CONTINUING EDUCATION TEST
Procalcitonin serial testing to inform treatment of sepsis
March 2019 (This form may be photocopied. It is no longer valid for CEUs after September 31, 2020.)

TEST QUESTIONS
Circles must be filled in, or test will not be graded. Shade circles like this: ☐ Not like this:

1. What percentage of patients that develop sepsis die during their hospitalization?
   a. 5%  b. 10%  c. 25%  d. 50%

2. Which of the following infections lead to sepsis?
   a. lung, skin, genitourinary, and wound
   b. gastrointestinal, wound, eye, and respiratory
   c. ear, skin, genitourinary, and eye
   d. gastrointestinal, skin, genitourinary, and respiratory

3. As many as _______ percent of sepsis deaths could be prevented with rapid diagnosis and treatment.
   a. 50%  b. 70%  c. 80%  d. 90%

4. Poor antibiotic stewardship is caused by
   a. unnecessary administration of antibiotics.
   b. administrating the wrong antibiotic.
   c. administrating the wrong dose or duration.
   d. all of the above

5. Of the nosocomial infections in the U.S., what approximate percentage of bacteria are resistant to at least one commonly used antibiotic?
   a. 25%  b. 70%  c. 80%  d. 95%

6. Which bacteria is responsible for being the most common cause of nosocomial infections?
   a. Clostridium difficile
   b. Staphylococcus aureus
   c. Escherichia coli
   d. Streptococcus pneumoniae

7. Signs and symptoms of bacterial and viral infections overlap and are inadequate to determine the nature of the infection.
   a. True  b. False

8. What is/are common biomarker(s) being used in the determination of sepsis that have proven limitations?
   a. lactate
   b. IL-6
   c. CRP
   d. all of the above

9. What biomarker is now considered preferred due to its improved sensitivity, specificity, and kinetics?
   a. lactate
   b. PCT
   c. IL-6
   d. CRP

10. Where is PCT converted to calcitonin before it is released into the circulatory system?
    a. thyroid gland
    b. pituitary gland
    c. liver
    d. adrenal glands

11. About four hours after a patient responds to a bacterial challenge, PCT levels rise because
    a. non-neuroendocrine parenchymal tissue cannot cleave PCT to calcitonin.
    b. the liver destroys the calcitonin bound to PCT.
    c. it is secreted by the thyroid gland.
    d. none of the above

12. Serum PCT is superior to CRP levels because
    a. has a higher negative predictive value.
    b. is elevated when the patient has a viral infection.
    c. increases whenever any form of inflammation is present.
    d. both b. and c.

13. When comparing serum PCT to IL-6, PCT has been shown to have _______ specificity and _______ negative predictive value.
    a. lower; higher
    b. higher; higher
    c. lower; lower
    d. higher; lower

14. PCT levels remain elevated until the bacterial infection resolves and therefore, does not allow physicians the capability to assess the therapeutic effect of treatment.
    a. True
    b. False

15. The use of PCT as a diagnostic tool has been shown to aid in
    a. diagnosing bacterial vs. viral meningeal infection.
    b. evaluating the severity of CDI.
    c. diagnosing UTI vs. urosepsis.
    d. all of the above

16. A baseline reading of PCT levels and serial measurements at _______ is necessary for proper clinical decisions to be made.
    a. six hours
    b. 12 hours
    c. 24 hours
    d. 48 hours

17. Antibiotic therapy for sepsis will prove to be effective when the PCT level shows a reduction of _______ percent compared to the previous day during the first four days of treatment and a decline of _______ percent or more over four days from the initial baseline level.
    a. 50 percent; 80 percent
    b. 80 percent; 50 percent
    c. 50 percent; 90 percent
    d. 90 percent; 55 percent

18. Antibiotic discontinuation is strongly encouraged when PCT levels are below _______ ng/ml and have dropped by _______ percent from the baseline reading.
    a. 0.5; 90
    b. 0.5; 80
    c. 0.25; 90
    d. 0.25; 90

19. The retrospective study cited in the article on antibiotic stewardship concluded overall reductions by 47 percent or higher in
    a. median days of antibiotic therapy.
    b. 30-day readmission rates and hospital mortality rates.
    c. adverse drug events from antimicrobials.
    d. all of the above

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1. To what extent did the article focus on or clarify the objectives?  P 1 2 3 4 5 E
2. To what extent was the article well-organized and readable?  P 1 2 3 4 5 E
3. How will you use the CE units?  
   □ state license □ employment 
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