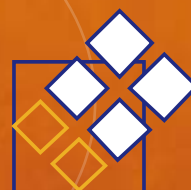


Laboratory Investigation of
UTI
Quiz Feedback



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Laboratory Investigation of **UTI** Quiz Feedback

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Laboratory Investigation of UTI Quiz

1. A 32 year-old woman presents with dysuria and frequency. She says she has a UTI and gets about one per year. There are no complicating factors. The practice nurse reports that a dipstick urinalysis is negative. Select any of the following actions you would take?

 - Repeat urinalysis
 - Urine culture and sensitivities
 - Treat empirically
 - Await culture results before starting treatment
2. A 42 year-old women presents with dysuria, frequency, and urgency. She has a temperature of 39.0°C and loin tenderness. A dipstick urinalysis is positive for leukocytes and blood. She does not appear toxic. Select any of the following actions you would take?

 - Repeat urinalysis
 - Urine culture and sensitivities
 - Treat empirically
 - Await culture results before starting treatment
3. A 39 year-old man presents with dysuria, frequency, and urgency. Select any of the following actions you would take?

 - Dipstick urinalysis
 - Urine culture and sensitivities
 - Treat empirically
 - Await culture results before starting treatment
4. A 22 year-old women presents with dysuria. Dipstick urinalysis tests positive for leukocytes. Select any of the following actions you would take?

 - Treat empirically
 - Urine culture and sensitivities
 - Request Chlamydia test
 - Only request Chlamydia if symptoms do not resolve
5. An 82 year-old female rest home resident grew pseudomonas and proteus on urine culture, otherwise she is well. The MSU had been taken as follow up to bacteriuria noted 9 months ago. Select any of the following actions you would take?

 - Provide antibiotic treatment
 - No antibiotic treatment
 - Urinalysis
 - Repeat urine culture and sensitivities
6. A 75 year-old women has less bladder control in the last few weeks, and wonders if this is part of aging. On examination you find she has a temperature of 38°C. Select any of the following actions you would take?

 - Treat empirically
 - Urine culture and sensitivities
 - Dipstick urinalysis
 - Await culture results before starting treatment
7. A 42 year-old women presents to you with classical symptoms of UTI. You note this is the fourth UTI she has had in the past 12 months. Select any of the following actions you would take?

 - Dipstick urinalysis
 - Treat empirically
 - Urine culture and sensitivities
 - Await culture results before starting treatment
8. A 47 year-old man has an indwelling catheter that has been in place for the last 6 months. His urine has been cloudy in the past few days, but he remains well. Select any of the following actions you would take?

 - Dipstick urinalysis
 - Treat empirically
 - Urine culture and sensitivities
 - Await culture results before starting treatment

We are sorry you did not return a quiz to us. This group of scenarios were designed to demonstrate the range of situations encountered when investigating a UTI.

Please let us know if there is any way we can make our case studies more useful to you. We want our resources to be helpful with your day-to-day clinical practice. We would be pleased to receive any suggestions that you have.

If you have any questions please email these to us and we will answer via the 'Your Questions Answered' section of our web site.

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Responses from colleagues, GP Panel and specialist

1. A 32 year-old woman presents with dysuria and frequency. She says she has a UTI and gets about one per year. There are no complicating factors. The practice nurse reports that a dipstick urinalysis is negative. Select any of the following actions you would take?

	You	Your Peers	GP Panel
Repeat urinalysis		4 %	
Urine culture and sensitivities		12 %	
Treat empirically		90 %	+
Await culture results before starting treatment		7 %	

GP Panel: Most respondents would treat this woman empirically. This is appropriate as her symptoms are typical of uncomplicated UTI and neither urinalysis nor urine culture is necessary before treatment. The panel did feel urinalysis would be useful if the symptoms were not clear-cut. Urinalysis may be negative for nitrites if the causative organism is not nitrate-reducing.

Women with minor symptoms may choose to avoid antibiotic treatment as many uncomplicated UTIs in women will resolve spontaneously.

The panel would feel more comfortable if previous episodes of UTI had been recorded in the clinical notes and had responded to treatment. They would also like to ask about symptoms of vulvovaginitis and exposure to risk of sexually transmitted infections.

Dr Dee Mangin: As indicated by most GPs, empiric treatment is appropriate in this instance. Evidence shows that trimethoprim reduces the duration of dysuria in women with symptoms of uncomplicated urinary tract infection and negative dipstick result by a median time of 2 days. This is despite negative MSU results so culture and sensitivity are not helpful unless the diagnosis is uncertain. Dipstick results predict absence of infection on laboratory testing in this situation but neither predict response to treatment. The NNT is 4. This effect is independent of patient or illness characteristics and past history. All patients with a positive sexual history should be tested for chlamydia as well.

2. A 42 year-old women presents with dysuria, frequency, and urgency. She has a temperature of 39.0°C and loin tenderness. A dipstick urinalysis is positive for leukocytes and blood. She does not appear toxic. Select any of the following actions you would take?

	You	Your Peers	GP Panel
Repeat urinalysis		3 %	
Urine culture and sensitivities		96 %	+
Treat empirically		95 %	+
Await culture results before starting treatment		<1 %	

GP Panel: This woman has pyelonephritis and needs an MSU with initiation of antibiotic treatment immediately. Results of the MSU will allow a change to a more appropriate antibiotic if required.

Dr Dee Mangin: Initial antibiotic choice may need modifying if the patient has received antibiotics in the previous month.

3. A 39 year-old man presents with dysuria, frequency, and urgency. Select any of the following actions you would take?

	You	Your Peers	GP Panel
Dipstick urinalysis		43 %	
Urine culture and sensitivities		96 %	+
Treat empirically		88 %	+
Await culture results before starting treatment		5 %	

GP Panel: A urine culture is always performed when a man has symptoms of UTI because UTI in men is always considered complicated. Because it is unusual and often accompanied by a degree of urinary obstruction, for example by prostatic hypertrophy, or impaired defences against infection. Most respondents would perform urine culture.

Most respondents would also commence empirical treatment before the results of the culture became available. This is appropriate because there is a risk of ascending infection. In addition, early relief of symptoms is appreciated by the patient.

Many respondents would perform a urinalysis. This may be helpful if the diagnosis is in doubt. In particular the panel were concerned about missing chlamydia and would take an appropriate sexual history. A positive sexual history or a urinalysis negative for nitrites would swing the panel toward investigating for chlamydia in addition to performing an MSU.

Dr Dee Mangin: These are appropriate responses. A urine culture should always be performed as this is a complicated UTI. If there is a positive sexual history STI screening should also be performed regardless of dipstick result or presence of a UTI as both can coexist. The data on the positive predictive value of a dipstick urinalysis is much less reliable in this situation.

4. A 22 year-old women presents with dysuria. Dipstick urinalysis tests positive for leukocytes. Select any of the following actions you would take?

	You	Your Peers	GP Panel
Treat empirically		83 %	+
Urine culture and sensitivities		28 %	
Request Chlamydia test		61%	+/-
Only request Chlamydia if symptoms do not resolve		29 %	

GP Panel: The presentation of dysuria with leukocytes could be due to UTI, as well as other conditions including Chlamydia, herpes or vulvovaginitis. The panel would like to have more details of the patient's sexual history. If this was negative they would tend to treat empirically, although if the sexual history revealed risk factors they would include Chlamydia testing.

Dr Dee Margin: Empiric treatment is quite appropriate. It appears some would do both MSU and treat empirically. If there is diagnostic uncertainty and the plan is to wait and treat after results are available, culture and sensitivities may be helpful. However if empiric treatment has already been initiated requesting culture and sensitivities does not make sense as it will not change clinical management. In addition all women with a positive sexual history should be screened for chlamydia as the risk factors for both conditions overlap and the conditions may coexist.

5. An 82 year-old female rest home resident grew pseudomonas and proteus on urine culture, otherwise she is well. The MSU had been taken as follow up to bacteriuria noted 9 months ago. Select any of the following actions you would take?

	You	Your Peers	GP Panel
Provide antibiotic treatment		5 %	
No antibiotic treatment		88 %	+
Urinalysis		2 %	
Repeat urine culture and sensitivities		12 %	+/-

GP Panel: Asymptomatic bacteriuria occurs frequently in elderly women and is not associated with increased morbidity. There is no benefit in searching for it.

The problem is what to do if asymptomatic bacteriuria is discovered. Do you treat it or keep an eye on it? Leaving the bacteriuria alone is unlikely to cause any problems and treating it exposes the patient to adverse effects of medication and increased risk of growing resistant organisms.

The panel would only choose the option "no antibiotic treatment" but acknowledged there may be some pressure to keep an eye on things by repeating the MSU.

Dr Dee Mangin: The goal of treatment in UTI is symptom relief. If there are no symptoms it does not make sense to treat, particularly in the rest home environment where antibiotic resistance is a particular concern. If there are no symptoms it also does not make sense to perform further investigations which then may become self perpetuating and, if there are no symptoms, of no benefit to the patient. There is some evidence from a randomised controlled trial that cranberry juice reduces the incidence of asymptomatic bacteriuria in this population.

6. A 75 year-old women has less bladder control in the last few weeks, and wonders if this is part of aging. On examination you find she has a temperature of 38°C. Select any of the following actions you would take?

	You	Your Peers	GP Panel
Treat empirically		72 %	+
Urine culture and sensitivities		87 %	+
Dipstick urinalysis		42 %	+
Await culture results before starting treatment		16 %	

GP Panel: The GP panel would consider other causes of her increased temperature, such as a URTI. If there were no obvious causes of her symptoms they would perform a dipstick urinalysis. If this was positive they would have a low threshold for requesting urine culture and sensitivities. Treating empirically would depend on how suspicious the panel was of a UTI, and how bothersome the symptoms were for the patient.

De Dee Mangin: No further comments

7. A 42 year-old women presents to you with classical symptoms of UTI. You note this is the fourth UTI she has had in the past 12 months. Select any of the following actions you would take?

	You	Your Peers	GP Panel
Dipstick urinalysis		28 %	
Treat empirically		87 %	+
Urine culture and sensitivities		93 %	+/-
Await culture results before starting treatment		6 %	

GP Panel: Four UTIs in the last 12 months is not uncommon but would alert the panel to re-consider the aetiology of the recurrences. They would certainly treat her empirically but would also consider an MSU and a further history. When a woman has more than three UTIs in a year the UTIs then become classified as complicated and urine culture and sensitivities are indicated. The panel did comment that if the woman has responded well in the past to antibiotics, requesting culture would not change treatment.

Dr Dee Mangin: Empiric treatment and MSU for culture and sensitivities are indicated as this is a complicated UTI. If the woman has received an antibiotic in the past month then a different first line antibiotic should be considered. In addition a sexual history should be taken and a positive history should prompt chlamydia testing. The various options for prophylactic treatment could be discussed including cranberry juice (For every 10 women taking cranberry juice in this situation one less will have a UTI) – see the BPAC material on laboratory investigation of UTI for more details.

8. A 47 year-old man has an indwelling catheter that has been in place for the last 6 months. His urine has been cloudy in the past few days, but he remains well. Select any of the following actions you would take?

GP Panel: The panel would not select any of the above actions. All indwelling catheters eventually become colonised with bacteria, so screening or treating asymptomatic bacteria is not indicated.

	You	Your Peers	GP Panel
Dipstick urinalysis		13 %	
Treat empirically		7 %	
Urine culture and sensitivities		35 %	
Await culture results before starting treatment		31 %	

Dr Dee Mangin: No further comments

Specialist Summary

Dr Dee Mangin

The goal of treatment of uncomplicated UTI is symptom relief not microbiological cure. Many healthy patients have asymptomatic bacteriuria and many women with symptoms of dysuria and frequency have negative MSU culture and sensitivity.

Empiric treatment is appropriate for all presentations of uncomplicated UTI. Evidence now indicates that treatment with antibiotics is helpful in reducing symptom duration in dipstick negative MSU negative women as well as those with proven UTI. MSU should always be sent for culture and sensitivity testing in complicated UTI.

UTI and STI have similar risk factors – sexual activity for UTI and unprotected sexual activity for STI. Chlamydia and UTI can coexist - chlamydia infection can be asymptomatic – so all women with a sexual history that indicates they are at risk for STI should be screened for chlamydia regardless of the likelihood of UTI.

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