Achievable

USMLE STEP 1 DUMP SHEET

Cardiovascular pathology

Ischemic heart disease

- **Stable angina:** exertional; fixed stenosis over 75%
- **Unstable:** rest pain, plaque rupture. **Prinzmetal:** vasospasm
- **Troponin I, T:** rise in 4—6 h; CK-MB flags reinfarction

Infarct	Artery	Leads
Anteroseptal	LAD	V1—V2
Anterior	LAD	V1—V4
Lateral	Circumflex	I, aVL
Inferior	RCA (usually)	II, III, aVF
Posterior	PDA	Tall R, ST ↓ in V1—V2

- **RV infarct:** with inferior MI; hypotension, JVD, clear lungs; avoid nitrates

Myocardial infarction over time

Time	Findings
0—6 h	No gross change; wavy fibers
6—24 h	Coagulative necrosis begins, early neutrophils
1—3 d	Neutrophils; nuclei and striations lost
3—7 d	Macrophages, soft center: rupture risk peaks
7—14 d	Granulation tissue
2—8 wk	Collagen scar; later aneurysm, Dressler
Reperfused	Contraction band necrosis

- **Rupture:** free wall (tamponade); septum or papillary muscle (murmur)
- **Sudden cardiac death:** within 1 h of symptoms, usually VF

Heart failure

- **Systolic:** EF under 40%. **Diastolic:** stiff ventricle, EF kept
- **Left:** orthopnea, PND; hemosiderin "heart failure cells"
- **Right:** usually from left failure; JVD, hepatomegaly, edema

Vasculitis

Disease	Clue
Giant cell	Older women; jaw claudication, ↑ ESR, blindness
Takayasu	Young Asian women; weak arm pulses
PAN	Hepatitis B; spares lung; renal aneurysms
Kawasaki	Children; coronary aneurysms
Buerger	Smokers; digital ischemia
GPA	c-ANCA (PR3); sinus, lung, kidney
MPA, EGPA	p-ANCA (MPO); EGPA: asthma, eosinophils
HSP	Henoch-Schönlein: IgA; children; palpable purpura

Cardiomyopathies

Type	Causes and clues
Dilated	Alcohol, Coxsackie B, doxorubicin, thiamine; systolic failure
Hypertrophic	Dominant β-myosin; septal hypertrophy, disarray; sudden death
Restrictive	Amyloid, sarcoid, hemochromatosis; low-voltage ECG
Takotsubo	Stress; apical ballooning, normal coronaries

- **HCM murmur:** ↑ with Valsalva, standing; ↓ with squatting, handgrip

Valves and murmurs

Lesion	Murmur and clues
AS	Ejection systolic; calcific or bicuspid; angina, syncope
MR	Holosystolic to axilla; MVP, post-MI, rheumatic
MVP	Midsystolic click; myxomatous; Marfan
AR	Early diastolic decrescendo; wide pulse pressure
MS	Opening snap, rumble; rheumatic; left atrial thrombus
TR	Holosystolic, louder on inspiration; IV drug use

- **Rheumatic fever:** after strep pharyngitis; anti-M protein antibodies cross-react with myosin (type II); Aschoff bodies

Endocarditis and pericardium

- **Acute:** *S. aureus*; IV drugs → tricuspid. **Subacute:** viridans strep
- **Signs:** Janeway (painless), Osler nodes (painful), Roth spots
- **Libman-Sacks:** SLE, sterile. **Marantic:** cancer, sterile
- **Pericarditis:** better leaning forward; rub; diffuse ST elevation
- **Tamponade:** Beck triad, pulsus paradoxus, electrical alternans
- **Constrictive:** Kussmaul sign, pericardial knock

Arrhythmias

- **WPW:** delta wave (bundle of Kent); avoid AV nodal blockers
- **Mobitz I:** PR lengthens. **Mobitz II:** sudden drop; pace
- **Torsades:** long QT, ↓ Mg2+, ↓ K+

Vessels

- **Atheroma:** oxidized LDL → foam cells → fatty streak → plaque
- **Hyaline arteriolosclerosis:** diabetes. **Onion skin:** malignant hypertension
- **Dissection:** hypertension, Marfan; tearing pain, wide mediastinum
- **Cholesterol emboli:** blue toes, eosinophilia. **Fat:** petechiae