

## Evaluation questionnaire

### VIII Updating Course of Antimicrobials and Infectious Diseases 2018

1. **The *mcr-1* gene is responsible of transferable resistance to:**
  - a) Linezolid
  - b) Colistin
  - c) Fluoroquinolones
  - d) Methicillin
2. **Regarding the new cephalosporin "cefiderocol" it is true that:**
  - a) It is active against Enterobacteria but not against *Pseudomonas aeruginosa*
  - b) It has activity against Enterobacteria and against MRSA
  - c) It is active against Enterobacteria producing Carbapenemase class A (KPC), B (NDM) and D (OXA-48)
  - d) It is active against Carbapenemase producing Enterobacteria class A and D, but not class B
3. **Regarding the rapid diagnosis technique called LAMP (Loop-Mediated Isothermal Amplification), it is true that:**
  - a) Allows direct detection in clinical samples of different microorganisms in one hour
  - b) It does not serve to detect carbapenemases from clinical samples, only from cultures
  - c) It allows to detect the presence of bacteria but not of parasites in clinical samples
  - d) It is a quick but expensive technique and complicated management in the laboratory
4. **Point out the true one regarding gram-positive infections**
  - a) Fuchsic acid achieved equal microbiological eradication as linezolid in IPPB but did not reduce the size of the lesion by 20% in the first 48 hours
  - b) Ceftaroline showed higher microbiological activity than ceftriaxone against respiratory pathogens, including penicillin-resistant *Streptococcus pneumoniae*, however it is not clinically active in infections in obese or bacteraemic
  - c) Dalbavancin was shown to be as eradicating as vancomycin in persistent infection models
  - d) Daptomycin at 10 mg / kg was also active in bacteremia caused by strains of *Enterococcus faecium* regardless of their MIC (< or > 2 mg/l)
5. **Point out the false with regard to Gram-negative infections**
  - a) Plazomicin exhibits superior in vitro activity than amikacin and gentamicin against carbapenem-resistant *Enterobacteriaceae*, has less renal toxicity, more healing and more microbiological eradication than colistin in phase III studies in pneumonia, bacteremia and UTI.
  - b) The in vitro activity of aminoglycosides can be affected by inoculum, by pH and by anaerobiosis. This is important because of its clinical impact.
  - c) Cefiderocol, the new cephalosporin with siderophore was active against multiresistant *Pseudomonas* spp but not against other non-fermenting bacilli such as *Acinetobacter* spp, or *Stenotrophomonas* spp
  - d) Ceftazidime-Avibactam was particularly active against class A beta-lactamases (in vivo and in vitro), Aztreonam-avibactam versus class B (enterobacteria and *Pseudomonas* spp) and ceftolozane-tazobactam versus class C (especially *Pseudomonas* spp).
6. **Point out the incorrect one in relation to the new antimicrobials**
  - a) LYS228 is a monobactamic in development with binding to PBP3 and extraordinary activity against MBL while also maintaining activity against the other beta-lactamases (OXA, KPC, CTXm, etc.)
  - b) New aryloxazolidinones bound to topoisomerase activity are being developed against all ESKAPE pathogens
  - c) Meropenem-vaborbactam is a new association of carbapenemics with beta-lactamase inhibitors that is already in clinical development (TANGO studies) to treat ESBL and carbapenemase infections of classes A, B and D
  - d) A new antifungal is in development, VL-2397, which has a promising mechanism of action, since it acts on a Sit1 membrane transporter that is not expressed by mammals, with the corresponding lower toxicity

**7. In relation to the objectives 90-90-90 (90% of the patients with HIV infection diagnosed, 90% of the patients in treatment, 90% of the patients with suppressed viral load) of UNAIDS, which is the current state of fulfillment of these objectives**

- a) 80-20-10
- b) 70-50-40
- c) 90-80-70
- d) 50-30-15

**8. Rates of viral suppression (<50 copies of HIV-RNA) in patients without previous treatment in the current trials of the new combination Bictegravir / TAF / FTC at 48 weeks is:**

- a) 92%
- b) 80%
- c) 50%
- d) 30%

**9. Which of the following is a combination and correct dosage of injectable antiretroviral drugs?**

- a) AZT / 3TC / Efavirenz every 3 months
- b) Dolutegravir / Rilpivirine every 6 months
- c) Cabotegravir / Rilpivirine every 1-2 months
- d) Doravirin / Flavirin / 3TC every 6 months

**10. Delafloxacin is, in your opinion:**

- a) An exclusive drug for Gram-negative
- b) A more active drug against *P. aeruginosa* than ciprofloxacin
- c) A quinolone with activity against methicillin-resistant *Staphylococcus aureus*
- d) A drug with a great impact on QT
- e) A specific drug against *Enterococcus* spp

**11. Cefiderocol is:**

- a) Active against *P. aeruginosa*
- b) A siderophore cephalosporin
- c) An active drug against *Stenotrophomonas* spp
- d) A drug with a coverage against Gram negative greater than 90%
- e) All of the above

**12. Lefamulin is:**

- a) A pleuromutilin
- b) A new cephalosporin
- c) A urinary antiseptic
- d) None of the above is true

**13. Compliance with the hand hygiene instructions is conditioned by**

- a) Workload
- b) Availability of alcoholic solutions
- c) Time available
- d) All the previous ones

**14. Contact precautions are one of the key elements to prevent horizontal transmission of multi-resistant microorganisms in all of the following scenarios except:**

- a) Patients colonized or infected by MRSA
- b) Patients colonized or infected by *C. difficile*
- c) Patients colonized or infected by carbapenemase-producing enterobacteria
- d) Patients colonized or infected by ESBL-producing *E. coli*

**15. Programs to optimize the use of antimicrobials can help achieve the following objectives**

- a) Decrease the colonization infection rate by multiresistant
- b) Improve clinical outcomes (mortality, average stay) of patients with infections.
- c) Promote the use of cost-effective treatments
- d) All the previous ones

**16. Isavuconazole has activity against ...**

- a) *Mucor* sp
- b) *Aspergillus* sp
- c) *Cryptococcus* sp
- d) All

**17. The echinocandins ...**

- a) They can not be used in catheter-related sepsis
- b) They are useful as empirical treatment in ICU patients with persistent fever
- c) Could be used in candidemias of urinary origin if the focus is drained
- d) The three previous answers are false

**18. Say which of the following associations is false:**

- a) Anti-TNF and increased risk of tuberculosis
- b) Inhibition of IL-17 and increased mucocutaneous candidiasis
- c) Tyrosine kinase inhibitors and predisposition to fungal infection
- d) IL12 inhibitor and increased risk of cryptococcosis

**19. Indicate the correct answer in relation to carbapenemase-producing enterobacteria (CPE) in Spain**

- a) The most prevalent are the NDM producers
- b) The most prevalent are the OXA-48 producers
- c) They are not important in the hospital environment
- d) They are at the moment very infrequent

**20. Point out the correct answer about extremely drug resistant *Pseudomonas aeruginosa* isolated in Spain**

- a) It has a polyclonal structure not dominated by high-risk clones
- b) Most strains with carbapenemase are of KPC type
- c) It is associated with widely distributed high risk clones
- d) The extremely resistant phenotype has emerged since 2015

**21. Indicate the correct answer. Resistance to colistin in *Escherichia coli* and *Klebsiella pneumoniae* associated with the *mcr-1* gene**

- a) It is produced exclusively in multi-resistant isolates
- b) It has been found both in isolates of hospital origin and extrahospitalaries
- c) It has not been isolated for the moment in high risk clones
- d) It is always of a very high level

**22. According to the study developed in several Spanish hospitals about vaccination against influenza virus in carriers of solid organ transplantation, indicate the correct**

- a) The study shows a lower incidence of influenza in vaccinated
- b) The study shows that administration of two doses of vaccine produces a greater immune response than vaccination with a single dose
- c) The study shows that vaccination with three doses, with intervals of 4 weeks between them, is superior to the administration of one or two doses of the vaccine
- d) All of the above are false because no pattern has been shown to obtain better results than single-dose vaccination

**23. According to the international study on risk factors for early aspergillosis (first 6 months after transplantation) in kidney transplant carriers, which of the following is not a risk factor for this fungal infection?**

- a) Diagnosis of COPD prior to kidney transplantation
- b) Delay of graft function (need for hemodialysis after transplant)
- c) Double kidney transplant
- d) Bacteremia after kidney transplantation

**24. According to the international study on invasive pulmonary aspergillosis in renal transplantation, patients present higher mortality when**

- a) They do not receive treatment with voriconazole
- b) Lung involvement is bilateral at the time of diagnosis
- c) Aspergillosis occurs in the first months after kidney transplantation
- d) All of the above are true

**25. Regarding the administration of antibiotic therapy in extra-hospital medicine, we could say that without a doubt:**

- a) Mortality decreases
- b) The hospital stay decreases
- c) Decrease the need for admission to the Intensive Care Service
- d) None of the above is sufficiently demonstrated

**26. Regarding the usefulness of qSOFA and SIRS, indicate the one that seems most correct.**

- a) SIRS has a greater capacity to identify the infected patient than the qSOFA.
- b) SIRS has a greater capacity to identify the patient with poor short-term prognosis than the qSOFA.
- c) qSOFA has a greater capacity to identify the infected patient than SIRS.
- d) None of the above is true

**27. The steps to follow to adequately evaluate the patient with suspected infection are.**

- a) Determine the focus of the infection, identify the need to control the focus in an interventionist manner, evaluate the immunological situation and evaluate the presence of shock.
- b) Carry out a qSOFA and if it is greater than 2 make a SOFA
- c) Perform a SIRS, a qSOFA, a SOFA
- d) Remove blood cultures and put an antibiotic

**28. Before a 30-year-old patient who consults in the emergency room for a respiratory episode with fever of 39 ° C, leukocytosis of 20,000 cels / mm<sup>3</sup> and has a lobar condensation on the chest radiograph, point out the correct option**

- a) I must wait to know the value of PCT before starting antibiotics
- b) I will only start antibiotics if it has a lactate > 4 mmol / L
- c) I will only start antibiotics if you have a positive antigenuria for pneumococcus
- d) I must initiate empirical antibiotherapy

**29. Mark the correct answer**

- a) PCR generates confusion in clinical decisions and should stop being requested
- b) New definitions of sepsis recommend not using biomarkers in clinical decision making
- c) Some biomarkers have demonstrated their usefulness both in the diagnosis of sepsis and in the prognosis
- d) The best biomarker for the diagnosis of bacterial infection is lactate

**30. Regarding the usefulness of biomarkers in the management of infection, point out the true answer**

- a) PCT has shown in several clinical trials its utility to reduce antibiotic treatment with safety
- b) MR-ProADM identifies seriously ill patients
- c) Lactate is necessary for the diagnosis of shock according to the new definitions of sepsis of 2016
- d) All are true

**31. It is not true what:**

- a) In the centers where prophylaxis with quinolones is carried out in the TPH, the incidence of resistance is higher
- b) Inappropriate empirical treatment in patients undergoing HSCT is associated with higher mortality
- c) In bacteremia due to ESBL-producing Enterobacteria, beta-lactams with beta-lactamase inhibitor can be used if they are sensitive in vitro
- d) In febrile neutropenia, the empirical antibiotic tto must be followed until the neutrophil count is recovered

**32. Regarding pneumonia due to *P. jiroveci* (NJP) in onco-hematological patient**

- a) It is an isolated phenomenon in these patients
- b) The CD4 figure below 200 indicates the start of prophylaxis
- c) Doses of intermittent corticosteroids and lower than those of 20 mg / d / 4s constitute a risk factor for NJP
- d) Prophylaxis is not indicated in patients who receive PD1 and have colitis that requires treatment

**33. Regarding new drugs in the treatment of onco-hematological patients and the appearance of infections**

- a) The use of PD1/PD L-1 correlates with an increase in opportunistic infections
- b) Ibrutinib correlates with a greater number of IFI especially in association with steroids
- c) Idelalisib is associated with a higher frequency of bacterial infections
- d) PI3K in the oncological patient are associated with a higher incidence of NJP

34. In immunosuppressed patients or patients with cancer, we would expect a clinical–radiological presentation in the form of a stroke, or cerebrovascular accident (CVA), with a series of possible microbial etiologies, with the exception of one of the following. Point it out
- WZ (Varicella–zoster Virus)
  - CMV (Cytomegalovirus)
  - Mucor* spp.
  - VHH-6 (Human herpes virus type 6)
35. In the treatment of invasive fungal infections (IFI) of the immunosuppressed CNS, whether caused by filamentous or yeast-like fungi, it is important to use antifungal drugs with the best possible penetration and passage of the blood–brain or hemato–licuoral barriers, to times in combined use; this fact discourages the use of one of them
- Azoles such as fluconazole and voriconazole
  - Flucytosine
  - Echinocandins such as Caspofungin
  - Amphotericin B
36. Development of Immune reconstitution inflammatory syndrome (IRIS), an old paradoxical reaction, has been observed among different types of immunosuppression, not only in HIV patients. Its phenomenon is especially serious when affects to CNS. Apart from tuberculosis, which of the following agents has also been related to IRIS?
- Cryptococcus neoformans*
  - JC Virus
  - Treponema pallidum*
  - All the previous ones
37. The microorganism that most frequently causes infections associated with biomedical devices is
- Staphylococcus aureus*
  - Candida albicans*
  - Staphylococcus epidermidis*
  - Escherichia coli*
38. The antifungals with greater activity against biofilms of *Candida albicans* are:
- Azoles
  - Polyenes
  - Echinocandins
  - Terbinafine
39. The treatment of a candidaemia related to a tunneled central venous catheter should include?
- The removal of the catheter
  - Antifungal lock with an echinocandin
  - Antifungal lock with amphotericin B
  - Combined systemic antifungal treatment
40. With regard to the diagnosis of *Clostridium difficile* infection, indicate, from the following statements, which one is correct
- Patients with positive free toxin have *C. difficile* disease while those diagnosed by PCR are simply colonized
  - "Control tests" should not be done as patients treated for a *C. difficile* infection because they can continue to show positivity for *C. difficile* diagnostic tests even though they are clinically cured
  - If there is a suspicion of recurrence of *C. difficile* infection, it is not necessary to repeat the diagnostic tests
  - Treatment should be prescribed against *C. difficile* in any immunosuppressed patient who is detected positive for *C. difficile*
41. An 82-year-old patient suffered a first serious episode of *C. difficile* infection and was treated with vancomycin. He answered slowly but finally was asymptomatic. A month later he enters for a second episode, serious. You would consider using fidaxomicin for one of the following reasons
- Because the risk of recurrence is reduced compared to what would be if metronidazole or vancomycin were used
  - Because it is possible that resistance to vancomycin used in the previous episode has developed
  - For the risk of absorption and toxicity of vancomycin by repeated cycles with said antibiotic
  - Because a lower risk of death due to *C. difficile* has been demonstrated with the use of fidaxomicin

**42. The prognosis of ICD in a hospital can (and should) be improved by certain strategies. Point out the incorrect**

- a) Encourage the use of combination therapy (metronidazole + vancomycin)
- b) Develop a faecal transplant program (transfer of faecal microbiota)
- c) Use fidaxomicin or Bezlotoxumab (associated with an antibiotic against *C. difficile*) in patients with a high risk of recurrence
- d) Early identification of the most serious patients to be seen by an expert surgeon

Correct answer sheet

VIII Updating Course of Antimicrobials and Infectious Diseases 2018. Correct answers

	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
16				X
17			X	
18				X
19		X		
20			X	
21		X		
22		X		
23			X	
24				X
25				X
26	X			
27	X			
28				X
29			X	
30				X
31				X
32			X	
33		X		
34				X
35			X	
36				X
37			X	
38			X	
39	X			
40		X		
41	X			
42	X			