

# 山东大学医学院

(2005 — 2006 学年第二学期)

## 2003 级 医学七年制 药理学期末考试试题 (A 卷)

FINAL EXAMINATION OF PHARMACOLOGY FOR 7-YMS-2003

题号	一	二	三	四	五	六	七	总分	统分人
得分									

得分	评卷人

一. 名词解释: (每题 2 分, 共 10 分)

1. after effect:

扣分	
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2. chemotherapeutic index:

扣分	
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3. reverse use-dependence:

扣分	
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4. CCNSA:

扣分	
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5. first-pass elimination:

扣分	
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得分	评卷人

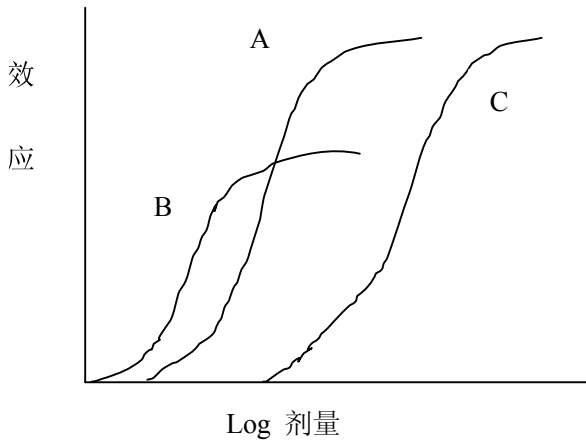
二、选择题：(A 型每题 0.5 分，X 型每题 1 分，共 50 分)

**Type A choice questions (only one answer is correct)**

1. Which of the following is classified as belong to the G-protein coupling receptors?
  - A. GABA<sub>A</sub> receptor
  - B.  $\beta$ -adrenergic receptor
  - C. insulin receptor
  - D. nicotinic II receptor
  - E. hydrocortisone receptor
2. Which of the following is unlikely to be associated with oral drug administration of an enteric-coated dosage form?
  - A. irritation to the gastric mucosa with nausea and vomiting
  - B. destruction of the drug by gastric acid or digestive enzymes
  - C. unpleasant taste of the drug
  - D. formation of nonabsorbable drug-food complexes
  - E. variability in absorption caused by fluctuations in gastric emptying time
3. Which of the following compounds will be absorbed to the least extent in the stomach?
  - A. ampicillin ( $pK_a=2.5$ )
  - B. aspirin ( $pK_a=3.0$ )
  - C. warfarin ( $pK_a=5.0$ )
  - D. Phenobarbital ( $pK_a=7.4$ )
  - E. propranolol ( $pK_a=9.4$ )
4. Which of the following terms is most likely to be associated with “a rapid reduction in the effect of a given dose of a drug after only one or two doses”?
  - A. supersensitivity
  - B. tachyphylaxis
  - C. tolerance
  - D. hyposensitivity
  - E. anaphylaxis
5. A weak acidic drug with 4.4 of  $pK_a$ , if the stomach juice pH is 1.4, plasma pH is 7.4, when the distribution balance is reached, the drug concentration ratio between plasma and stomach juice is
  - A. 100
  - B. 0.001
  - C. 1000
  - D. 10000
  - E. 0.01

6. In this graph, drugs A, B and C are analogs, then

- A. A has a greater potency than B
- B. A has a greater efficacy than C
- C. B has less potency than C
- D. A has a greater potency than C
- E. B has a greater efficacy than C

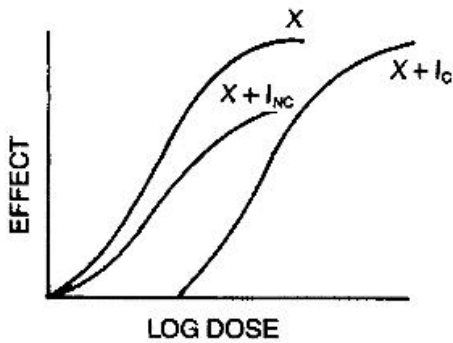


7. Aspirin is a weak acid with 3.5 of pKa, what percentage of lipid-soluble form will be in the stomach juice with 2.5 of pH?

- A. 0.99%
- B. 9%
- C. 9.09%
- D. 90.9%
- E. 99.9%

8. The contractile effect of various doses of norepinephrine (NE) ( $X$ ) alone on vascular smooth muscle is represented in the figure below. When combined with an antagonist ( $I_C$  or  $I_{NC}$ ), a shift in the dose-response curve occurs. The curve labeled  $X+I_{NC}$  would mostly likely occur when vascular smooth muscle is treated with NE in the presen

- A. terazosin
- B. phentolamine
- C. labetalol
- D. phenoxybenzamine
- E. prazosin



9. The reversible cholinesterase inhibitor indicated in the treatment of Alzheimer's disease is
- tacrine
  - edrophonium
  - neostigmine
  - pyridostigmine
  - ambenonium
10. A predictably dangerous side effect of nadolol that constitutes a contraindication to its clinical use in susceptible patients is the induction of
- hypertension
  - cardiac arrhythmia
  - asthmatic attacks
  - respiratory depression
  - hypersensitivity
11. Epinephrine may be mixed with certain anesthetics, such as procaine, in order to
- stimulate local wound repair
  - promote hemostasis
  - enhance their interaction with neural membranes and their ability to depress nerve conduction
  - retard their systemic absorption
  - facilitate their distribution along nerves
12. A 58-year-old male with angina is treated with atenolol. Select the mechanism of action of atenolol
- $\alpha$ -adrenergic agonist
  - $\alpha$ -adrenergic antagonist
  - $\beta$ -adrenergic agonist
  - $\beta$ -adrenergic antagonist
  - mixed  $\alpha$  and  $\beta$  antagonist
13. A male patient is brought to the emergency department following ingestion of an unknown substance. He is found to have an elevated temperature, hot and flushed skin, dilated pupils, and tachycardia. Of the following, which would most likely cause these findings?

- A. propranolol
- B. tolazoline
- C. prazosin
- D. donepezil
- E. atropine

14. A 65-year-old male has a blood pressure of 170/105mmHg. Which of the following would be effective in lowering this patient's blood pressure?

- A. terbutaline
- B. dobutamine
- C. pancuronium
- D. prazosin
- E. scopolamine

15. Which of the following can be used in shock for increasing cardiac output and renal blood flow?

- A. norepinephrine
- B. epinephrine
- C. dopamine
- D. phenylephrine
- E. methoxamine

16. All of the following statements are related with succinylcholine EXCEPT

- A. have muscle fasciculation before muscle relaxation
- B. have no ganglionic blocking actions at therapeutic dose
- C. can be antagonized by neostigmine
- D. elevate blood potassium concentration
- E. assistant agents of anesthetics

17. The agent which is effective for prostatic hyperplasia but has no effect on blood pressure is

- A. terazosin
- B. tamsulosin
- C. phenoxybenzamine
- D. regitine
- E. prazosin

18. Which of the following statements is correct?

- A. Diazepam induce the drug metabolizing enzymes.
- B. All benzodiazepines show antiepileptic actions.
- C. All benzodiazepines have sedative effects.
- D. Benzodiazepines readily produce general anesthesia.
- E. Benzodiazepines directly open chloride channels.

19. Which of the following statements is correct?

- A. Chlorpromazine is indicated in treating the nausea of levodopa treatment.
- B. Vitamin B<sub>6</sub> increases the effectiveness of levodopa.

- C. Administration of dopamine is an effective treatment of Parkinson's disease.
- D. Levodopa-induced nausea is reduced by carbidopa.
- E. Nonspecific MAO-inhibitors are a useful adjunct to levodopa therapy.
20. Which of the following is common to the tricyclic antidepressants and MAO inhibitors?
- A. They can produce sedation.
- B. They produce physical dependence.
- C. They show strong interaction with certain foods.
- D. They can produce postural hypotension.
- E. They decrease availability of epinephrine in the synaptic cleft
21. The antipsychotic drugs:
- A. are equally effective against the positive and negative symptoms of schizophrenia
- B. can cause blurred vision, urinary retention and other signs of muscarinic blockade
- C. bind selectively to D<sub>2</sub>-dopaminergic receptors.
- D. have antiparkinsonism effects similar to levodopa.
- E. have a rapid onset of antipsychotic action.
22. All of the following are observed in patients taking neuroleptic agents EXCEPT:
- A. sexual dysfunction.
- B. bronchial asthma
- C. altered endocrine function.
- D. constipation.
- E. orthostatic hypotension
23. Which of the following statements about morphine is INCORRECT?
- A. It is used therapeutically to relieve pain caused by severe head injury.
- B. Its withdrawal symptoms can be relieved by methadone.
- C. It causes constipation.
- D. It is most effective by parenteral administration.
- E. It rapidly enters many body tissues, including the fetus of a pregnant woman.
24. Which of the following statements concerning phenytoin is INCORRECT?
- A. causes less sedation than phenobarbital.
- B. causes gingival hyperplasia.
- C. may cause megaloblastic anemia
- D. is excreted unchanged in the urine.
- E. The plasma half-life increases as the dose is increased.
25. Which of the following drugs is contraindicated in the patients with epilepsy?
- A. Phenobarbital
- B. imipramine
- C. digoxin
- D. chlorpromazine
- E. aspirin
26. The agent which is effective for various epilepsy is

- A. diazepam
- B. sodium phenytoin
- C. sodium valproate
- D. Phenobarbital
- E. ethosuximide

27. All of the following produce a significant decrease in peripheral resistance EXCEPT:

- A. chronic administration of diuretics
- B. hydralazine
- C. ACE inhibitors
- D.  $\beta$ -R blockers
- E. calcium channel blockers

28. Which of the following hypertensive patients is most suitable for primary therapy with hydrochlorothiazide?

- A. patients with gout
- B. patients with hyperlipidemia
- C. young hypertensive patients with rapid resting heart rate
- D. patients with impaired renal function
- E. elderly patients

29. Regarding antihypertensive drugs, which of the following statements is WRONG?

- A. Hydrochlorothiazide can increase activity of rennin
- B. Propranolol can decrease secretion of rennin
- C. Sodium nitroprusside lowers BP rapidly by releasing NO.
- D. Clonidine stimulates  $\alpha_2$ -receptor and imidazoline receptor
- E. Diuretics decreased BP mainly by increasing water and sodium excretion from the kidneys.

30. Which of the following drugs occurs orthostatic hypotension most frequently in first use:

- A. clonidine
- B. nifedipine
- C. propranolol
- D. enalapril
- E. prazosin

31. The reason that digoxin can reduce the ventricular rate of atrial fibrillation patient is:

- A. decreasing automaticity of ventricles
- B. decreasing automaticity of atria
- C. reducing the conduction of A-V node
- D. improving cardiac ischemia
- E. shortening the effective refractory period of atria

32. All of the following measures can be used in the treatment of digoxin-induced arrhythmia EXCEPT

- A. stopping digoxin administration

- B. diuretic agents such as furosemide are used to promote the excretion of digoxin
  - C. phenytoin administration
  - D. atropine administration
  - E. lidocaine administration
33. Which of the following effects of digoxin can NOT be seen in failure heart?
- A. slowing sinus rhythm
  - B. increasing the oxygen consumption of myocardia
  - C. increasing the cardiac output
  - D. increasing the cardiac contractility
  - E. shortening atrial ERP
34. A 70-year-old female is treated with sublingual nitroglycerin for her occasional bouts of angina. Which of the following is involved in the action of nitroglycerin?
- A.  $\alpha$ -adrenergic activity
  - B. phosphodiesterase activity
  - C. phosphorylation of light chains of myosin
  - D. norepinephrine release
  - E. cGMP increased
35. The therapeutic effect of  $\beta$ -adrenergic receptor blockers such as propranolol in angina pectoris is believed to be primarily the result of
- A. reduced production of catecholamines
  - B. dilation of the coronary vasculature
  - C. decreased requirement for myocardial oxygen
  - D. increased peripheral resistance
  - E. increased sensitivity to catecholamines
36. A 69-year-old male with angina develops severe constipation following treatment with
- A. nitroglycerin
  - B. gemfibrozil(吉非贝齐)
  - C. propranolol
  - D. captopril
  - E. verapamil
37. Which of the following drugs has relatively few electrophysiologic effects on normal myocardial tissue but suppresses the arrhythmogenic tendencies of ischemic myocardial tissue?
- A. Verapamil
  - B. Lidocaine
  - C. Quinidine
  - D. Propranolol
  - E. Procainamide
38. The first-line drug for treating acute attack of reentrant supraventricular tachycardia is
- A. adenosine



- B. lidocaine
- C. quinidine
- D. digoxin
- E. procainamide

39. Which of the following drugs is NOT suitable to treat the patient with angina pectoris accompanied with asthma?

- A. nifedipine
- B. isosorbide dinitrate
- C. nitroglycerin
- D. verapamil
- E. propranolol

40. Which of the following drugs decreases de novo cholesterol biosynthesis by inhibiting the enzyme HMG CoA reductase?

- A. nicotinic acid
- B. gemfibrozil
- C. lovastatin
- D. cholestyramine(考来烯胺)
- E. probucol

41. Which of the following drugs can be used for Diabetics (type II) with renal insufficiency

- A. gliclazide
- B. tolbutamide
- C. glibornuride
- D. gliquidone
- E. glipizide

42. The contraindication of Glucocorticoids is

- A. septicemia
- B. iritis
- C. dermatomyositis
- D. epidemic parotitis(流行性腮腺炎)
- E. peptic ulcer

43. Antiasthmatic that could inhibit leukotrienes release and increase cerebral blood flow is

- A. zileuton
- B. pemirolast
- C. ibudilast
- D. zafirlukast
- E. montelukast

44. Which of the following statements about acetazolamide is WRONG?

- A. diuretic action
- B. depresses the intracranial pressure
- C. acidify blood

- D. alkalized urine  
E. hyperkalemia
45. Which of the following drugs could promote macrophage production and enhance the nonspecific immunologic function
- A. erythropoietin
  - B. thrombopoietin
  - C. M-CSF
  - D. Multi-CSF
  - E. G-CSF
46. Which of the following can be used for megaloblastic anemia
- A. folic acid
  - B. folic acid +VitB<sub>12</sub>
  - C. folic acid +VitB<sub>6</sub>
  - D. folic acid +VitB<sub>12</sub> +VitB<sub>6</sub>
  - E. folic acid +VitB<sub>12</sub>+VitB<sub>6</sub>+VitC
47. All of the following are true about hydrochlorothiazide EXCEPT
- A. It can be used to treat hypercalcinuria
  - B. It can lead to hypoglycemia
  - C. It can increase the secretion of K<sup>+</sup> then cause hypokalemia
  - D. It can decrease blood pressure mildly
  - E. It can decrease the urinary output of diabetes insipidus patients
48. Which of the statements about thiourea is WRONG?
- A. They inhibit synthesis of thyroxine
  - B. They have immunosuppressive effect
  - C. Propylthiouracil stimulates T<sub>4</sub> transform to T<sub>3</sub>
  - D. They can cause thyroid enlargement when long term used
  - E. They can excrete from milk and pass through placenta barrier
49. The antibiotics which are potent against the pseudomonas aeruginosa are
- A. carbenicillin, polymyxin, gentamycin and tobramycin
  - B. kanamycin, tobramycin, polymyxin and erythromycin
  - C. amikacin, gentamycin, polymyxin and oxacillin
  - D. amikacin, gentamycin, chloramphenicol and spectinomycin
  - E. carbenicillin, ampicillin, Cephalexin and polymyxin
50. Which of the following compatibility administration is correct?
- A. streptomycin + gentamicin
  - B. penicillin + gentamicin
  - C. streptomycin + furosemide
  - D. penicillin + tetracycline
  - E. penicillin + chloramphenicol
51. Clavulanic acid can inhibit which one of the following enzymes?

- A. Dihydrofolate synthetase
  - B. peptidoglycan synthetase
  - C.  $\beta$ -lactamase
  - D. DNA polymerase
  - E. dihydrofolate reductase
52. The agent which can relieve AIDS and AIDS correlating syndrome is
- A. idoxuridine
  - B. zidovudine
  - C. acyclovir
  - D. ribavirin
  - E. adenine arabinoside
53. Which of the following imidazoles have NO effect on fungus ?
- A. metronidazole
  - B. miconazole
  - C. clotrimazole
  - D. fluconazol
  - E. ketoconazole
54. Herxheimer reaction is caused by penicillin when it is used to treat:
- A. lobar pneumonia
  - B. tetanus
  - C. viridans endocarditis
  - D. bacterial meningitis
  - E. leptospirosis
55. Of the following, which is the best agent to use in pregnant patient with urinary tract infection (UTI) caused by *Chlamydia trachomatis*?
- A. tetracycline
  - B. levofloxacin
  - C. gentamycin
  - D. erythromycin
  - E. SMZ-TMP
56. The  $t_{1/2}$  of which of the following tetracyclines remains unchanged when the drug is administered to an anuric patient
- A. methacycline
  - B. oxytetracycline
  - C. doxycycline
  - D. tetracycline
  - E. none of the above
57. A 45-year-old female being treated for a chronic UTI develops acute alcohol intolerance. Which of the following agents could have caused this intolerance?
- A. cefoperazone

- B. amoxicillin
- C. SMZ
- D. norfloxacin
- E. tetracycline

58. A patient with a pneumonia has a sputum culture that is positive for a staphylococcal strain that is  $\beta$ -lactamase-positive. Which is the best choice of penicillin therapy in this patient?

- A. ampicillin
- B. oxacillin
- C. penicillin V
- D. penicillin G
- E. carbenicillin

59. A 75-year-old woman is hospitalized for pneumonia and treated with an intravenous antibiotic. On day three, she develops severe diarrhea. Stool is positive for *Clostridium difficile* toxin. What is the best treatment?

- A. clindamycin
- B. cefaclor
- C. metronidazole
- D. erythromycin
- E. doxycycline

60. The mechanism of action of chloramphenicol as an antibiotic is that it

- A. binds to the 30s ribosome subunit
- B. binds to the 50s ribosome subunit
- C. prevents cell membrane development
- D. inhibits cell-wall synthesis
- E. inhibits RNA polymerase

### Type X choice questions (one or more answers are correct)

1. If the plasma concentration of a drug declines with “first-order kinetics”, it means that
  - A. There is only one metabolic path for drug disposition
  - B. The half-life is the same regardless of plasma concentration
  - C. The drug is largely metabolized in the liver after oral administration and has low bioavailability
  - D. The rate of elimination is proportional to the plasma concentration
  - E. the metabolic ability has reached saturation.
2. Of the following, which will be blocked by atropine and scopolamine?
  - A. bradycardia
  - B. salivary secretion
  - C. bronchoconstriction

- D. skeletal muscle contraction
  - E. miosis
3. The agents which can be used to treat glaucoma have
- A. timolol
  - B. pindolol
  - C. physostigmine
  - D. acetazolamide
  - E. pilocarpine
4. A 34-year-old woman with schizophrenia has been treated for several years with various drugs. She is now being treated with fluphenazine and complains of amenorrhea(闭经) and galactorrhea (溢乳) . Which of the following drugs would be appropriate to switch her medication to
- A. haloperidol
  - B. risperidone (利培酮)
  - C. olanzapine (奥氮平)
  - D. clozapine
  - E. thioridazine
5. Which of the following drugs may cause dependence?
- A. methadone
  - B. naloxone
  - C. ibuprofen
  - D. buspirone
  - E. diazepam
6. Which of the following drugs can be used in treatment of depressive disorder?
- A. imipramine
  - B. fluoxetine
  - C. perphenazine
  - D. selegiline
  - E. paroxetine
7. The agents which are effective in the treatment of Parkinson's disease are
- A. pirenzepine
  - B. amantadine
  - C. anisodamine
  - D. levodopa
  - E. scopolamine
8. Which of the following statements about the treatment of chronic heart failure are right?
- A. Patients with evidence of fluid retention should receive a diuretic.
  - B. Treatment with an ACE inhibitor and a  $\beta$ -R blocker should be initiated and maintained unless specifically contraindicated.
  - C. Digoxin may be added if needed to reduce symptoms or to slow the ventricular repopulation

in patients with rapid atrial fibrillation.

D. Patients with severe heart failure should also receive a  $\beta$ -R blocker

E. Spironolactone may reduce mortality in patients with severe heart failure

9. Precautions advisable when using lovastatin include

A. serum transaminase measurements

B. renal function studies

C. acoustic measurement

D. serum creatinine kinase measurements

E. monthly complete blood counts

10. Precautions advisable when using amiodarone include

A. serum transaminase measurements

B. renal function studies

C. acoustic measurement

D. serum T3、 T4 measurements

E. X-ray chest check

11. In a hypertensive patient who is taking insulin to treat diabetes, which of the following drugs is to be used with extra caution and advice to the patient?

A. prazosin

B. hydralazine

C. propranolol

D. captopril

E. losartan

12. Drugs that can enhance the sensitivity of insulin include

A. repaglinide

B. rosiglitazone

C. pioglitazone

D. acarbose

E. metformin

13. The antiinflammatory mechanisms of glucocorticoids (GCS) include

A. GCS combined with GRE ,induce synthesis of ACE

B. GCS combined with GRE ,induce synthesis of lipocortin-1

C. GCS combined with nGRE ,inhibit the expression of ICAM-1 and ELAM-1

D. GCS promote the apoptosis of inflammatory cell

E. GCS combined with steroid receptor of cell membrane and mitochondrial membrane.

14. Which of the following statements about cimetidine are WRONG

A. increase the secretion of gastric acid

B. block androgen receptor

C. enhance the immunologic function

D. induce acne (痤疮)

E. treat zolinger-Ellison syndrom and countercurrent esophagitis

15. Which of the following megaloblastic anemia are NOT the indication of folic acid
- A. megaloblastic anemia caused by AIDS
  - B. megaloblastic anemia caused by TMP
  - C. megaloblastic anemia caused by MTX
  - D. megaloblastic anemia caused by pyrimethamine(乙胺嘧啶)
  - E. megaloblastic anemia caused by malignant tumor
16. The drugs which can protect gastric mucosa and inhibit helicobacter pylori include
- A. omeprazole
  - B. sucralfate
  - C. colloidal bismuth subcitrate
  - D. cimetidine
  - E. pirenzepine
17. Quinolones can NOT be used to patients who
- A. have epilepsy history
  - B. are in growth and development period
  - C. are taking antiacid
  - D. are pregnant
  - E. are allergic to penicillin
18. Besides their antibacterial activity, macrolides agents also
- A. promote gastrointestinal motility
  - B. have strong immunosuppressive action
  - C. be used to treat bronchial asthma
  - D. expel parasite in intestinal tract
  - E. have antitumor action
19. Of the following, the true statements about Rifampin are
- A. it can produce resistance to mycobacterium tuberculosis when administered only
  - B. it is effective on chlamydia trachomatis
  - C. it has no effect on Staphylococcus aureus
  - D. it is inductor of liver drug enzyme
  - E. it can interfere with RNA synthesis
20. The agents that can inhibit bacterial protein synthesis include
- A. clindamycin
  - B. streptomycin
  - C. amantadine
  - D. isoniazide
  - E. azithromycin

得分	统分人

三. 问答题: (每题 10 分, 共 40 分)

1. Please estimate the antiasthmatic actions and uses of Glucocorticoids.

扣分	评卷人

2. Please describe the antithrombotic mechanism and adverse reactions of Aspirin.

扣分	评卷人

3. Please describe the advantages and disadvantages of ACE inhibitors and angiotensin II type 1 receptor blockers.

扣分	评卷人

4. Please explain the adverse reactions of tetracyclines.

扣分	评卷人



# 2003 级医学七年制药理学期末考试试题 (A 卷) 标准答案

## 一、名词解释

- 1. after effect:** 后遗效应指停药后血药浓度降至阈浓度以下时残存的药理效应 (2 分)。
- 2. chemotherapeutic index:** 化疗指数指动物实验的 LD<sub>50</sub>/ED<sub>50</sub> 或 LD<sub>5</sub>/ED<sub>95</sub> 的比值 (2 分)。
- 3. reverse use-dependence:** 翻转使用依赖性指心率快时, 药物延长动作电位时程的作用不明显, 而心率慢时却使动作电位时程明显延长 (2 分)。
- 4. CCNSA:** 细胞周期非特异性药物指能杀灭处于增殖周期各时相的细胞甚至包括 G<sub>0</sub> 期细胞的药物 (2 分)。
- 5. first-pass elimination:** 首关消除指从胃肠吸收入门静脉系统的药物在到达全身血循环前有部分经肝脏代谢, 使进入全身血循环内的有效药量明显减少 (2 分)。

## 二、选择题

- 1.A 2.E 3.E 4.B 5.C 6.D 7.D 8.D 9.A 10.C 11.D 12.D 13.E  
14.D 15.C 16.C 17.B 18.C 19.D 20.D 21.B 22.B 23.A 24.D 25.D 26.C 27.D  
28.E 29.E 30.E 31.C 32.B 33.B 34.E 35.C 36.E 37.B 38.A 39.E  
40.C 41.D 42.E 43.C 44.E 45.C 46.E 47.B 48.C 49.A 50.B 51.C  
52.B 53.A 54.E 55.D 56.C 57.A 58.B 59.C 60.B 61.BD 62.ABCE  
63.ACDE 64.BCD 65.AE 66.ABDE 67.BDE 68.ABCE 69.AD 70.ADE  
71.CD 72.BC 73.ABCDE 74.AD 75.BCD 76.ABC 77.ABCD  
78.ABCDE 79.ABDE 80.ABE

## 三、问答题

### 1. Please estimate (review) the antiasthmatic actions and uses of Glucocorticoids (10 分)

答: Glucocorticoids 对各种原因所致的哮喘及对其他药物无效的哮喘均有良效, 是目前平喘作用最强的一类药物 (1 分)

据用药途径或方式不同分为两种:

一、全身给药 (吸收作用):

GCS 产生强大的抗炎、抗过敏作用, 抑制多种炎细胞因子和致喘因子如 LTs、PGF<sub>2</sub> α、组胺等的合成释放而产生强大快速平喘作用。(2 分)

全身给药主要用于对其他药物无效的哮喘持续状态或重度哮喘或抢救危重哮喘病人, 但长期用药全身不良反应多且重。(2 分)

二、局部给药 (雾化吸收):

1. 抑制参与哮喘的炎细胞数量、功能、抑制过敏介质释放, 产生强大抗炎平喘作用 (1 分)

2. 抑制炎症介质 (LTs、PGs、TAX2、PAF) 产生 (1分)
3. 降低支气管平滑肌对致喘因子 (Ag、Ach、冷空气等) 的反应性 (1分)
4. 增强支气管对儿茶酚胺的敏感性, 产生平喘作用 (1分)

局部给药主要用于其他药不能控制的慢性哮喘的维持治疗, 对急症不能缓解。起效慢, 对哮喘持续状态疗效差, 全身不良反应少 (1分)

## 2. Please describe the antithrombotic mechanisms and adverse reaction of Aspirin (10分)

答: 抗栓机制:

Aspirin 抑制 COX-1 (1分), 抑制 TXA<sub>2</sub> 的合成, 抑制血小板聚集 (1分), 抑制 PGI<sub>2</sub> 的合成, 促进血栓形成 (1分) 小剂量 Aspirin 能显著减少 TXA<sub>2</sub>, 而对 PGI<sub>2</sub> 合成无明显影响。因此每天小剂量 Aspirin 可防止血栓性疾病 (2分)。

不良反应:

1. 胃肠反应: 最常见。症状。直接刺激与抑制 PGE<sub>2</sub>。(1分)
2. 加重出血倾向: (1分)
3. 水杨酸反应: 剂量过大引起。症状。(1分)
4. 过敏反应: 如 Aspirin 哮喘。与白三烯等生成增多有关。(1分)
5. 瑞夷综合征: 有病毒感染的儿童使用 Aspirin 可引起急性肝脂肪变性-脑病综合征 (1分)

## 3. Please discuss the advantages and disadvantages of ACE inhibitors and angiotensin II type 1 receptor blockers (ARB) (10分)

答: ACE inhibitors 通过抑制 ACE, 减少 Ang II 的生成和保存 BK 发挥药理作用 (2分)。

Ang II 也可通过糜酶旁路产生, 故 ACE 抑制药不能完全阻滞 Ang II 的产生 (1分)。

而 ARB 是阻断 Ang II 的 1 型受体, 因此作用比 ACE 抑制药更完全 (1分)。

此外, ARB 不抑制 ACE, 因而不产生缓激肽等引起的咳嗽、血管神经性水肿等不良反应, 在不能耐受 ACE 抑制药的咳嗽病人, 可改用 ARB。(2分)

但它缺乏 ACE 抑制药的缓激肽-NO 途径的心血管保护作用, 也无增敏胰岛素作用。(2分)

目前大多数研究资料表明, ARB 与 ACE 抑制药在抗高血压和心力衰竭治疗时疗效相似, 临床一般首选 ACE 抑制药, 若不能耐受可改用 ARB。(2分)

## 4. Please explain the adverse reactions of tetracyclines (10分)

答: 1. 胃肠道反应: 症状, 与食物同服或减小用量可减轻 (2分)

2. 二重感染: 如白色念珠菌感染, 伪膜性肠炎 (2分)

3. 四环素牙、抑制婴幼儿骨骼生长: 因易与其中的钙相结合 (2分)

4. 肝毒性 或 肾毒性 (2分)

5. 光敏反应 或 前庭反应 (2分)

