

1. A 2-week-old boy is in the pediatric intensive care unit with a high fever and the signs of meningitis. Gram stain of the spinal fluid reveals small gram-positive rods. Colonies on blood agar show a narrow zone of β -hemolysis. Which one of the following is the most likely cause of his neonatal meningitis?
a. *Bacillus anthracis* b. *Bacillus cereus* c. *Clostridium perfringens* d. *Corynebacterium diphtheriae* e. *Listeria monocytogenes*
2. A patient presented in the emergency room having a 5-cm ulcer on her leg that is surrounded by a red, warm, and tender area of inflammation. You do a Gram stain on pus from the ulcer and see gram-positive cocci in chains. Culture of the pus grows small β -hemolytic colonies that are catalase-negative and are inhibited by bacitracin. These results indicate that the organism causing her lesion is most likely:
a. *Enterococcus faecalis* b. *Staphylococcus aureus* c. *Streptococcus agalactiae* d. *Streptococcus pneumoniae* e. *Streptococcus pyogenes*
3. A 25-year-old woman presented with pain on urination and cloudy urine but no fever or flank pain. She has not been hospitalized, you think she probably has cystitis, a gram stain of urine reveals gram-negative rods. Culture of urine on EMB agar shows colorless colonies. Swarming motility was noted on blood agar plate. Urease test was positive. Which of the following bacteria is the cause of infection?
a. *Escherichia coli* b. *Helicobacter pylori* c. *Proteus mirabilis* d. *Pseudomonas aeruginosa* e. *Serratia marcescens*
4. A boy came with fever, chills and rigors for last 2 days. He was already given amoxicillin for 5 days. He was fatigued. There was history of passing dark red urine. He was labeled as patient of Blackwater fever due to heavy parasitization of RBC's. This manifestation is caused by:
 a. *Plasmodium falciparum* b. *Plasmodium malariae* c. *Plasmodium ovale* d. *Plasmodium vivax* e. *Plasmodium knowlesi*
5. A 9-year-old boy presented with rash, fever, headache & loss of appetite. Rash appeared on trunk initially then spread to face, arms & legs. The rash formed 200-500 itchy blisters which then transformed into dry crusts in several successive crops. Causative virus of this disease is?
 a. *Vaccinia Zoster Virus* b. *Herpes simplex virus* c. *Ebstein-Barr virus* d. *Corona virus* e. *Hepatitis B Virus*
6. A 32-year-old woman who had a whitish, globular vaginal discharge for the past five days. Pelvic examination reveals erythematous cervix. Erosions and masses are absent. A pap smear shows presence of budding cells and pseudohyphae. No dysplastic cells are present. Which among the following microorganism is likely to produce such findings?
a. *Human papilloma virus* b. *Candida albicans* c. *Neisseria gonorrhoea* d. *Staphylococcus aureus* e. *Pseudomonas aeruginosa*
7. On a routine visit to the physician, an otherwise healthy 51-year-old man has a blood pressure of 150/95 mm Hg. If his hypertension remains untreated for years, which of the following cellular alterations would most likely be seen in his myocardium?
a. Atrophy b. Hyperplasia c. Metaplasia d. Dysplasia e. Hypertrophy
8. A 30-year-old man sustains left femoral fracture in a skiing accident & his leg is placed in a plaster cast. After the leg has been immobilized for several weeks, the diameter of the left calf has decreased. This change (alteration in calf muscle) is most likely a result of...
a. Aplasia b. Hypoplasia c. Atrophy d. Dystrophy e. Hyalinosis
9. A 32-year-old man experiences "heartburn" and gastric reflux after large meals. After many months, he undergoes upper gastrointestinal endoscopy, and a biopsy specimen of the esophageal epithelium is obtained. Which of the following pathologic changes are most likely?
a. Squamous metaplasia b. Mucosal hypertrophy c. Columnar epithelial metaplasia d. Atrophy of lamina propria e. Goblet cell hyperplasia
10. In a clinical trial, a chemotherapeutic agent is given to patients with breast cancer metastases. Samples of the cancer cells are obtained and assessed for the presence of death of tumor cells by apoptosis. Mutational inactivation of which of the following products is most likely to render tumor cells resistant to the effects of such an agent?
a. BCL-2 b. p53 c. NF- κ B d. Cytochrome P-450 e. Granzyme B
11. A 9-year-old Thalassemic child has multiple blood transfusions for many years. On physical examination, she now has no significant findings; however, liver function tests show reduced serum albumin. Which of the following findings would most likely appear in a liver biopsy specimen?
a. Steatosis in hepatocytes b. Bilirubin in canaliculi c. Glycogen in hepatocytes d. Amyloid in portal triads e. Hemosiderin in hepatocytes
12. A woman who is allergic to cats visits a neighbor who has several cats. During the visit, she inhales cat dander, and within minutes, she develops nasal congestion with abundant nasal secretions. Which of the following substances is most likely to produce these findings?
a. Bradykinin b. Complement C5a c. Histamine d. Interleukin-1 e. Phospholipase C

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 a. Medical instruments
 b. Invasive procedures
 c. Prolonged stay time in the care unit
 d. Breastfeeding soon after the delivery
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 a. Mosquito
 b. Man
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28. A 28-year-old woman presents to the emergency department with a fever of 102°F, chills, and painful urination. Urinalysis reveals pyuria and bacteriuria, and a diagnosis of urinary tract infection is made. The patient has no known allergies and has never taken antibiotics before. What is the appropriate treatment for this patient? What is the most appropriate initial treatment for this patient's urinary tract infection?
- a. Ciprofloxacin b. Nitrofurantoin c. Trimethoprim/sulfamethoxazole d. Penicillin e. Azithromycin
29. A 29-year-old female presents to the clinic with 3-day history of dysuria & increased urinary frequency. Urinalysis reveals pyuria & leukocyte esterase positivity. Urine culture shows sensitivity to trimethoprim. Which of the following is the mechanism of action of trimethoprim?
- a. Inhibition of DNA replication b. Inhibition of RNA synthesis c. Inhibition of protein synthesis
 d. Inhibition of dihydrofolate reductase e. Inhibition of cell wall synthesis
30. A 27-year-old female presents with fever, chills, and shortness of breath. She reports being recently diagnosed with streptococcal pharyngitis and had been started on penicillin V. On examination, she is febrile and tachycardic, with diffuse abdominal tenderness and splenomegaly. Lab results reveal Hb 8.5 g/dL (normal range: 12-15 g/dL) with elevated reticulocyte count, indirect bilirubin, and lactate dehydrogenase levels. Peripheral blood smear shows spherocytes and positive direct Coombs test. Which of the following is the most likely diagnosis in this patient?
- a. Penicillin-induced thrombocytopenia b. Penicillin-induced agranulocytosis c. Penicillin-induced autoimmune hemolytic anemia
 d. Penicillin-induced immune complex glomerulonephritis e. Penicillin V induced bilirubinemia
31. Which of the following terms best describes a drug that blocks the action of epinephrine at its receptors by occupying those receptors without activating them?
- a. Pharmacological antagonist b. Partial agonist c. Physiological antagonist d. Chemical antagonist e. Noncompetitive antagonist
32. Select the antihistaminic which modulates calcium channels and has prominent labyrinthine suppressant property.
- a. Cyproheptadine b. Cinnarizine c. Clemastine d. Cetirizine e. Chlorpheniramine
33. The following analgesic lacks anti-inflammatory action.
- a. Aspirin b. Diclofenac sodium c. Ibuprofen d. Paracetamol e. Piroxicam
34. An adult male living in nonmalarious area has to visit an area where chloroquine resistant P. falciparum is prevalent. He is intolerant to mefloquine and his G-6PD status is unknown. Select the drug that you will prescribe for prophylaxis of malaria.
- a. Primaquine b. Doxycycline c. Amodiaquine d. Quinine e. Chloroquine
35. Which of the following drugs is suitable for treatment of malaria during pregnancy?
- a. Quinine b. Chloroquine c. Pyrimethamine d. Primaquine e. Proguanil
36. Which of the following is a second generation cephalosporin that is highly resistant to gram negative β -lactamases, and cures penicillinase positive as well as negative gonococcal infection by a single intramuscular dose?
- a. Cephalexin b. Cefuroxime c. Cefoperazone d. Ceftazidime e. Cefaclor
37. For two drugs products to be considered "Pharmaceutical Equivalents"
- a. Have the same active drugs (therapeutic moiety) b. Consists of the same salt c. Contain the same excipients d. A & B e. B & C
38. A drug has elimination half life of 3 hrs and its apparent volume of distribution is 100ml/kg. What is the total body renal clearance of this drug in 70kg male in terms of liter per hour?
- a. 0.5L/hr b. 1.6L/hr c. 8L/hr d. 14.6L/hr e. 16.3L/hr
39. The volume of distribution of a particular drug will be
- a. Greater for drugs that concentrates in tissues rather than in plasma b. Greater for drugs that concentrates in plasma rather than in tissues
c. Independent of tissue concentration d. Independent of plasma concentration e. Approximately the same for all drugs in a given individual
40. In dosing drugs that are primarily excreted by the kidneys, one must have some idea of patient renal function. A calculated pharmacokinetic parameters that gives us reasonable estimate of renal function is
- a. Blood Urea Nitrogen b. Serum Creatinine c. Creatinine Clearance d. Urine Creatinine e. Free water clearance
41. Which of the following is not a postmortem change?
- a. Algor mortis b. Rigor mortis c. Atria mortis d. Livor mortis e. Pallor Mortis
42. All are features of somatic death, except
- a. Cessation of respiration b. Cessation of heart c. Non-responding muscles d. No response to external stimuli e. Non-reacting Pupils

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13. A 36-year-old man has had midepigastic abdominal pain for the past 3 months. An upper gastrointestinal endoscopy shows a 2-cm, sharply demarcated, shallow ulceration of the gastric antrum. A biopsy specimen of the ulcer base shows angiogenesis, fibrosis, and mononuclear cell infiltrates with lymphocytes, macrophages, and plasma cells. Which of the following terms best describes this pathologic process?
 a. Acute inflammation b. Serous inflammation c. Granulomatous inflammation d. Fibrinous inflammation e. Chronic inflammation
14. One month after appendectomy, a 25-year-old woman palpates a small nodule beneath the skin at the site of the healed right lower quadrant incision. The nodule is excised, and microscopic examination shows macrophages, collagen, a few small lymphocytes, and multinucleated giant cells. Polarizable, refractile material is seen in the nodule. What complication of surgery best accounts for these findings?
 a. Chronic inflammation b. Abscess formation c. Suture granuloma d. Ulceration e. Edema
15. A 9-year-old boy has had chronic cough & fever for the past month. CXR shows enlargement of hilar lymph nodes and bilateral pulmonary nodular interstitial infiltrates. Sputum sample shows acid-fast bacilli. Transbronchial biopsy specimen shows granulomatous inflammation within the lung, marked by the presence of Langhans giant cells. Which of the following mediators is most likely to contribute to giant cell formation?
 a. Tumor necrosis factor b. Complement C3b c. Leukotriene B d. Interferon- γ e. Interleukin-1
16. A cesarean section is performed on a 20-year-old woman to deliver a term infant, and the lower abdominal incision is sutured. The sutures are removed 1 week later. Which of the following statements best describes the wound site at the time of suture removal?
 a. Granulation tissue is still present b. Collagen degradation exceeds synthesis c. Wound strength is 80% of normal tissue
 d. Type IV collagen predominates e. No more wound strength will be gained
17. A 25-year-old man with fever & weight loss for the past 3 weeks. GPE was nonspecific. Laboratory tests revealed anemia and leukopenia. Multiple blood cultures for bacteria and fungi were negative. CT scan of the abdomen revealed splenomegaly. A bone marrow biopsy was performed, and a stained sample revealed amastigotes within mononuclear cells. Of the following, which one is the most likely cause?
 a. Leishmaniadonovani b. Plasmodium falciparum c. Toxoplasma gondii d. Trypanosomabrucei e. Trypanosomacruzi
18. A 30-year-old man presents with fever and increasing fatigue during the past week. On examination, he was febrile to 40°C, hypotensive, and tachycardic. Pertinent lab work revealed anemia. Blood smear revealed ring-shaped trophozoites within red blood cells. Of the following, which one is the most likely cause?
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19. A diabetic patient presents with bloody nasal discharge, orbital swelling and pain. Culture of periorbital pus showed branching septate hyphae. Which of the following is the most probable organism involved?
 a. Mucor b. Candida c. Aspergillus d. Rhizopus e. FusariumSolani
20. In malaria which of the following forms of plasmodium transmitted to man from mosquito?
 a. Sporozoites b. Gametocytes c. Merozoites d. Trophozoites e. Schizonts
21. Which of the following drugs has the highest therapeutic index?
 a. Clopidogrel b. Aspirin c. Morphine d. Warfarin e. Digoxin
22. Which of the following drugs is likely to have narrow therapeutic index?
 a. Antibiotics b. Antidepressants c. Antiepileptics d. Chemotherapy Drugs e. Steroids
23. A drug with a half life of 10 hours is administered by continuous intravenous infusion. Which of the following best approximates the time for the drug to reach steady state?
 a. 10 hours b. 20 hours c. 33 hours d. 40 hours e. 60 hours
24. Which of the following medications has the most potential to significantly impair the ability to drive an automobile?
 a. Diphenhydramine b. Levocitizine c. Fexofenadine d. Ranitidine e. Acetaminophen
25. Which of the following histamine receptors antagonists is known to enter CNS readily and is known to be sedative?
 a. Levocitizine b. Hydroxyzine c. Desloratidine d. Loratridine e. Fexofenadine
26. A patient has a severe ear infection that is associated with significant vertigo. Which of the following might be helpful?
 a. Azelastine b. Brompheniramine c. Meclizine d. Olopatadine e. Vertigomine
27. Potential adverse effect of serotonin agonist
 a. Hypotension b. Hyperglycemia c. Muscle Rigidity d. Renal failure e. Hypertension

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