

Chest pain: 5 "don't miss" diagnoses: CAD, PE, aortic dissection, pneumothorax, ruptured viscus (esophagus or peptic).

COPD Exacerbation:

*Evaluation/ Admission criteria: co-morbidities, poor response to outpatient mgt, poor home care, insomnia, mental status changes, ΔpCO_2 , ΔpO_2 .

*ABG, peak flow.

*Target 89% (55-60 mmHg). Venturi mask up to 10L/min (to 55%). Nasal cannula 2-6L/min (up to 44% FiO_2).

*DuoNeb nebulizer (0.5 mg ipratropium, 2.5 mg albuterol) Q2Hrs. Use mouthpiece or, if no hx glaucoma, face mask & mouth breath.

*Separately give: albuterol nebulizer 2.5 mg diluted to 3 ml Q1 hr; ipratropium (Atrovent) 0.2% in 2.5ml Q2-4hrs (if no hx glaucoma)

*Methylprednisolone 125 mg Q6Hr IV.

*Less severe: Non-PEN allergic Amoxicillin 250 PO TID or Bactrim DS BID.

*More Severe: Levofloxacin 500 QD. Non-PEN allergic Amoxicillin-Clavulanate (Augmentin) 500 TID.

*NIPV (non-invasive pressure ventilation): Contraind: hemodynamic instability, arrhythmias, nausea, secretions, v mental status. 10cm inspiratory, 4cm expiratory

ASTHMA exacerbation:

*Prior hosp'ns, ASA/NSAID, infection, reflux.

*Able to speak, sweating, agitation, R2+, P110+, subcu air.

*PF (Peak flow), $O_2\%$, & ABG (only when PF<25% does significant ΔpCO_2 exist): Hospitalize if <50% or $PCO_2 \geq 40$ mmHg.

*PF>70% discharge, improving 40-70% with good care at home and no prior hospitalizations discharge, admit 40-70% or <40%.

*Oxygen: target >90%.

*Albuterol 2.5 mg continuous flow ("handheld" or "updraft")

Q20min or albuterol + ipratropium (Duoneb)

*Methylprednisolone 125 mg. Indications: <20% improvement after 1st neb, <70% after 1st hour of rx,

*Failure to improve: add ipratropium. 500mcg Q20 minutes.

*Severe attack: Mg 2gm over 20minutes.

Anaphylaxis:

*Evaluate airway and BP. Check for beta blocker.

*epi 0.3 - 0.5 mg (0.3 - 0.5 ml 1:1000 solution).

*For hypotension: epi 1 - 10 ug/min (1mg in 500cc at 30-300cc/hr)

*If on beta-blocker: glucagon 1mg bolus. Drip 1mg/hr O_2 100%.

IV fluids: 500 - 1000 cc bolus.

*albuterol inhalation: 0.5 cc (2.5mg)

*benadryl 25 - 50 mg IV Q4hrs.

*Methylprednisolone 125 mg iv.

*Cimetidine 300 mg IV Q8hrs.

*Observe for 6 hours.

Meningitis:

*nuchal rigidity, jolt accentuation of HA (2x rotation/sec> Δ HA).

*Blood cultures.

*Empiric: ceftriaxone 2gm IV q12 and vanco 750 IV q6hr. Add ampicillin 2gm iv q4hr for age >50 and v immunity.

For suspect strep.give dexamethasone 10-12 mg iv w/ Abc

*CT for immunosuppressed, v consciousness, focal deficit, CNS disease. But get bld cultures and start Ab'cs 1st.

*LP: cell count, gram stain, glucose, protein, culture, latex fixation for strep and nesseria, viral studies: HZ, HSV, enteroviruses, arbovirus Ab, AFB, cryptococcal Ag.

PE or DVT:

Enoxaparin (Lovenox) 1mg/kg BID

Weight >150kg or renal failure:

UFH: 5,000 iv bolus. Then 1,680 U/hr (20,000 Units in 500 cc 2/3 dextrose 1/3 saline at 42cc/hr) or, if surgery recent bleed cva platelets <150K, then at 31 cc/hr. PTT in 5 hrs, for target PTT of 70.

PNEUMONIA. Hi risk:

Age, NH rsdnt, major comorbidities (CA, liver, renal, CHF, CVA), vMS, Syst<90, R30, P>125, T<35or40+, $O_2\%$ <90/ pleural effusion./ pH<7.3, BUN 30+, Na<130, gluc250+, HCT<30.

*Don't admit if a) no risk factors and $W \leq 80$ yo or $M \leq 60$ yo.

or b) 1 risk factor and $W \leq 50$ yo or $M \leq 40$ yo.

*R/O legionella, flu, bioterrorism, MRSA.

*bld cltr, gram stain, urine for strep, legionella, mycoplasma

*OPD-lorsk:azithro500then 250x4ds or doxy 100BID

*OPD-hi risk: levoflox 750qd OR augmntn2gbid+azithro

*InPt-lo:(ceftriax2gm+azithro500IV) or levoflx750IV

*InPt-hi:ceftriax2gm+ (azithro500IV or leflx750IV)

*InPt-hi-pseud (COPD or bronchiectasis):

(Zosyn(piperacillin-tazo)4.5gmg6hr OR imipenim500q5)+levflx750

If staph on gram stain add vanco 15mg/kg

Anion gap acidosis: MUDPILES: Methanol, uremia, DKA, paraldehyde, iron/INH, LA, ethanol/ethylene glycol, salicylates.

$Posm/L=2xNa+Gluc/18+BUN/2.8+EtoH/4.6+CH03/3.2+$

$EthyleneGlycol/6.2+isopropanol/6+Acetone/5.8.$

ALCOHOL:

Toxicity: 1)? Other alcohols if Δ Agap or vvpH, 2)100- mg/dl: v balance, 150-:v sitting,300-coma,400+vResp: clearance 20mg/dL/hr. B1 (Thiamine) 100mgIV.

Withdrawal:Tremor,HA,sweat, palp'ns:6-36hrs,Seizures:6-48,Hallucinosi:s:12-48,DTs(Δ P, Δ BP, Δ T):2-4ds.

Check abd T, Δ liver, stool guaiacs, vK, Δ pH,lytes+,vMg,vPO4,CK, amylase,LFTS, Anion gap,tox screen. ???LP or CT scan.

Rx: 1)Thiamine, 2)Fluids, 3) ions, 4) Patients w/ h/o szr, DTs, long abuse: Librium 50-100Q6Hx1d, 25-50Q6x2ds. Additional doses are given if CIWAAS score>8 (n,sweats,anxiety,agtn,trmr,HA, hallucintns,vOrientation). 5)DTs: Symptom triggered: Diazepam 5 iv Q5min until calm. 6) ICU if >40yo,CVdis, abnrl VS,vpH,abnl lytes,infection, trauma, rhabdo, DTs, Szrs, GI pathology.

METHANOL (wood,anti-freeze): Ocular late, ABG, A gap, other alcohols, ASA, tylenol, ECG. Formic A. Rx: Fomepizol, ph<7.3: $NaHCO_3$ 1-2mEq/kg in 1 LD5W at 200/hr, folate 50mg Q6H, Thiamine(B1), pyridoxine (B6) 50 IV. Hemodialysis.

ETHYLENE glycol(anti-freeze): Late: Flank pain, R Failure, CaOxalate. ? v Calcium and Δ QT on ECG. Rx as above.

ISOPROPANOL(rubbing,disinfect,antifrz):Acetone. pH NL

HONKs: Evaluate for infection, etoh, cocaine. v MS, focal deficits(may evolve). $pOsm>320$ mOsm/L, neg Ketones,pH>7.3 $HCO_3>20$, Δ BUN/Cr,LA(?infection),Na(1.6Na/100gluc to400, 2.4Na/100gluc for gluc>400),K,Mg,Ca, ECG. Rx:1) Intravascular volume: 0.9%NS at 1-2L/hr x 2hrs. Then 1L/hr. 2) Free water deficit=0.5*Wt-kg*(Na-obs - 140)/140. Use 0.45% saline (77 mEq/L) at a rate to achieve a change of < 0.5mEqNa/L/hour. 3) Insulin: If glucose>600, give 5-10 U IV bolus, then 0.1u/kg/hr. e.g.70kg patient: 7u/hr via 100u in 500cc D5W (0.2u/cc) at 35 cc/hr. Correct gluc no more than 100 mg/dL/hr. 4)K: Unless K>6 or oliguria or renal failure, give 10 - 20 mEqK/hr or more if K<3.5.

DKA: N,V,vague abd pain, v BP,dry, infection. A. Gap met acidosis, +ketones. In pregnancy & etoh'm, may be "eu-glycemic". K,Mg,Ca, PO4, ECG, amylase, LFTs. Give fluids, K and insulin as for HONK, except that the initial insulin bolus is 10-15u(0.15u/kg).

SALICYLATE: Tinnitus, Δ T, Δ RR,n,v,d, pulmonary & cerebral edema. Fatal: 10+gm. Toxic: at >40 mg/dL (>2.9mM/L) (NI: 10-30mg/dL). 95%+renal elimination. Even if pH:7.5-7.55, give

HCO₃ until pH>7.6. Charcoal. NaHCO₃ 2 mEq/kg bolus, 132 mEq/LD5W at 250 cc/hr. Avoid intubation and diamox.

Tylenol: Level at 4 hrs. Charcoal in 1st 4hrs, NAC <8 hrs.

US has high sensitivity (94-99%) for DVT in proximal vein (not calf) in symptomatic patients.

HYPERKALEMIA

Seizures– status epilepticus

Etiologies:

*Withdrawal from alcohol, barbiturates, baclofen, aprazolam (Xanax).

*Toxicity or OD from PEN, Flagyl, INH, bupropion, Li, clozapine, cyclosporine.

*Metabolic: vPO₂, v or ^ glucose, azotemia, uremia, v or ^ Na, vCa, vMg.

*CNS: infection, stroke or bleed.

Evaluation: O₂%, ABGs, lytes+, Ca, Mg, CBC, LFTs; tox screen for alcohol and street drugs, U/A, ECG, U/A. **EEG.**

Rx:

*Soft oral airway, O₂, bag, bed padding.

*Thiamine 100mg >50cc50%dextrose(D50)

*Lorazepam 0.03 mg/kg IV push. Will work in 2 minutes and last 4 hours. If seizures continue, give up to 2 additional doses (up to 0.1 mg/kg.) (You can give 4 mg over 2 minutes but this may lead to respiratory depression and intubation.)

*Follow with phenytoin 50 mg/kg at 50 mg/min (must be in a separate line in normal saline with large bore catheter.. Precipitates and causes venous irritation); so for a 70 kg man, give 50 mg/min over 70 minutes; fosphenytoin is given as phenytoin equivalent; but can give twice as fast... i.e., 35 minutes.)

Adverse effects of this are hypotension and heart block.

DIAGNOSIS GUIDELINES FOR DVT AND PE from the AAFP and ACP: Ann Int Med 2007; 146:454.

Rec 1: Use validated clinical prediction rules:

DVT: (cancer/immobilization/swelling/veins)

Active cancer 1/ Paralysis, paresis or recent plaster immobilization

1/ Bed ridden for 4+ days or surgery within 12 weeks 1/Entire leg

swollen 1/ Unilateral Pitting edema 1/ Calf 3cm larger than

asymptomatic side 10cm below tibial tuberosity/ Localized

tenderness along the deep venous system 1/ Collateral superficial

veins (nonvaricose veins) 1/ Alternative dx at least as likely as DVT

-2/ Low≤ 0/ intermed 1 -2/ high 3+/
-2/

PE: (HIP=1.5/ HM=1)

Signs of DVT 3/ Alternative dx less likely than PE 3/ Hx of DVT-

PE, Pulse >100, Immobilization or Surgery: each get 1.5/

Hemoptysis and Malignancy each get 1/

Low:0-1/ Intermediate: 2-6/ High: 7+

Rec 2, in low probability of DVT or PE, getting a D-dimer is a reasonable option and reduces the need for further imaging. Patients with negative D-dimer but intermediate or hi pretest Wells probability had a 3.5 and 21.4% incidence of DVT. Therefore, in those with intermediate or high pretest probability, imaging is necessary.

For intermediate or high pretest probability of DVT, get US. US is less sensitive for patients who have DVT limited to calf. (However, DVT only in calf veins is not associated with increased risk for PE (but is associated with post-thrombotic syndrome.)

26% of undiagnosed untreated patients with PE will have fatal PE.

COMPETENCE TO CONSENT TO TREATMENT:

1. Can the patient clearly communicate his/her decision?

2. Does the patient understand his condition?

3. Does the patient appreciate the consequences of his decision?

4. Can he weigh the risks and benefits?

