

Evaluation questionnaire

XIII Updating Course of Antimicrobials and Infectious Diseases 2023

1. **The results of a clinical trial evaluating the usefulness of Ceftobiprole in the treatment of patients with complicated *S. aureus* bacteremia have been presented at ID Week. Say if you remember the comparator drug:**
 - a) Vancomycin
 - b) Daptomycin
 - c) Dalbavancin
 - d) Any of the above would apply
2. **All of the following drugs have been discussed in the list of agents potentially available in the near future, in antifungal therapy, with one exception to note:**
 - a) Tufafungerp
 - b) Ibrexafungerp
 - c) Olorofim
 - d) Otesaconazole
3. **The risk of transmission to their partners through sexual intercourse of HIV infection in persons with undetectable viral load (<200 copies/mL) is:**
 - a) There is a risk of transmission so you should always use barrier methods.
 - b) It depends on the patient's CD4 lymphocytes, if they are low the risk is significant.
 - c) Undetectable is untransmissible, it is not necessary to use barrier methods.
 - d) The risk of transmission in anal intercourse is significant.
4. **Survival of people living with HIV (PLWHIV) is:**
 - a) It is lower than seronegative persons with the same characteristics by about ten years.
 - b) PLWHIV with viral suppression have a survival similar to the general population.
 - c) PLWHIV with low CD4s have similar survival
 - d) The risk of mortality in PLWHIV is related to the increase in cardiovascular disease in these patients.
5. **Point out the incorrect one about aging in people living with HIV (PLWHIV)**
 - a) Antiretroviral treatment slows aging
 - b) PLWHIV have accelerated aging data
 - c) Accelerated aging is seen in people with poorer HIV control
 - d) Telomere length and DNA methylation are affected in PLWHIV.
6. **Regarding *Streptococcus* spp. bacteremia, which of the following is true?**
 - a) The different species of *Streptococcus viridans* have the same risk of endocarditis.
 - b) Different species of *Streptococcus* spp. have the same risk of colorectal cancer
 - c) They do not always have clinical significance
 - d) All are false
7. **In relation to infective endocarditis due to the following bacteria, which has been associated to a lesser degree with the existence of colorectal cancer?**
 - a) *Staphylococcus aureus*
 - b) *Streptococcus gallolyticus*
 - c) *Enterococcus faecalis*
 - d) *Clostridium septicum*
8. **Which of the following antibiotics is a treatment of choice for any of the frequent etiologies of infective endocarditis according to the European and American Guidelines?**
 - a) Dalbavancin
 - b) Ceftriaxone
 - c) Ceftaroline
 - d) Oritavancin

9. Mark the correct one of the following statements:

- a) The terms bacteremia and sepsis can be used interchangeably.
- b) Sepsis is a complex disease, induced by infection, in which an altered host response and involvement of the main vital organs converge.
- c) The diagnosis of sepsis is microbiological.
- d) Answers b and c are correct

10. The creation of a specific code for sepsis is due to the fact that:

- a) It is the leading infectious cause of death
- b) The associated mortality can be combated with a correct diagnosis and appropriate management in the first hours of life
- c) Kumar established more than 10 years ago that mortality increases by approximately 7.6% for every hour of delay in adopting appropriate measures.
- d) All of the above are true

11. Regarding the establishment of a microbiological sepsis code:

- a) The measures to be adopted should be the same in all laboratories.
- b) Only the blood cultures of these patients should be prioritized.
- c) When choosing the actions to be taken in the laboratory, the impact they will have on the patient should be taken into account.
- d) It should not affect the time to issue results

12. Point out the wrong answer about Nosocomial Pneumonia

- a) The mortality rate for NN ranges from 20-50% and can reach 75% in some specific settings or when caused by multidrug-resistant (MDR) pathogens.
- b) It represents the most frequent nosocomial infection in the critical care setting.
- c) Intubated or not, the median onset of NN is around 7-10 days after admission.
- d) All are correct

13. Indicate which of the following sensitivity percentages is incorrect (results obtained 2021-2022)

- a) 20-40% of healthcare-associated Enterobacteriaceae isolates are resistant to 3rd generation cephalosporins (BLEE or AmpC).
- b) 2-16% of healthcare-associated Enterobacteriaceae isolates are resistant to carbapenemics
- c) The resistance rate in clinical isolates of *Pseudomonas aeruginosa* to classical antibiotics in nosocomial pneumonia (meropenem, piperacillin-tazobactam) in critical care units is around 30%.
- d) All the percentages shown are correct.

14. Mark the incorrect answer among the new antimicrobials with potential use in NN (ceftolozane-tazobactam, ceftazidime-avibactam, cefiderocol, meropenem-vaborbactam, imipenem-relebactam).

- a) Diffusion to the pulmonary ELF exceeds 60% of the plasma concentration in all of them, which can be increased by extending the infusion time (in those time-dependent).
- b) The proximity between MIC (Minimum Inhibitory Concentration) and MBC (Minimum Bactericidal Concentration) is able to condition both the activity of the antibiotic at a known concentration and the intra-treatment resistance.
- c) There is evidence that ceftolozane-tazobactam is able to decrease mortality with respect to the comparator in the subpopulation of patients with NN and bacterial isolation in culture (HBAP).
- d) Answers 2 and 3 are correct

15. Point out the incorrect answer regarding immunization and the risk of progression of COVID-19 among the transplanted population

- a) Unimmunized OST patients have a 20.5% to 27% risk of mortality. In addition, infection is associated with greater deterioration of renal function at 90-d
- b) TOS patients have a lower vaccine response than non-transplanted patients, reaching, at best, 60-80% within 4 months of the third dose.
- c) Mortality among vaccinated OST recipients with infection remains around 10%.
- d) All the answers are correct

16. In a mild SARS-CoV-2 infection (day 2 from the onset of symptoms), in a transplant patient, with GFR < 20ml/h, the antiviral treatment indicated is the following:
- No treatment is required as it is a mild infection.
 - Molnupiravir
 - Remdesivir
 - Nirmatrelvir/ritonavir
17. In a renal transplant patient on tacrolimus treatment with mild SARS-CoV-2 infection (4 days from symptom onset), treatment could include all but:
- Molnupiravir
 - Remdesivir
 - Nirmatrelvir/ritonavir
 - Sotrovimab
18. Select the best therapeutic strategy to prescribe for a transplant patient with persistent viral replication and interspersed symptomatic periods since 2 months:
- No treatment required
 - Monotherapy with molnupiravir for 5 days
 - Monotherapy with remdesivir for 5 days
 - Combination therapy with two antivirals for extended duration
19. Which of the following antivirals has no activity against SARS-CoV-2?
- Nirmatrelvir
 - Favipiravir
 - Ritonavir
 - Molnupiravir
20. It is recommended that molnupiravir be initiated within the first ... days of symptom onset.
- 5
 - 7
 - 10
 - 14
21. A 67-year-old male patient, liver transplanted in 2014 for hepatocarcinoma, on immunosuppressive treatment with mycophenolate mofetil, chronic renal insufficiency (clearance of 49) by tacrolimus, and vaccinated with three doses against SARS-CoV-2 (last November 2021) who came to the emergency department in December 2022 for febrile and cough of 36 hours of evolution. Physical examination with no crackles. O₂ saturation of 97%, room air. Chest X-ray without infiltrates. Diagnosis of Covid-19. What would be the indication for treatment?
- Molnupiravir
 - Nirmatrelvir/ritonavir
 - Sotrovimab
 - No indication for treatment
22. State which of the following is an effector function of antibodies:
- Opsonization of antigens to be phagocytosed.
 - Complement activation by the classical pathway
 - Antibody-dependent cell-mediated cytotoxicity (ADCC) mediated by NK and macrophages
 - All of the above
23. Which of the following answers is true regarding "fold change" in relation to the neutralizing capacity of a drug:
- It is an absolute number directly related to a drug's neutralizing capacity
 - It is a relative number that refers to the change in the IC₅₀ of a drug with respect to a previous control value
 - It refers to the concentration of drug required to neutralize 50% of the antigen.
 - Refers to the concentration of drug required to achieve 50% of its maximal inhibition
24. Which of the following monoclonal antibodies used against SARS-CoV-2 has a modification to reduce effector function and the potential risk of increased antibody-dependent disease?
- Sotrovimab
 - Casirivimab-indevimab
 - Tixagevimab-cilgavimab
 - Bebtelovimab

25. What is the circulating Clade of mpox in this pandemic?
- Clade I (Central Africa)
 - Clade II (West Africa)
 - Clade I (West Africa)
 - Clade II (Central Africa)
26. In people living with HIV infection who are diagnosed with simian smallpox we must take into account:
- Study of contacts
 - Assess the use of antivirals on an individual basis.
 - If they have poor immunovirological control, they may be at greater risk of complications.
 - All of the above
27. In all but one person with Mpox, the following actions should be performed:
- Airborne, respiratory, and contact isolation.
 - HIV serology
 - Individualized STI screening
 - Inclusion in PrEP programs after ruling out HIV infection.
28. On which of the following antigens is the classification into *Streptococcus pyogenes* serotypes based?
- Wall carbohydrate
 - M membrane protein M
 - Exotoxin
 - Streptolysin
29. The most common age of presentation of current invasive diseases caused by *Streptococcus pyogenes* in Pediatrics is:
- Infants
 - Children from 2 to 7 years old
 - Children 7 to 12 years of age
 - Older than 12 years of age
30. The most frequent form of presentation of current invasive diseases caused by *Streptococcus pyogenes* in Pediatrics is:
- Pneumonia
 - Necrotizing fasciitis
 - Streptococcal Toxic Shock Syndrome (SSTS)
 - Primary bacteremia
31. In relation to the characteristics associated with an increased likelihood of developing a severe necrotizing skin and soft tissue infection, all but one of the following stand out; point it out:
- Appearance of bullae and/or crepitus.
 - Presence of renal failure and hyponatremia
 - Systemic toxicity and septic state
 - Metabolic alkalosis
32. Which of the following is considered an "anionic" fluoroquinolone with the potential to be active in acidic media and most effective on abscesses and biofilms?
- Ciprofloxacin
 - Moxifloxacin
 - Delafloxacin
 - Ofloxacin
33. Among the following glycopeptide antibiotics against Gram-positive microorganisms, which one(s) are considered or referred to as "long acting", due to their long and high half-life that achieves prolonged effective antimicrobial activity (more than one week)?
- Oritavancin
 - Telavancin
 - Daptomycin
 - Teicoplanin

34. Indicate the correct answer regarding the IDSA and ESCMID guidelines in the treatment of infections caused by gram-negative microorganisms.

- a) They use similar evidence criteria
- b) The IDSA guideline uses criteria based on non-systematic literature reviews.
- c) The ESCMID guideline is based on systematic reviews with evidence based on the GRADE system.
- d) 2 and 3 are correct

35. Indicate the FALSE answer in relation to the coinciding recommendations, although with nuances, in the targeted treatment of systemic infections by metallobetalactam-producing

- a) Enterobacteriaceae in the IDSA, ESCMID and SEIMC guidelines:
- b) Cefiderocol is recommended.
- c) The association of ceftazidime/avibactam with aztreonam is recommended.
- d) Tigecycline is recommended in monotherapy with loading doses and subsequent high doses.
- e) Colistin is not recommended

36. Indicate the correct answer regarding the activity of meropenem/vabobactam and imipenem/relebactam.

- a) They are active against KPC-producing Enterobacteriaceae.
- b) Are active against MBL-producing Enterobacteriaceae
- c) They are always and equally active against multidrug-resistant *P. aeruginosa*.
- d) Are of choice in infections with carbapenemase-producing *Acinetobacter baumannii* and *Stenotrophomonas maltophilia*.

37. Patients receiving CAR T therapy are at increased risk of infection:

- a) From post-QMT depletion
- b) Prolonged hypogammaglobulinemia
- c) Due to the use of corticosteroids in CRS.
- d) All are true

38. In the prevention of CAR T. infection:

- a) It is essential to perform a good anti-filamentous fungus prophylaxis.
- b) It is essential to make a good antibacterial prophylaxis.
- c) It is essential to make a rigorous use of catheters and avoid nosocomial infection.
- d) It is essential to selectively wash the lymphocytes to be infused.

39. Patients with CAR T who have COVID19:

- a) Are potentially very severe patients
- b) They present above all significant inflammation
- c) They require early and probably combined antiviral treatment.
- d) a and c are true

40. At present and globally, what is the approximate percentage of clinical isolates of *Pseudomonas aeruginosa* resistant to carbapenems in Spain?

- a) 0-5%
- b) 5-10%
- c) 10-25%
- d) 50-75%

41. In general and without taking into account the specific epidemiology of each hospital, what is the most frequent mechanism of resistance of *Pseudomonas aeruginosa* to carbapenems in our country?

- a) Production of carbapenemases
- b) Hyperproduction of ampC and loss of porins.
- c) Hyperexpression of efflux pumps
- d) Siderophore receptor mutation

42. If other clinical data at the moment Which of the following treatments do you consider most appropriate for a bacteremia caused by MIV-producing *Pseudomonas aeruginosa*?

- a) Ceftolozane-tazobactam
- b) Cefiderocol
- c) Aztreonam
- d) Ceftazidime-avibactam

43. Mark the WRONG answer regarding rezafungin:

- a) It belongs to the echinocandin family.
- b) It can be administered orally
- c) It is recommended to be administered once a week.
- d) Its spectrum of activity is similar to that of the other echinocandins.

44. Ibrexafungerp is a new antifungal whose main novelty is:

- a) Its oral administration
- b) Its mechanism of action
- c) Its high activity against filamentous fungi.
- d) Its authorization by the EMA for antifungal prophylaxis.

45. Which of the following antifungals is not cross-resistant to anidulafungin?

- a) Rezafungin
- b) Ibrexafungerp
- c) Olorophyme
- d) All three antifungals are cross-resistant with anidulafungin.

46. Regarding FTIR spectroscopy it is FALSE that:

- a) It is an infrared spectroscopy.
- b) It can be used for serotyping of *S. pneumoniae*.
- c) It can be used as a point-of-care technique for the rapid diagnosis of STIs.
- d) Can be used for outbreak detection

47. HIGH LEVEL resistance to cefiderocol is due to:

- a) Mutations in the cirA gene (siderophore receptor)
- b) Presence of metallo-beta-lactamases, mainly NDM
- c) Presence of AmpC and PER type beta-lactamases.
- d) The combination of multiple factors

48. In relation to the CRISPR system it is FALSE that:

- a) It is a natural adaptive immune system of prokaryotes.
- b) It is a system based on artificial intelligence
- c) It can be used for the detection of viruses, bacteria, fungi and parasites.
- d) It can detect resistance genes and sensitize bacteria to antibiotics.

49. Which of the following drugs is not part of the 24-week treatment regimen against rifampicin-resistant tuberculosis?

- a) Linezolid
- b) Cycloserine
- c) Moxifloxacin
- d) Bedaquiline

50. Select the correct answer from the following:

- a) The duration of antibiotic treatment of a joint prosthesis infection following any modality of surgery should be 12 weeks.
- b) Among the recommendations for the proper use of vascular catheters are femoral cannulation and the use of previous antibiotic prophylaxis.
- c) Treatment of ADVP-associated right-sided endocarditis can be reduced from 6 to 2 weeks parenterally with similar efficacy and free of complications.
- d) One of the criteria that allows postponing valve surgery until the end of treatment in left-sided endocarditis of AVPD is that it is produced by *S. aureus*.

51. Regarding the cases of invasive fungal infection associated with COVID-19 point out the correct answer:

- a) The diagnosis of CAPA (Covid-associated pulmonary aspergillosis) is made like influenza early before 5 days.
- b) Risk factors for CAPA are tozilizumab use, dexamethasone use, advanced age, and respiratory distress from Covid requiring mechanical ventilation.
- c) Like the Indian cases, the most frequent CAM (Covid-associated mucormycosis) in our environment was rhinocerebral.
- d) Among invasive candidiasis (CAC) in COVID patients, the most frequent was *Candida auris*.