LifeLabs Medical Laboratory Services

Vancouver Island Physicians' Newsletter

June 2008

Dr. Q's Question of the Month

What is the significance of a metamyelocyte or myelocyte in the peripheral blood?

Fecal Occult Blood Cards

As many physicians may have noticed, there is a high rate of patient recalls for fecal occult blood testing. The most common reasons are inadequate sample quality (*e.g.* application of sample to incorrect side of card) and the use of expired cards originating from doctors' offices. In an effort to improve service for this test, LifeLabs will provide fecal occult blood cards with verbal and written instructions **directly to the patient**. The goal is to ensure that patients are provided with valid sampling cards as well as the correct instructions for their use.

Dr. Jan Palaty, Clinical Biochemist

New stool collection kits for *Clostridium difficile* toxin testing

C. difficile is an important cause of diarrhea that is commonly antibiotic associated but has also recently been associated with community-acquired diarrhea without a history of antibiotic use. Recent outbreaks of *C. difficile*-associated diarrhea (CDAD) have also been associated with a new strain of the organism that appears to be both more virulent and more easily transmitted. Accordingly, accurate diagnosis of CDAD is more important than ever before. The most commonly used method for laboratory diagnosis of CDAD involves the detection of *C. difficile* toxins in stool specimens, and we are changing our specimen collection procedures in order to optimize detection of *C. difficile* toxins.

Starting in **July 2008**, LifeLabs BC will be making a change to the way stool samples for *C. difficile* toxin are collected and stored. Until now *C. difficile* testing was done on the same specimen used for culture of other enteric pathogens. However, the toxins of *C. difficile* are most stable at 4°C whereas specimens for culture of other pathogens should be kept at room temperature. Accordingly, we will now ask patients to place stool samples in a separate, dedicated vial for *C. difficile* toxin testing in addition to the vials currently collected for bacterial culture and ova and parasite examination. The vial for *C. difficile* testing will be stored and transported at 4°C whereas the other two vials will be stored and transported at room temperature.

To support this change, we have updated our stool sample collection instructions. The new instructions will be available on the LifeLabs website, in our client manual and will be inserted into stool collection kits.

We will be providing new *C. difficile* stool collection kits at our Patient Service Centres along with the regular two vial collection kits for C&S/O&P. *C. difficile* testing is not automatically done when you order a stool culture, so if you suspect your patient has antibiotic-associated diarrhea (AAD), *C. difficile*-associated diarrhea (CDAD) or pseudomembranous colitis please clearly indicate your request for *C. difficile* testing on the requisition.

Starting in July, the new kits will also be available to order through our Physician Supplies Service. If you currently stock stool collection containers in your office, please contact 604-412-4481 for this additional kit.

Although kits are available for physicians' offices, we encourage you to send your patients to one of our Patient Service Centres for collection kits. Our staff can ensure patients are provided with the most up to date supplies and instructions. They will also be able to answer patient questions and ensure a 24 hour time separation between serial collections.

Dr. Michael T. Kelly, Medical Microbiologist
Janice Bittante, Microbiology Technical Supervisor

Pseudomembranous colitis

Courtesy of Gregory G. Ginsberg, MD, University of Pennsylvania

Answer to Dr. Q's Question

These are normal earlier precursors of neutrophils. They may be seen in the peripheral blood in small numbers in association with infections or inflammation. The absolute neutrophil count may vary but commonly neutrophilia is noted. We tend to describe this feature as "left shift" of the maturation of neutrophils. Left shift of neutrophils can also be seen in pregnancy, hypoxia, shock, in the recovery phase following chemotherapy treatment and following recombinant growth factor treatment.

Dr. Ekram Zayed, Hematopathologist

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Vancouver Island Antibiograms
January 1, 2007 – December 31, 2007

The following antibiograms are profiles of antimicrobial susceptibility testing results of the most commonly reported respiratory tract, skin and soft tissue and urinary tract pathogens submitted to **LifeLabs**. The information in the antibiograms is to be used only as a guide, and we emphasize that culture and susceptibility testing are required for accurate determination of etiology and antimicrobial susceptibility.

Respiratory Tract Pathogens

ORGANISM	Number of isolates tested	ANTIBIOTIC (% susceptible)												
		Ampicillin	Azithromycin	Ceftazidime	Cefuroxime	Ciprofloxacin	Clarithromycin	Erythromycin	Gentamicin	Levofloxacin	Penicillin	Piperacillin	Tetracycline	TMX*
Haemophilus influenzae	179	84			98		88				R		99	85
Pseudomonas aeruginosa	87	R	R	92	R	81	R	R	86		R	95	R	R
Moraxella catarrhalis[1]	86										R			
Streptococcus pneumoniae	66	84	67				67	67	R	96	84		69	69

[1]Susceptibility testing for *Moraxella catarrhalis* is not routinely performed. Most clinical isolates of *M. catarrhalis* are resistant to amoxicillin but are generally susceptible to amoxicillin-clavulanate, macrolides, trimethoprim-sulfamethoxazole, quinolones, cefuroxime, cefixime, and ceftriaxone.

Skin and Soft tissue Pathogens

ORGANISM	Number of isolates tested	ANTIBIOTIC (% susceptible)												
		Ampicillin	Azithromycin	Ceftriaxone	Cephalothin/ Cephalexin	Ciprofloxacin	Clarithromycin	Clindamycin	Cloxacillin	Erythromycin	Levofloxacin	Penicillin	Tetracycline	TMX*	Vancomycin
Streptococcus group A	51	100	90	100	**		90	90		90	100	100		R	100
Staphylococcus aureus (MSSA)	3286				100				100	82			96		
Staphylococcus aureus (MRSA)	924	R		R	R	10		79	R	7		R	95	97	100

Please note: Antimicrobial susceptibility testing for Streptococcus group A is not routinely performed but was performed at physician's request.

** Streptococcus group A isolates that are susceptible to penicillin can be considered susceptible to cephalothin/cephalexin.

MSSA = Methicillin-susceptible *Staphylococcus aureus*; **MRSA** = Methicillin-resistant *Staphylococcus aureus*

Urinary Tract Pathogens

ORGANISM	Number of isolates tested	ANTIBIOTIC (% susceptible)								
		Ampicillin	Cephalothin/ Cephalexin	Ciprofloxacin	Gentamicin	Nitrofurantoin	Tetracycline	TMX*	Ceftazidime	Piperacillin
Escherichia coli	11052	65	55	83	95	96	78	82		
Enterococcus spp.	1856	99.7	R	73		97	21	R	R	
Streptococcus group B[1]	1439				R			R		
Klebsiella pneumoniae	1142	R	95	97	99	30	89	94		
Staphylococcus saprophyticus[2]	553									
Proteus spp.	534	85	92	91	92	R	R	89		
Pseudomonas aeruginosa	268	R	R	73	85	R	R	R	94	99
Klebsiella oxytoca	200	R	88	99.5	99.5	66	95	97		

[1]Antimicrobial susceptibility testing is not routinely performed on urine isolates of Streptococcus group B because such infections usually respond to antibiotics commonly used to treat uncomplicated urinary tract infections, such as ampicillin, cephalosporins and nitrofurantoin. Susceptibility to fluoroquinolones is variable.

[2]Antimicrobial susceptibility testing is not routinely performed on urine isolates of *Staphylococcus saprophyticus* because such infections usually respond to antibiotics commonly used to treat uncomplicated urinary tract infections, such as trimethoprim-sulfamethoxazole, nitrofurantoin and fluoroquinolones.

90-100% of isolates are susceptible to the antibiotic indicated **(GOOD CHOICE)**
21-89% of isolates are susceptible to the antibiotic indicated **(INTERMEDIATE CHOICE)**
0-20% of isolates are susceptible to the antibiotic indicated **(POOR CHOICE)**
R The organism is inherently resistant to the antibiotic indicated **OR** is not recommended due to poor clinical response and/or poor activity
Antimicrobial susceptibility testing not performed

***TMX** = Trimethoprim-Sulfamethoxazole

Dr. Colette Pienaar, Medical Microbiologist; Cathie Morrison, RT

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