ATYPICAL PRESENTATIONS
OF
COMMON DISEASES

GOAL:
1) To recognize atypical presentations of infection, heart and thyroid diseases in elderly.

2) To understand the reasons behind the atypical presentations.

OBJECTIVES:
1) List alterations in physiology with aging that are causes of altered presentations.

2) Identify symptom complexes that will lead you to appropriate evaluations.

1) PHYSIOLOGY and AGING
Key changes with age that are behind these altered presentations.
   A) Thermoregulation:

   B) Cardiac - Autonomic system

   C) Volume regulatory

   D) Immune dysregulation
E) Central nervous system

A) Thermoregulation:

1) Lower basal body temperatures
   *Aged* normal: rectal = 36.8-37.2°C (98.2-98.9°F)
   oral = 35.8-36.8°C (96.4-98.2°F)
   ear (IRED) = fever = >37.2°C (>99.0°F)

2) Why:
   - decreased heat production per kg. body weight
   - reduced muscle activity (thermogenesis) + less efficient shivering
   - decreased meal induced thermogenesis

<table>
<thead>
<tr>
<th>Definition</th>
<th>Sensitivity</th>
<th>Specificity</th>
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<tbody>
<tr>
<td>T &gt; 101 F (38.3°C)</td>
<td>40.0%</td>
<td>99.7%</td>
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<tr>
<td>T &gt; 100 F (37.7°C)</td>
<td>70.0%</td>
<td>98.3%</td>
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<tr>
<td>T &gt; 99 F (37.3°C)</td>
<td>82.4%</td>
<td>89.9%</td>
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“Therefore old people are “cooler” than young people”

Eddie 1998

B) Cardiac - Autonomic system
### Autonomic Nervous System

<table>
<thead>
<tr>
<th>System</th>
<th>Aging Physiologic change</th>
<th>Clinical effect</th>
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<tbody>
<tr>
<td>Beta-adrenergic systems</td>
<td>9 Max. heart rate</td>
<td>More/earlier:</td>
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<tr>
<td></td>
<td>9 Max. C.O.</td>
<td>CHF</td>
</tr>
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<td></td>
<td>9 Max. VO2</td>
<td>Pulmonary Edema</td>
</tr>
<tr>
<td>Alpha-adrenergic system</td>
<td>8 Systemic. vascular. resistance</td>
<td>Hypotension</td>
</tr>
<tr>
<td>unchanged</td>
<td></td>
<td>Impaired Cardiac Output</td>
</tr>
<tr>
<td>Cardiac System:</td>
<td>9 Vasodilator response</td>
<td>Impaired response to stress</td>
</tr>
<tr>
<td>Myocyte loss with</td>
<td>8 LV wall thickness,</td>
<td>Ischemia presents more often</td>
</tr>
<tr>
<td>compensatory hypertrophy</td>
<td>8 LV stiffness,</td>
<td>as dyspnea due to transient</td>
</tr>
<tr>
<td></td>
<td>9 LV compliance &amp;</td>
<td>increased LV end diastolic</td>
</tr>
<tr>
<td></td>
<td>relaxation</td>
<td>pressure</td>
</tr>
<tr>
<td></td>
<td>9 LV filling with</td>
<td></td>
</tr>
<tr>
<td></td>
<td>reliance on LA systole</td>
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</table>

### C) Volume regulation

1) decreased body water reserves due to decrease percent body water.

2) decreased thirst drive

3) decreased ADH response to hypovolemia

4) age related renal dysfunction:

**SUMMARY:** they take water less in, have less water reserves, and are less able to retain.
RESULT: Earlier and faster dehydration than younger counterparts

D) Immune dysregulation-------T cell & Antibody
   - decreased responsiveness

E) Central nervous system

1) Executive control and decision making
   In: a) Normal aged
   b) Cognitively impaired

SUMMARY
“Age is marked by maintenance of basal physiologic functions thru use of physiologic reserves thus impairing their own ability to respond to stress.

**************************SEPSIS**************************

I) Definitions:

1) Sepsis - diffuse inflammatory response
   - organ dysfunction

   - diffuse inflammatory response
   exemplified by: - alteration in body temperature
-tachycardia
-achyphnea,
-decreased or elevated WBC’s
(< 4000 or > 12,000)

**organ dysfunction:** e.g
-hypoperfusion
-hypotension

**mental status changes**

Septic shock = sepsis *plus* severe hypotension

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II) Epidemiology
A) Incidence:
40-50% of all bacteremia occurs in the elderly.

60-70% of all deaths due to sepsis occur in the elderly

B) Mortality:
30-40% mortality with sepsis
70-80% mortality with septic shock

**Why?** One reason we can fix:
delay in diagnosis due to failure to show *typical* signs.

C) Clinical Presentation; or “Non-presentation”
192 septic patients: 13% afebrile = (25 patients)

Of afebrile
-4/25 = hypothermic
-8/25 = absent leukocytosis

Good news! -21/25 = had a left shift

Atypical symptoms: 13, 14

- CHANGE IN MENTAL STATUS --------- 52% 15
- CHANGE IN FUNCTIONAL STATUS
- anorexia
- falls
- blood sugar alteration

example: 100 community acquired sepsis 16

34% (34) ---- urinary source

6/34 had dysuria, urgency or other urinary sx.

“Don’t expect to win, when you play cards with Grandpa, because he’ll never show you his hand” Eddie 1998

D) Sources of infection

- urinary - 27-44%
- respiratory - 20%
- abdominal - 20%

E) Organism type

- Gram-negative - 65%
- Gram-positive - 24-36%

F) Indicators of mortality risk

- neutropenia
- S. aureus infections
lower respiratory infections
-
age > 85 years
-
WBC < 5,000

patients not treated with the appropriate antibiotic within the first 24 hours.

G) Treatment;

-RAPID
-Broad spectrum-------S. aureus
-aerobic gram-negative bacilli
-Enterococci
If intrabdominal source=>anaerobes

**********MYOCARDIAL INFARCT**********

I) The “Bad News”

A) Incidence

- 60% of all MI’s occur in > 65 y.o.
- 30% of all MI’s occur in > 75 y.o.

Autopsy 70% of 70 y.o. CAD with > 50% obstruction of coronary arteries

B) Changes with Old-Old ( > 80)Age

As we age beyond age 65:

INCREASED:
women, CHF, renal insufficiency, functionally disabled

DECREASED:
males, diabetics, nonwhites, COPD, prior revascularization
Clinical presentation changes with MI:

INCREASED:
CHF, tachycardia, AMI’s, > 6 hr from onset presentations

DECREASED:
*chest pain with MI’s; ST segment elevation, LBBB, enzyme elevation*

C) Mortality
- in age > 70 y.o: mortality = 3 x younger age group
  survival for 1 year after MI = 60%
  survival for 2 years after MI= 50 %

D) Why so bad?

- preexisting cardiac disease
- preexisting risk factor diseases (DM, hypertension etc)
- LESS AGGRESSIVE management:

  - decreased thrombolytic therapy
    -30% of 65-74 meet criteria, 20% of age>80 meet criteria
    -Delayed treatment: in > 75 yo
    (> 60 min from time of arrival 1.5 X under 75 y.o.)
    CAUTION:
    - age > 80 eligible recipients increased odds of death (1.4)
    compared to nonrecipients of thrombolytics

  Complications of (hemorrhagic) stroke with TPA:
  GUSTO: If <75 y.o (0.52%)
  If >75 y.o. (2.08%)

- decreased coronary bypass surgery
  Complications: in > 80 y.o.
  - 11.55% mortality
  - 2.5% stroke
  - 60% delirium with 10% permanent cognitive impairment

Indications:
- better than PCTA in: - DM,
- left Main disease
- multivesSEL with low EF

- **decreased PTCA & stenting**
- PTCA & stenting better than Thrombolitics with lower 3and360 day mortality and less CHF

Complications:  
- 0.2% PTCA,
- 0.9% thrombolitics

Invasive strategies improve outcomes in MI’s  
~90% of ACS (unstable angina) can be stabilized with medical management,  
If patients continue with unstable angina symptoms 30 mins after initiation of therapy or recurrent symptoms during hospitalization  
**LLL coronary angiography**

**How do we do?**

Acute MI~1996 and 2001–Elderly  
ASA-------------within 24 hrs----55%

B-Blockers-----within 12 hrs----39%

Thrombolitics-within 90 mins–26%

-DELAYED or UNRECOGNIZED presentation  

**Patients with Q waves**  
Age > 65 y.o. (all) => 25 % “silent” Q wave infarct.

Age 75-85 y.o.(men) = 42 %”silent” MI

Age > 80 y.o. (all) => 60% “silent MI

More women than men in all ages= “silent” MI's

Silent defined as:
- no symptoms at all (50%)
  or
- atypical symptoms that were unrecognized (50%)

D) Atypical symptoms **of MI**
-syncope - 7%
-stroke - 7%
-palpitations - 4%
-dyspnea - 20-50%
-confusion - 13%

E) Atypical symptoms of **unstable angina** (N = 4,167)

~50% of patients > 65 y.o. presented with these symptoms:
- Dyspnea
- Nausea
- Diaphoresis
- Atypical chest pain or discomfort not located in the chest
  (ie rather located in arms, epigastrium, shoulders and neck)

Patients more likely to present with atypical symptoms:
- older,
- female,
- demented,
- no history of MI
- no history of hypercholesterolemia
- no family hx cardiac disease
Less likely to receive on admission:
ASA, antiplatelet agents, heparin or beta-blockers

F) Outcomes:
1) Recognized vs unrecognized SAME PROGNOSIS
   for another MI
   -ventricular fibrillation
   -sudden death
   -in hospital mortality

***************HYPERTHYROIDISM***************

I) SYMPTOMS:
   TYPICAL IN YOUNG:
   - fine tremor
   - skin: moist smooth
   - increased perspiration
   - ophthalmopathy
   - bowel frequency

Elderly may present with the above symptoms but the atypical symptoms are more common:

-tremor: usually not present but if present coarse

-skin: -no change
WHAT ARE THE TYPICAL SYMPTOMS OF HYPERTHYROIDISM IN THE ELDERLY?:

- anorexia

- weight loss------usually quite significant

- muscle wasting primarily in proximal muscles

- change in cardiovascular functioning:

  cardiac presentations of hyperthyroidism

  - new or worsening CHF--------60%

  - atrial fibrillation------------------40%

  - new or worsening angina--------20%
Apathetic hyperthyroidism:
- Depression
- Apathy
- Placid Facies
(Mimics depression or parkinsonism)

II) TESTING - TSH-ultrasensitive is the screening test of choice

III) CAUSES
25% of thyrotoxicosis had iodine contrast in the previous 3-8 weeks.

How do you tell the difference?
24 hour Iodine 123 uptake.

******* ATYPICAL PRESENTIONS OF COMMON DISEASE -- the Pearl Card ***

I) PHYSIOLOGIC CHANGES OF NORMAL AGING
A) Thermoregulation:
  1) Lower basal body temperatures
     Aged normal: oral = 35.8-36.8 C(96.4-98.2F) rectal = 36.8-37.2 C (98.2-98.9F)
     ear (IRED)(fever) = >37.2C (>99.0F)
B) Cardiac - Autonomic system
   Beta- adrenergic systems---decreased
   Alpha-adrenergic system-----unchanged
   LVH (compensatory)
C) Volume regulation
1) decreased body water reserves due to decrease percent body water.
2) decreased thirst drive
3) decreased ADH response to hypovolemia
4) age related renal dysfunction:
   D) Immune dysregulation ------ T cell & antibody: decreased responsiveness
   F) Central nervous system: Executive control & decision making change with age.

II) SEPSIS
   - diffuse inflammatory response
   - organ dysfunction: e.g. hypoperfusion, hypotension, mental status changes
   A) TYPICAL SYMPTOMS OF SEPSIS IN ELDERLY:
      - CHANGE IN MENTAL STATUS (50%)
      - CHANGE IN FUNCTIONAL STATUS
      - anorexia
      - falls
      - blood sugar alteration
   B) Sources of infection: urinary (27-44%), respiratory (20%), abdominal (20%)
   C) Reasons for failure: age > 85, neutropenia, S aureus, lower resp. inf., patients not treated with the appropriate antibiotic within the first 24 hours.

III) MYOCARDIAL INFARCTION
   A) Atypical symptoms
      - syncope 7%
      - stroke 7%
      - palpitations 4%
      - dyspnea 20-50%
      - confusion 13%
   B) Treatments: underutilized 1) thrombolytics 2) PCTA 3) Beta-blockers 4) ASA
   TYPICAL SYMPTOMS OF HYPERTHYROIDISM IN ELDERLY:
      - anorexia
      - weight loss, muscle wasting (proximal muscles)
      - change in cardiovascular functioning:
      - new or worsening CHF (60%), atrial fibrillation (40%), new or worsening angina (20%)
   Apathetic hyperthyroidism: Depression, Apathy, Placid Facies
   II) TESTING (-TSH-ultrasensitive), occasionally Free T-3 and Free T-4
   III) CAUSES:
      - toxic nodular goiter,
      - single hyperfunctioning nodule
      - diffuse toxic goiter (Graves)
      - iatrogenic (excess thyroid replacement, or s/p iodine contrast)

12/30/02 evv