral cultures of the lesions were positive for herpes simplex virus.

How should B.J.'s lesions be treated?

1. Advise client to abstain from sexual contact while lesions are present
2. Advise client to use latex condoms during asymptomatic periods to avoid transmission
3. Prescribe acyclovir 400mg po tid for 7-10 days for first clinical episode
4. Prescribe acyclovir 400mg po tid for 5 days for recurrent episodes
5. Prescribe acyclovir 400mg po bid for daily suppressive therapy

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Case Study # 3, Question 2

Genital Herpes

B.J., a 28 yr old, sexually active male, complains of painful penile lesions and tender inguinal adenopathy. The lesions are vesicular and limited to the scrotum and shaft of the penis. The onset of the lesions was preceded by a one week period of fever, malaise, headache, and itching. Viral cultures of the lesions were positive for herpes simplex virus.

What adverse effects secondary to acyclovir, famciclovir or valacyclovir should be anticipated?

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Case Study # 3, Question 2 - Answer

Genital Herpes

B.J., a 28 yr old, sexually active male, complains of painful penile lesions and tender inguinal adenopathy. The lesions are vesicular and limited to the scrotum and shaft of the penis. The onset of the lesions was preceded by a one week period of fever, malaise, headache, and itching. Viral cultures of the lesions were positive for herpes simplex virus.

What adverse effects secondary to acyclovir, famciclovir or valacyclovir should be anticipated?

The renal system may be affected

- Hematuria
- Increase in BUN
- Increase in creatinine.

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Case Study # 3, Question 3

Genital Herpes

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What topical agents should be avoided in patients with genital herpes?

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Case Study # 3, Question 3 - Answer

Genital Herpes

B.J., a 28 yr old, sexually active male, complains of painful penile lesions and tender inguinal adenopathy. The lesions are vesicular and limited to the scrotum and shaft of the penis. The onset of the lesions was preceded by a one week period of fever, malaise, headache, and itching. Viral cultures of the lesions were positive for herpes simplex virus.

What topical agents should be avoided in patients with genital herpes?

- Topical local anesthetics should be avoided because they counteract efforts to keep the lesions dry.
- Topical corticosteroids may predispose the patient to secondary bacterial infections.

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