11.4 Cardiovascular and renal drugs

Name: _____ Class: _____ Date: _____ **Total: 24 marks**

KEY WORDS diuretic • anticoagulant

Objective

Mechanisms to pressures; sites to electrolytes; monitors to anticoagulants.

1 Key knowledge and worked examples

■ Steps and sites

Antihypertensives: volume (diuretics), ACE inhibitors (bradykinin cough), ARBs, CCBs, β1 blockers ✓. Diuretic sites: loop (Na^+-K^+-$2Cl^-$, ~25 % Na^+), thiazide (distal), K-sparing (collecting duct) ✓.

■ Worked example: monitors

Heparin immediate → aPTT; warfarin blocks NEW factor carboxylation → INR after days of factor decay ✓; DOACs: one factor, predictable.

2 Practice

2.1 Which antihypertensive class causes a dry bradykinin cough? [3]

2.2 Which nephron segment does the thiazide act on? [3]

2.3 Which test monitors warfarin? [3]

exercises.lol exercises.com.cn

3 Exam-style questions

3.1 Three illustrative diuretics at their sites: loop, thiazide, K-sparing.

For each, state the transport target and rank the Na^+ effect (loop ~25 % > thiazide > K-sparing) ✓. Predict the electrolyte fingerprint of the loop agent (K^+ loss, Ca^{2+} loss via downstream flow) versus the K-sparing agent (K^+ retained) ✓. [8]

3.2 A fictional patient on warfarin starts an illustrative course of an enzyme-inhibiting antibiotic; a second starts an enzyme inducer.

Predict each INR direction (inhibitor → INR rises; inducer → INR falls) with the kinetic reason (substrate cleared slower vs faster) ✓. Explain why warfarin's onset lags days regardless (stored factors must decay; it blocks carboxylation of NEW factors) ✓. [7]

exercises.lol exercises.com.cn