ACS (Acute Coronary Syndrome)

Definition

Spectrum of problems ranging from unstable angina to MI

Symptoms

Crushing pain/pressure; radiation to jaw, back, and left arm; SOB, diaphoresis, N/V; impending sense of doom

Most common etiology of MI

Preexisting atherosclerotic plaque ➔ thrombus formation ➔ prolonged myocardial ischemia ➔ MI

EKG changes

Acute MI: progression from peaked T- waves ➔ ST-de gment elevation/depression ➔ Q-wave ➔T-wave inversions (hours-days)

Laboratory Tests

EKG (within 10 min), troponin levels, CK:CK-MB ratio, MRI with gadolinium

Stable Angina

Reproducible pain, improved with rest, lasts <10min,

UA/NSTEMI

Occurs more often with less activity, not relieved with NTG, lasts >10min, EKG changes

STEMI

Complete occlusion, EKG changes

ACS (Acute Coronary Syndrome) (cont)

Initial Treatment

ONAM: Oxygen, +/- nitro, antiplatelets (ASA+P2Y12), morphine (PRN), EKG monitoring, IV access

Discharge Treatment

1) ASA (life)
2) P2Y12 (1yr)
3) Statin
4) ß-blocker
5) ACE-I
6) Aldosterone antagonist

Emergency Intervention

Door-to-needle within 30min; door-to-balloon within 90min

Congestive Heart Failure (CHF)

Definition

Inability of the heart to keep up the the demands on it and pump blood with normal efficiency

Result of one or more of the following

Contractile ability of heart muscle, preload and after load of the ventricle, and heart rate

Etiology

MI, pericardial disorders, valvular disorders, congenital abnormalities, and non cardiac causes (high-output heart failure from thyrotoxicosis or severe anemia)

Clinical features of HFrEF/LHF

Exertional dyspnea, non-produ ctive cough, fatigue, orthopnea, PND, basilar rales, gallops, exercise intolerance

Congestive Heart Failure (CHF) (cont)

Clinical features of HFpEF/RHF

Distended neck veins, hepatic congestion, nausea, dependent pitting edema, *edema + hepatomegaly, (R-sided failure often caused by L-sided failure)

Treatment

1) Loop
2) ACE-I
3) ß-blocker
4) Spironolactone
5) Hydralazine + ISDN (esp in blacks)

Hypertension

Primary HTN

Causes 95% of cases of HTN; multifactorial pathogenesis (genetics, salt, obesity, RAAS, NSAIDs, smoking, lack of exercise, metabolic syndrome)

Secondary HTN

Narrowing of aorta, RAS, chronic steroids, Cushings syndrome, pregnancy, thyroid and parathyroid disease, primary hyperaldosteronism, parenchymal renal dz)

Treatment Goal

All ages with DM or CKD ≤140/90
Ages <60yo ≤140/90
Ages ≥60yo ≤150/90

Treatment

First line: ACE-I/ARB, CCB, thiazides
Other: alpha blockers, clonidine, guanfacine, hydralazine, minoxidil,

Ischemic Heart Disease

Definition

Characterized by insufficient oxygen supply to cardiac muscle

Etiology

1) Atherosclerotic narrowing (most common). 2) Constriction of coronary arteries. 3) (Rare) congenital, emboli, arteritis, dissection

Risk Factors

Metabolic syndrome, male, older age, smoking, FmHx, HTN, DM, low-estrogen state, abdominal obesity, inactivity, dyslipidemia, EtOH, low fruits/veggies (cocai ne ➔ MI)

Un/stable Angina

See Above

Prinzmetal's (Variant) Angina

Caused by vasospasm at rest, exercise capacity preserved. Treated with CCBs, avoid ß-blockers

EKG Findings

Horizontal or downsloping ST-segment depression

Treatment

Lifestyle changes, nitrates (nitro and LA), B-blockers, CCB, Ranolazine, ASA/Clopidigrel, revascularization