

EM Basic- MI and ACS

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Acute Coronary Syndrome- a spectrum of disease

Does NOT include low-risk chest pain (we admit low-risk chest pain to RULE OUT ACS)

Unstable Angina

Pathophysiology

Fixed coronary stenosis that causes symptoms only when under stress
Can represent a patient with a "normal cath" with 30% stenosis

Definition

Chest pain that is new or different, occurs at rest, or is different in intensity, character, or exertion level required to give chest pain
Pneumonic- Random UA or RND-UA Rest, New, or Different
+ or – EKG changes but NO evidence of STEMI

Treatment

Aspirin- 325mg PO (Plavix (clopidogrel) 75mg PO if aspirin allergic)

Anticoagulation- talk to cardiologist regarding choice of agent

Heparin drip- 60-70 units/kg bolus then 12-15 units/kg per hour

MAX dose- 5,000 unit bolus and 1,000 units per hour

Advantage- easy on, easy off

Disadvantage- some studies show lovenox to be superior

Lovenox (enoxaparin)- 1 mg/kg subcutaneous

Advantage- may be superior in UA/NSTEMI

Disadvantage- difficult to reverse if patient has bleeding

Nitroglycerin

Dosing- Sublingual tablets are 400 micrograms, work over 5 minutes (80 mcg/minute)

Nitro Drip- start at 80 – 100 mcg/minute and titrate to relief of chest pain or systolic above 100

CAUTION- Patients with posterior MI (preload dependent)

CONTRAINDICATED- Cialis (tadalafil) in past 72 hours, Levitra (vardenafil) or Viagra (sildenafil) in past 24 hours

Non- ST elevation MI (NSTEMI)

Pathophysiology

Supply/demand mismatch- stenosis large enough to cause cardiac enzyme leak

Definition

Type 1 NSTEMI- Chest pain + or – EKG changes with cardiac enzyme elevation

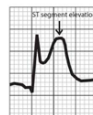
Type 2 NSTEMI- Above definition in the setting of a non-cardiac stressor (sepsis, trauma, surgical abdomen, etc.)- usually from prolonged tachycardia

Treatment

Type 1- Same as Unstable Angina (ASA, heparin/lovenox, nitro)

Type 2- Treat the underlying cause, trend enzymes as an inpatient

ST elevation MI (STEMI)



II

Pathophysiology

Coronary plaque that has ruptured, causing platelet aggregation and acute clot that compromises blood flow

Definition

1 mm or more of ST elevation in 2 or more contiguous leads

PEARL- Depressions can signal infarction opposite of that lead

Pneumonic for reciprocal changes

PAILS- Posterior Anterior Inferior Lateral Septal

Treatment

Immediate cath lab activation or transfer to cath capable facility

Aspirin- 325mg PO

Plavix 600mg PO with zofran (ondansetron) 4-8mg IV

Heparin drip- 60-70 units/kg bolus, 12-15 units/kg/hr, max 5,000/1,000

PEARL- be sure to do a good H and P and check a chest x-ray to evaluate for other causes of STEMI (aortic dissection, AAA, pericarditis, intracranial hemorrhage)

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