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## Evaluation questionnaire

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# VII Updating Course of Antimicrobials and Infectious Diseases

- 1. Regarding the sensitivity of the prognostic scales in sepsis, indicate the true:**
  - A) SIRS is more sensitive than the SOFA in the patients treated in ER
  - B) The qSOFA is less specific than the SIRS in the patients treated in the ER
  - C) The false negatives applying the SIRS in the patients of Emergencies are of more than 10%
  - D) The positive predictive value of SIRS, SOFA and qSOFA exceeds in all cases 20%
  
- 2. Regarding the diagnosis of sepsis, considering the last definitions, indicate the correct one:**
  - A) Sepsis was diagnosed when qSOFA  $\geq 2$
  - B) Sepsis is diagnosed for presenting a SOFA  $\geq 2$
  - C) Sepsis is diagnosed as presenting an increase in qSOFA  $\geq 2$
  - D) Sepsis is diagnosed as presenting an increase in SOFA  $\geq 2$
  
- 3. Regarding the stratification of short-term mortality in the elderly population, indicate the correct one:**
  - A) The SIRS criteria are the ones that best classify the severity of this population
  - B) qSOFA has shown in this population a great sensitivity
  - C) Good results are obtained by applying the GYM scale (Glasgow, tachypnea, comorbidity)
  - D) a and b are correct
  
- 4. What is the main mechanism of resistance to ceftazidime in *P. aeruginosa*?**
  - A) Mechanisms mediated by ejection pumps and porins
  - B) Chromosomal betalactamase hyperproduction - ampC
  - C) It is always because it acquires extended spectrum beta-lactamases and / or carbapenemases
  - D) None is true
  
- 5. Regarding the hospital epidemiology of *P. aeruginosa*:**
  - A) It is one of the main microorganisms that cause pneumonia related to mechanical ventilation.
  - B) In recent years has increased the percentage of multiresistant strains
  - C) The molecular epidemiology of *P. aeruginosa* is characterized by the presence of epidemic clones or high risk clones that could be responsible for the dissemination of multiresistant strains
  - D) All are true
  
- 6. State the correct answer:**
  - A) Ceftolozan-tazobactam shows good activity against strains of multiresistant *P. aeruginosa*, but is not active against strains producing carbapenemase
  - B) Ceftazidime-avibactam has good activity against strains of multiresistant *P. aeruginosa*, but is not active against strains producing carbapenemases type metallobetalactamases (MBL)
  - C) All are correct
  - D) All are false
  
- 7. Which of the following is a risk factor for participation of multiresistant microorganisms in ventilator-associated pneumonia?**
  - A) 3 or more antibiotic cycles in the previous 3 months
  - B) Acute respiratory distress preceding the development of pneumonia
  - C) Acute renal failure requiring the use of renal replacement techniques
  - D) All of the above
  
- 8. The decision whether or not to initiate antibiotic treatment in case of suspected nosocomial pneumonia or mechanical ventilation should be based on:**
  - A) Only in clinical criteria
  - B) In clinical criteria plus the evaluation of procalcitonin
  - C) In clinical criteria plus the assessment of sTREM-1
  - D) In clinical criteria plus the assessment of the PCR

9. Empiric antibiotic treatment of nosocomial pneumonia or ventilator-associated pneumonia should be active against:
- A) *Staphylococcus aureus* and ESBLs producing *Enterobacteriaceae*
  - B) *Staphylococcus aureus* and *Pseudomonas aeruginosa*
  - C) *Pseudomonas aeruginosa* and *Acinetobacter baumannii*
  - D) *Enterobacteriaceae* and *Enterococcus* spp.
10. The prevalence of infection associated with vascular grafts is approximately:
- A) > 1%
  - B) 5%
  - C) 25%
  - D) > 50%
11. Coagulase negative staphylococci are the microorganisms that are most frequently involved in the infection associated with pacemakers. The second microorganism in frequency is:
- A) *Escherichia coli*
  - B) *Candida albicans*
  - C) *Pseudomonas aeruginosa*
  - D) *Staphylococcus aureus*
12. Which of the following antimicrobials has activity against microorganisms in stationary phase?
- A) Amoxicillin
  - B) Doxycycline
  - C) Daptomycin
  - D) Vancomycin
13. Given the suspicion in a patient of catheter-related bacteremia, how would you rule out that there is no infection (without catheter withdrawal) in less than 24 hours?
- A) Perform 3 blood cultures
  - B) Perform two blood cultures by the peripheral route and another by the catheter
  - C) Perform semi-quantitative cultures of the pericatheter skin and the connection.
  - D) Request differential blood cultures
14. In a patient infected with HIV and with meningitis, how could cryptococcal meningitis be ruled out in less than 4 hours?
- A) Cultivation of the CSF
  - B) Perform a staining of the CSF with Chinese ink
  - C) Perform a real-time PCR for *Cryptococcus* sp
  - D) Perform an immunochromatographic test in urine for *Cryptococcus* sp
15. In a patient admitted to the ICU with pneumonia, how can the presence of MRSA be ruled out in less than 4 hours?
- A) By Gram staining of the sputum and observing gram-positive cocci in clusters
  - B) Perform a real-time PCR to detect the *mecA* gene
  - C) Perform a real-time PCR to detect the presence of *S. aureus*
  - D) All of the above are false
16. The following statements regarding resistance problems in complicated intra-abdominal infections are true:
- A) Isolates of *E. coli* producing ESBL accounts for <1%
  - B) The problem of resistance is particularly acute in the Asia-Pacific region
  - C) The proportion of ESBL-producing *E. coli* has reached 40% in 2012 in the Asia-Pacific region according to the SMART study
  - D) b and c are true
17. The following statements regarding the microorganisms responsible for intra-abdominal infection are true:
- A) *Pseudomonas* sp is isolated in 10% of the patients with IIA acquired in the community
  - B) *Pseudomonas* sp is not a problem in the socio-IIA
  - C) *Enterococcus faecium* is the microorganism responsible for most of the socio-sanitary IIAs
  - D) *Pseudomonas* sp is isolated in approximately 5% of IIAs acquired in the community

- 18. As to the duration of antibiotic treatment in the IIA, it is not false that:**
- A) It is recommended to maintain the antibiotic treatment 2 weeks
  - B) If focus control is adequate probably 5 days of antibiotic treatment is sufficient
  - C) It is recommended to maintain the antibiotic treatment until the fever disappears
  - D) Prolonged antibiotic treatment is associated with better results
- 19. Male 91 years old, with HBP, benign prostatic hypertrophy and hypercholesterolemia. He lives in Chronic Care Residence and is a permanent SV carrier. He has had previous ITUs in recent years. He comes our hospital for sepsis of urinary origin. Which of these antimicrobials would you choose as an empirical treatment?**
- A) Ertapenem
  - B) Meropenem
  - C) Ciprofloxacin
  - D) Piperacillin-tazobactam
- 20. In the previous patient, what would you do about the bladder catheter replacement following the published guidelines?**
- A) It is not necessary to change it, since there are many possibilities of bacteriuria in this patient.
  - B) I must change it before setting antibiotic treatment.
  - C) I must change it once the antibiotic treatment has begun.
  - D) Before changing it, I must put an antibiotic through a bladder catheter.
- 21. In the urine culture collected prior to the start of antibiotic treatment, more than 100,000 cfu / ml of *E. coli* ESBL are isolated as well as in blood cultures and report as sensitive to AMC and P/T (BL-BLI). Indicates the correct answer.**
- A) It seems to me that Microbiology department that has made that report is not reliable, since enterobacteria with ESBL are never sensitive to BL-BLI.
  - B) I think that I should not change the antibiotic treatment with meropenem, because there is bacteremia.
  - C) There are studies that show that, in the case like that of this patient, the prognosis is the same with a broad-spectrum carbapenem as with a BL-BLI.
  - D) I do not think it appropriate to change to BL-BLI, but since I have been taught to adjust treatment (de-escalation), change to ertapenem. The incidence of *E. coli* in postoperative peritonitis in Spain is <3%
- 22. Which of the following is NOT correct regarding the general principles of antibiotic use?**
- A) Prescription of antibiotics is a decision-making process
  - B) The prescription of antibiotics is somewhat dynamic, and must be adapted to the course of infection and the information available
  - C) Clinical, microbiological, epidemiological and pharmacological aspects must be integrated into the decision-making process
  - D) The logistics and organizational circumstances of the center DO NOT influence the decision making of antibiotics
- 23. On the setting of antibiotic treatment, point to the CORRECT option:**
- A) Antibiotic treatment should be adjusted using the antibiotic with the lowest spectrum that indicates the antibiogram
  - B) The antibiotic (spectrum) adjustment should take into account the representativeness of the microbiological results
  - C) It is not possible to adjust the empirical treatment (eg reduce spectrum) when microbiological tests do not produce any results
  - D) It is always better to choose antibiotic with lower MIC

- 24. For the duration of antibiotic treatment, indicate the CORRECT option:**
- A) Once initiated an antibiotic treatment must be completed a cycle to avoid the emergence of resistances
  - B) The standard duration of antibiotic treatment for community-acquired pneumonia is 10 days
  - C) The standard duration of acute otitis media, especially if bilateral is 10 days
  - D) Biomarkers do not help determine the duration of antibiotic treatment
- 25. Based on the results Based on the results of the OPAT-TADE Registry, the most commonly used parenteral antimicrobials in Home Hospitalization are:**
- A) Ceftriaxone, levofloxacin and daptomycin
  - B) Ertapenem, ceftriaxone and ceftazidime
  - C) Ertapenem, ceftriaxone and piperacillin / tazobactam
  - D) Ceftriaxone, ertapenem and teicoplanin can be treated with oxacillin
- 26. What antibiotic is NOT stable at room temperature after reconstitution and therefore can not be infused by electronic infusion pump at home.**
- A) Vancomycin
  - B) Ceftazidime
  - C) Meropenem
  - D) Cefazoline
- 27. State which of the infusion modes is NOT appropriate for the indicated antimicrobial.**
- A) Ertapenem - gravity
  - B) Daptomycin - bolus
  - C) Ampicillin - elastomeric device
  - D) Tigecycline - electronic pump. It is also resistant to erythromycin
- 28. Which of the following diagnostic techniques is faster to diagnose *C. parapsilosis* candidemia?**
- A) Traffic light PNA-FISH
  - B) Direct maldi-tof on blood culture
  - C) Candida T2
  - D) Filmarray
- 29. Which of the following species of *Candida* takes longer to grow in blood culture bottles?**
- A) *C. albicans*
  - B) *C. auris*
  - C) *C. parapsilosis*
  - D) *C. glabrata*
- 30. Which of the following antifungals is more resistant to *Candida auris*?**
- A) Amphotericin B
  - B) Fluconazole
  - C) Caspofungin
  - D) Anidulafungin
- 31. Which of the following species of *Candida* is less prevalent in haematological patients than in ICU patients?**
- A) *Candida krusei*
  - B) *Candida tropicalis*
  - C) *Candida parapsilosis*
  - D) *Candida glabrata*
- 32. What factor of the following do you think has a lower impact on survival in neutropenic patients with candidemia?**
- A) Persistence of neutropenia
  - B) APACHE II
  - C) Age
  - D) Removal of catheter
- 33. To which of the following statements do you agree with regard to granulocyte transfusion in neutropenic patients with candidemia?**
- A) Its low effectiveness limits its application at present
  - B) Reduces the number of infections but is associated with significant side effects
  - C) Well-designed clinical trials have not confirmed its efficacy.
  - D) The evidence is limited but non-comparative studies have shown favorable results in certain patients and conditions

**34. The treatment of AI ...**

- A) It must be initiated early, on suspicion of the disease while performing the diagnostic tests
- B) It must be started when I have the diagnostic confirmation
- C) In patients with "halo" can not be expected, in the rest depends on galactomannan
- D) It should be initiated in all haematological patients with more than 5 days of fever that does not respond to antibiotics

**35. Which of the following statements is false?**

- A) Voriconazole is the treatment of choice for invasive aspergillosis
- B) Isavuconazole has been shown to be equivalent in effectiveness but with less toxicity than voriconazole for the treatment of AI.
- C) Combination therapy with azoles and echinocandins should be reserved for patients with CNS involvement
- D) Liposomal amphotericin should be the treatment of choice in patients with toxic hepatitis

**36. Monitoring of antifungal drugs in the treatment of invasive aspergillosis**

- A) It is a tool that has been scientifically proven to improve the prognosis and decrease the toxicity of the drugs
- B) In the case of voriconazole it is recommended to perform between days 7 and 12.
- C) In the case of amphotericin B, it is important to maintain levels above 1.5 mg/L and below 5 mg/L
- D) All are true

**37. Which of the following pairings between alternative approaches or strategies in the treatment of infections and their mechanism of action, product or substance is incorrect?**

- A) Anti-virulence strategies / monoclonal antibodies.
- B) Modulation of the microbiota / Fecal transfer
- C) Biological Therapy / Bacteriophages.
- D) Vaccines / Quorum - Quenching.

**38. Among the examples of agents whose strategy is the mechanism of inhibition of toxins or secretion systems, bezlotoxumab is a monoclonal antibody directed against:**

- A) Alpha-hemlysin of S. aureus.
- B) Bacillus anthracis toxin.
- C) Shiga Toxin 1 and 2 of E. coli.
- D) Clostridium difficile toxin B.

**39. With respect to vaccines against healthcare-related infections and multidrug-resistant pathogens, one of the following statements is false:**

- A) They could achieve collective or group effect ("herd")
- B) It would be difficult theoretically the appearance of resistances ("resilience")
- C) The vaccines against S. aureus and P. aeruginosa are already available in daily clinical use.
- D) The immune response may be poor in the elderly and immunosuppressed.

## Correct answer sheet

### VII Updating Course of Antimicrobials and Infectious Diseases

	a	b	c	d
1	X			
2				X
3			X	
4		X		
5				X
6			X	
7				X
8	X			
9		X		
10		X		
11				X
12			X	
13			X	
14		X		
15				X
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24			X	
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26			X	
27				X
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29				X
30		X		
31			X	
32				X
33				X
34	X			
35			X	
36	X			
37				X
38				X
39			X	