

# November/December 2008 – Microbiology

CPD questionnaires must be completed online via [www.cpdjournals.org.za](http://www.cpdjournals.org.za). After submission you can check the answers and print your certificate. Questions may be answered up to 6 months after publication of each issue.

## UPDATE ON THE LABORATORY DIAGNOSIS OF TB

- 1. True (A) or false (B) – fill in only block A or B:**  
In areas of high TB prevalence microscopy is considered relatively specific for *M. tuberculosis* (90 - 95%), but its disadvantage is limited sensitivity (40 - 60%).
- 2. True (A) or false (B) – fill in only block A or B:**  
Interpretation of the tuberculin skin test is complicated by cross-reactions in persons either vaccinated with BCG or exposed to environmental mycobacteria, and false-negative results can occur owing to anergy.

## WHAT CAN YOU EXPECT FROM A MICROBIOLOGY DIAGNOSTIC SERVICE?

- 3. True (A) or false (B) – fill in only block A or B:**  
Antigen detection allows direct identification of a pathogen from a clinical specimen.
- 4. True (A) or false (B) – fill in only block A or B:**  
Gene probes can detect genetic elements specific to a pathogen in clinical specimens.

## MEDICAL MICROBIOLOGY – SPECIMEN COLLECTION

- 5. True (A) or false (B) – fill in only block A or B:**  
Volume is important for all specimens and crucial for blood and for mycobacterial and fungal culture of urine and CSF.
- 6. True (A) or false (B) – fill in only block A or B:**  
Swabs should be used only when tissue or fluid is not available.

## AN APPROACH TO ANTIBIOTIC-ASSOCIATED DIARRHOEAL SYNDROMES

- 7. True (A) or false (B) – fill in only block A or B:**  
Elevated faecal leucocytes and the isolation of pathogenic microbes strongly suggest an infective aetiology of the diarrhoea.
- 8. True (A) or false (B) – fill in only block A or B:**  
The antimicrobials least associated with CDAD are aminoglycosides, co-trimoxazole, benzyl penicillin and ureido or piperacil penicillins.

## INTRAVASCULAR CATHETER-RELATED INFECTION

- 9. True (A) or false (B) – fill in only block A or B:**  
There are 4 times as many central venous catheter-related infections in the developing world compared with the USA.
- 10. True (A) or false (B) – fill in only block A or B:**  
Systemic antifungal therapy, together with removal of the catheter, should be given in all cases of catheter-related candidaemia in view of the potentially significant sequelae.

## INTERPRETATION OF MICROBIOLOGICAL REPORTS

- 11. Which of the following is correct regarding blood cultures (choose one):**
  - A. Coagulase-negative staphylococci are always significant if isolated from blood culture
  - B. Coagulase-negative staphylococci are always considered skin contaminants
  - C. Coagulase-negative staphylococci may cause catheter-related bloodstream infection
  - D. *S. aureus* is an example of a coagulase-negative staphylococcus.

- 12. True (A) or false (B) – fill in only block A or B:**  
Bacterial meningitis is associated with >100 polymorphs per mm<sup>3</sup> in the CSF.

## BLOOD CULTURES

- 13. True (A) or false (B) – fill in only block A or B:**  
It is generally not necessary to repeat blood cultures after therapy has commenced, but patients with fungaemia and bacteraemia caused by *Staphylococcus aureus* should be subjected to repeated cultures to document clearing of the infection.
- 14. True (A) or false (B) – fill in only block A or B:**  
Contamination of cultures is significantly increased if blood is drawn through intravenous catheters, arterial lines or inguinal vessels.

## CRP AND PROCALCITONIN AS MARKERS OF INFECTION

- 15. True (A) or false (B) – fill in only block A or B:**  
Even though it is a nonspecific marker, CRP values can prove useful in determining disease progress or the effectiveness of treatment.
- 16. True (A) or false (B) – fill in only block A or B:**  
A negative PCT result implies that infection is unlikely and antimicrobial therapy unnecessary, thus reducing inappropriate antimicrobial usage.

## INTERPRETATION OF *S. PNEUMONIAE* ANTIMICROBIAL SUSCEPTIBILITIES

- 17. True (A) or false (B) – fill in only block A or B:**  
*S. pneumoniae* is the most common bacterial cause of community-acquired pneumonia, sinusitis and otitis media.
- 18. True (A) or false (B) – fill in only block A or B:**  
All pneumococcal infections (excluding meningitis) with a penicillin MIC or  $\leq 2$   $\mu\text{g/ml}$  can be treated with IV penicillin 12 million units per day.

## LABORATORY DIAGNOSIS OF PAEDIATRIC LOWER RESPIRATORY TRACT INFECTION

- 19. True (A) or false (B) – fill in only block A or B:**  
Viruses have been shown to cause up to 90% of pneumonias, especially in the first year of life, the respiratory syncytial virus being the most important pathogen.
- 20. True (A) or false (B) – fill in only block A or B:**  
The majority of viral LRTIs requiring hospital admission are due to bronchiolitis and pneumonia.

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