

INTERN LECTURE SERIES

Common Calls 2009

Fever

- It is 4 am.
- You've been aroused from a fitful sleep by a nurse on 10W.
- Room 115a has a temperature of 38.4
- You check the sign-out—Ms. Rivera is a 55 year old admitted 4 days ago with a diagnosis of lobar pneumonia.

Fever

- What information do you want over the phone?
- What do you tell the nurse to do before you get there?
- What information will you look for on the sign-out?

Fever

- What information do you want over the phone?
 - VS over past 24hr, distress?, O2 -sat.
- What do you tell the nurse to do before you get there?
 - Recheck VS, get the BCx bottles.
- What information will you look for on the sign-out/edr/scc?
 - Comorbidities, current ABx, last Blood Cx, colonized with 'bad-bugs' ?

DDx and Dangerous Dx

- DDx:

- Infx, Malignancy, CVA, transfusion rx, drug rx, bleed, EtOH/benzo withdrawal, hyperthyroid, focal inflammation (cholecystitis, pancreatitis, MI, colitis etc.)

- Dx's you don't want to miss:

- sepsis, neutropenic fever, meningitis, endocarditis, EtOH/benzo withdrawal

Fever

- What tests will you order?
- What treatment will you order, if any?
- When will you discuss the case with your resident or TR?

Fever

- What tests will you order? **EXAMINE** the PT
 - 2 sets BCx, UA, UCx, CXR?, C diff?
 - peripheral , off of line
- What treatment will you order, if any?
 - Tylenol, IVF's, role of broadening ABX?
- When will you discuss the case with your **Resident** or **TR**?
 - Unstable pt: tachy, hypotensive, AMS

When to start abx...

- 1. Known **source** of infx
 - PNA on CXR
 - Positive BCx
 - UTI
 - Line
- 2. **Unstable** pt
- 3. **Neutropenic fever**
 - Definition of neutropenia: $ANC < 500$ or $ANC < 1000$ with expected nadir < 500

Empiric Abx

- Allergies, CrCl
- **Unstable pt:** VANC and CEFEPIME (or Zosyn)
- **Neutropenic fever:** CEFEPIME (2g IV q12h), zosyn or imipenem
 - Consider VANC: unstable, h/o MRSA, visible line infx, mucositis, on quinolone prophylaxis
- Positive BCx
 - GPC: vanc
 - GNR: third generation cephalosporin
- PNA on CXR
 - Hosp day 1-2: CAP -> ceftriaxone and azithromycin
 - Hosp day >3: HAP-> cefepime +/- **Legionella coverage** +/- vanc
- Positive UA: Bactrim, quinolone, Macrobid
- Presumed line infx: vanc and gram negative coverage

Fever- Case

The patient is evaluated and has the following
vitals:

HR = 108

T = 38.4

RR = 22

BP = 100/60

You check the patient's labs:

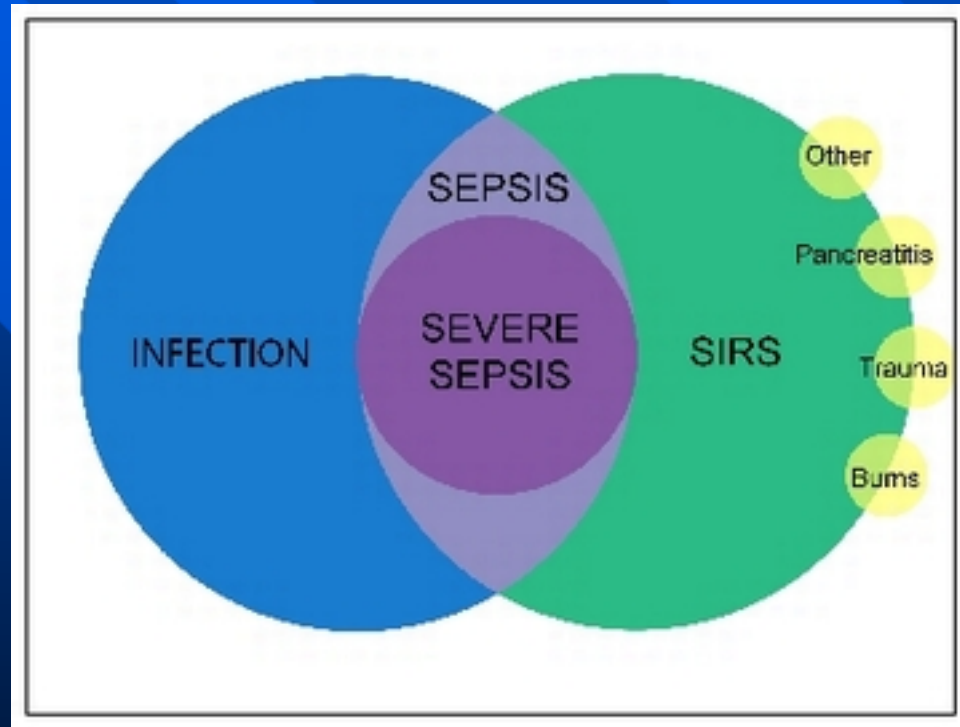
WBC = 13,000 (88%N)

What does this patient have?

SIRS, sepsis, shock? What's the difference?

The background of the slide features several thick, parallel diagonal stripes in a medium blue color, running from the top-left towards the bottom-right. The stripes are set against a dark blue gradient background.

SIRS, sepsis, shock? What's the difference?



SEPSIS: Definitions

- The Systemic Inflammatory Response Syndrome (SIRS) – widespread inflammatory response to a variety of clinical insults. Two of the Four Criteria must be met:
 - Temperature $> 38^{\circ}\text{C}$ or $< 36^{\circ}\text{C}$
 - Heart Rate > 90
 - Respiratory Rate > 20 or a $\text{PaCO}_2 < 32$
 - WBC $> 12,000$ or $< 4,000$ or $> 10\%$ bands
- Sepsis – SIRS plus evidence of infection
- Severe Sepsis – Associated with organ dysfunction, hypotension or hypoperfusion (eg, lactic acidosis, oliguria, altered mental status)
- Septic Shock – Hypotension despite adequate fluids resuscitation

Hypotension

- Now it is 2 am. You are the Berson intern. Mr. Jacobs has a blood pressure of 80/40.
- You look at your sign-out. He is a 70 year old with a history of ESRD on HD, DM, and CAD, who was admitted 12 hours ago with nausea and vomiting, believed to be secondary to uremia. He was dialyzed today.

Hypotension

- What information do you want over the phone?
 - VS, BP **trend**, complaints, mental status
- What do you tell the nurse before you get there?
 - Repeat BP
- What information do you want from the sign-out list?
 - Comorbidities, current meds (anti-hypertensives, abx,), recent procedures

Hypotension DDX

- Hypovolemic:

- Dehydration

- Decreased intake versus increase output

- Hemorrhage

- There are 4 place a pt can “hide” a significant bleed
 - GI tract, abd cavity (retroperitoneal or peritoneal), lungs, thigh fascia

Hypotension DDx

- **Cardiogenic**
 - ACS/CHF
 - Arrhythmia
 - Tamponade
 - Valvular dysfunction
 - Obstructive: PE, tension PTX

Hypotension DDx

- Distributive

- Sepsis
- Adrenal insufficiency
 - Risk factors: chronic steroids, TB, metastatic malignancy, HIV, fungal dz
- Neurogenic
- Anaphylaxis
- Meds: always check for anti-hypertensives
- Hypocalcemia

Hypotension

- **Examine** the Patient!
 - appearance, mental status, extremities, pulses
 - what do you think is going on?
- What tests do you order?
 - Full labs, EKG, ABG, CXR, monitor?
- What treatment will you order?
 - IV Access
 - IVF- Fluid challenge (3-5 liters)
 - Consider ABx
 - Consider steroids
 - **Source control: remove any central lines if possible, hardware?**

Hypotension

- You examine the patient. He is confused (new) and has the following vitals:

T = 96 P = 120 BP = 80/40 RR = 24

You order labs (including a lactate) and receive the following results:

WC = 8,000 (20% bands)

Lactate = 8

- Now what does the patient have?
 - SEVERE SEPSIS

Severe Sepsis: Treatment

- *Adequate* **VOLUME** resuscitation combined with appropriate and early **ANTIBIOTICS** administration
- Mechanical Ventilation
 - Timely intubation to avoid respiratory collapse and cerebral anoxia

Tachycardia

- Very common, potentially dangerous
- Definition: HR > 100, keep relative tachycardia in mind
- Primary question: is the patient **stable**?
 - Asymptomatic
 - HR < 150
 - Non-ventricular rhythm

Tachycardia- DDx

- Intrinsic process:
 - Arrhythmia
 - Ventricular
 - VT
 - Atrial
 - AF, A-flutter, MAT, SVT, atrial tach
 - Event/structural
 - MI, ischemia, CHF

Tachycardia- DDx

- Extrinsic process:
 - High catecholamine states
 - Pain, anxiety, fever/infx
 - Hypovolemia
 - Dehydration, hemorrhage, relative hypovolemia (sepsis, etc)
 - Hypoxia
 - Always consider PE

Tachycardia DDx

- Hypoglycemia
- Anemia
- Hyperthyroidism
- Meds
 - Albuterol
- Drug withdrawal
 - EtOH, benzo's

Tachycardia

- Clinical Context!!
- Key information:
 - **vitals** (including Ox-sat, fingerstick?), symptoms, comorbidities, meds, recent events (surgery, transfusions, etc)
- Key studies:
 - Feel the pulse! EKG
 - consider: fingerstick, CXR, guaiac, r/o PE, labs (Hgb)

Case

Nurse calls you in the middle of the night: Mr G has a HR-145, h/o AF

- What do you ask the nurse?
 - VS, symptoms
- What do you tell the nurse before you arrive?
 - Trend VS, EKG
- What do you look for on signout?
 - Comorbidities, meds (BB, CCB, amio, dig?)

AF

- Primary question: is pt **stable** or **unstable**?
- If **unstable** (meaning hypotensive, AMS, SOB, CP). call help...get code cart.. shock
 - Biphasic defibrillator: 50 -> 100 -> 150 -> 175

A-fib

- What do you do?
- 2 issues:
- Rate control
 - Start with whichever agent the pt is already on
 - BB- give metoprolol IV 5 mg over 1 min q 5 min x 3 doses
 - CCB- give diltiazem 10 mg over 1 min then repeat at 15 min, consider dilt drip
 - Pt should be on monitor, trend BP
 - If pt becomes hypotensive due to BB or CCB, call resident consider amiodarone
 - Once rate is controlled consider starting or giving an extra dose of PO meds

A-fib

- Anticoagulation

- Do not worry about this in the middle of the night. There is no reason to start AC unless there is another indication.

Hypertension

- How high? Are they symptomatic?
- Acute or chronic? Are they in pain?
- What are they on - may give stat dose of that if vitals will tolerate - i.e. BB or ace
- Is there a change in mental status.
 - Stroke? Hypertensive urgency/emergency? Then call the TR
- If you doubt the reading **recheck yourself** and after meds.
 - 15-20 minutes for IV
 - 1.5-2 hours for po
- Chronic? Go slow

Seizures

- Vitals! Including glucose and O2 sat! Check BMP, Mg, Phos
- Think ABC's, suction, call for help
- Ativan, ativan, ativan - if > 2 minutes or status
 - Can give IM if no IV access
- Thiamine 100mg IV x 1
- If from high BP – hydralazine can be given IM
- 1amp D50 x 1
- Why?
 - Consider imaging if stable