Infections in the Elderly: Mythology and Mortality

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OBJECTIVES

At the conclusion of this presentation, each participant should be able to . . .

1. Understand the reasons why elderly patients are more susceptible to “normal” infections.
2. List infections that elderly patients may be predisposed to developing.
3. Describe appropriate treatment for elderly patients with dangerous infections.
I. Background

Epidemiology
• 12-15% of the US population is 65yo. old or greater
• Expected to increase to > 20% by 2030

Elderly patients in the emergency department
• 15% of all emergency department patients
• 43% of all hospital admissions from the emergency department
• 50% of all ICU admissions from the emergency department
• Undergo laboratory testing and radiography at a rate 50% higher than younger patients
• Length of ED stay is 20% longer than younger patients
  • Despite the more frequent testing and longer stay, higher rate of misdiagnosis

Elderly and infections
• Fever present in 10% of all elderly ED patients
• Elderly account for 65% of ED patients with sepsis
• Much higher mortality, esp. if bacteremic
  o 20-37% mortality
• GU and lower respiratory tract are most common sources
  o Don’t forget intra-abdominal sources as well

II. Immune system

The elderly are immunosuppressed
• Decrease in cell mediated immunity, antibody titers and response
• Co-morbidities
• Malnutrition
• Living environment issues

III. Fever
• > 37.2 degrees C
  o Elderly have lower baseline body temperature
• 1/3 fail to mount fever
• Delay in mounting fever
• 3-4x more likely to develop hypothermia compared to younger patients

IV. Presentation
• The “usual” factors fail to predict bacteremia in the elderly
• Most predictive factors: delirium, tachypnea
• Normal VS often lead to unrecognized shock
V. Specific Disease Entities

**UTI**
- Elderly are at increased risk
  - Increased urinary stasis and PVR volume in men and women
  - Renal and bladder calculi
  - Fever and classic symptoms is unreliable
  - WBC unreliable
  - Delirium and tachypnea!

**Pneumonia**
- Multiple physiological reasons produce increased risk
- Classic symptoms are unreliable
- Delirium and tachypnea!

**Sepsis**
- Follow usual recommendations
- Delirium and tachypnea!
- #1 → respiratory; #2 → GU
  - Treatment should cover gram-negatives

**Skin/Soft Tissue Infections**
- Predisposition to skin infection in elderly
  - Slower wound repair after 3rd decade
  - Increased portals of entry
  - Always check the feet!
  - Beware necrotizing infections

VI. Summary

- Fever is highly specific if present, but often is absent
- WBC is unreliable
- Classic presentations are unreliable
- Check the feet and look in the abdomen
- Be aggressive with resuscitation
- Delirium and tachypnea!

**Recommendation for Further Reading**