

## P13 Clinical microbiology II

### Task 1: Search for respiratory pathogens in practical microbiology

With help of your teacher and the slideshow, describe following picture. Use the knowledge from this picture in following two tasks (Task 2 and Task 3)

possible pathogen: \_\_\_\_\_

disc containing \_\_\_\_\_

possible pathogens: \_\_\_\_\_

disc containing \_\_\_\_\_ and \_\_\_\_\_

possible pathogen (tiny, colourless, haemolysis) \_\_\_\_\_

possible pathogen (something larger, white, haemolysis) \_\_\_\_\_

Common pharyngeal flora mostly consists of

a) \_\_\_\_\_ appearance: \_\_\_\_\_

b) \_\_\_\_\_ appearance: \_\_\_\_\_

line of \_\_\_\_\_ because of \_\_\_\_\_

### Task 2: Case A

For this casuistic, documented by a the order form, try to examine corresponding sample (sputum), to find a pathogen and to make a conclusion and interpretation. Step by step, fill in the individual fields in the „screen of laboratory information system“

Kód pojistovny 1 1 1	požaduje díl A	IČP 7 2 1 2 3 4 5 6 Odbornost 7 8 9	Datum 1 5 1 2 0 8	Čís. dokladu	Poř. č.
<b>POUKAZ NA VYŠETŘENÍ / OŠETŘENÍ</b>					
Pacient Linda Green		IČP			
Č. pojistěnce *1932		Odbornost			
Variabilní symbol		Var. symbol			
Odeslán ad:		Datum			
		Kód			
		Poč.			
Kód náhrady		1			
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		14			
<p><b>Požadováno:</b></p> <p style="font-size: 1.2em; text-align: center;">sputum for bacteriological examination</p>					
<p><b>Poznámka:</b></p> <div style="border: 1px solid black; padding: 5px; display: inline-block;"> <p>72 Dr. Michal Teplý 123 generální praktičtí lékař 456 Kompostová 8, Brno</p> </div> <p>_____ razítko a podpis lékaře</p>					
<p>Dne: _____</p> <p>_____</p> <p>razítko a podpis</p>					
VZP-06w/1999					

Patient: Linda Green *1932 Dg.: Pneumonia					
Specimen: Sputum			Ordered by: Dr. Microbe Terrible		
Bacterium A: description	Conclusion:	Interpretation	Microscopy result: Epithelial cells: WBCs: Bacteria (describe):		
Bacterium B: description	Conclusion:	Interpretation			
Bacterium C: description	Catalase	10 % NaCl	Hyaluronidase	Conclusion:	Interpretation
Antibiotic susceptibility test (bacterium C)			Final conclusion and recommendation for treatment:		

**a) Microscopy of sputum**

Look at the smear prepared of your specimen. Try to find individual objects (bacteria, host cells). Fill in the field „Microscopy“:

- +++ = more than 10 in the observation area
- ++ = less than 10 in the observation area
- + = only rare (one or less per an observation area)
- 0 = none

**b) Description of bacteria**

On blood agar, describe size, colour and haemolytical properties of given bacteria. Do not describe other characteristics. Take into account, that there was no growth visible on Endo agar. Bacteria A and B should be bacteria considered to be parts of normal flora. Bacterium C will be a pathogenic bacterium, that will be more tested in parts c) and d)

**c) More tests**

Fill in the results of catalase test, hyaluronidase test and growth on blood agar with 10 % NaCl for Bacterium C.

**d) Antibiotic susceptibility**

Fill in the antibiotic susceptibility test for Bacterium C. Write down allways name of antibiotic and „S“ or „R“ (susceptible or resistant). Reference zones are written on your table.

**e) Final conclusion**

Try to formulate several words for general practitioner. Especially try to find out (with help of your teacher) what antibiotics among susceptible ones would be the best antibiotic of choice.

**Task 3: Case B**

Also for this casuistic, documented by a the order form, try to examine corresponding sample (throat swab), to find a pathogen and to make a conclusion and interpretation. Step by step, fill in the individual fields in the „screen of laboratory information system“. The way of doing it is like in previous task.

Kód pojistovny 1 1 1	požaduje díl A	IČP 7 2 1 2 3 4 5 6	Datum	Čís. dokladu	Poř. č.						
		Odbornost 7 8 9	1 5 1 2 0 8	provedl díl B							
<b>POUKAZ NA VYŠETŘENÍ / OŠETŘENÍ</b>											
Pacient	Martin Blue										
Č. pojistěnce	*1991	accute tonsilitis, 38.8 °C									
Variabilní symbol											
Odeslán ad:		Kód náhrady									
Požadováno:	throat swab for bacteriological examination										
Poznámka:	<table border="1"> <tr> <td>72</td> <td>Dr. Microbe Terrible</td> </tr> <tr> <td>123</td> <td>general practitioner</td> </tr> <tr> <td>456</td> <td>Compositive 8, Brno</td> </tr> </table>					72	Dr. Microbe Terrible	123	general practitioner	456	Compositive 8, Brno
72	Dr. Microbe Terrible										
123	general practitioner										
456	Compositive 8, Brno										
	<table border="1"> <tr> <td>Dne:</td> <td></td> </tr> </table>					Dne:					
Dne:											
VZP-06x/1999	razítko a podpis										

Patient: Martin Blue *1991 Dg.: Accute tonsilitis						
Specimen: Throat swab Ordered by: Dr. Microbe Terrible						
Bacterium A: description	Conclusion:		Interpretation			
Bacterium B: description	Conclusion:		Interpretation			
Bacterium C: description	Cata-lase	Bile-aesc.	PYR	CAMP	Conclusion:	Interpretation
Antibiotic susceptibility test (bacterium C)				Final conclusion and recommendment for treatment:		

**Task 4: Case C**

Only for General Medicine students

**Task 5: Case D**

In case of cystitis, there is one difference: the urine is examined (semi)quantitatively. Before solving the problem, try to fill in the following table (for finding of one only species).

Number of colonies on agar	Number of bacteria in one microliter (μl)	Number of bacteria in one milliliter (ml)	Interpretation
<10			
10–100			
>100			

Kód pojistovny 1 1 1	požaduje díl A	IČP 7 2 1 2 3 4 5 6	Datum 1 5 1 2 0 8	Čís. dokladu	Poř. č.
<b>POUKAZ NA VYŠETŘENÍ / OŠETŘENÍ</b>				provedl díl B	
Pacient	Carolina Red				
Č. pojištěnce	*1952		Dg.: acute cystitis		
Variabilní symbol					
Odeslán ad:	Kód náhrady				
<b>Požadováno:</b>					
urine (normal sampling) for bacteriological examination					
<b>Poznámka:</b>					
72 123 456	Dr. Microbe Terrible generální praktičtí lékař Kompostová 8, Brno				
VZP-06x/1999			Dne:		
			razítko a podpis		
				IČP	
				Odbornost	
				Var. symbol	
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Results of Enterotest 16: *E. coli*, PP 99,9 %

Patient: Carolina Red *1952 Dg.: acute cystitis			
Specimen: normal urine Ordered by: Dr. Microbe Terrible			
Growth on Blood agar:	Growth on Endo agar:	Conclusion:	Interpretation
Quantity:	Enterotest 16 result:		
Antibiotic susceptibility test	Final conclusion and recommendation for treatment:		