ABDOMINAL EMERGENCIES IN THE ELDERLY

ECI Rural Workshops
2013
THE ELDERLY - AGE

- “Young old” 65-75
- “Middle old” 75-85
- “Old old” >85
THE ELDERLY DEMOGRAPHIC

- 13% of Australian population are >65yrs
- Projected 25% by 2042
- "Oldest old" is the fastest growing subset
- "Physiological age" may be different to "Chronological age"
AUSTRalian POPulation GROWTH
Presentation rates per 1000 people by age group

Lowthian J et al. Demand at the ED front door: is the 4 hour target the answer?
EMERGENCY MEDICAL CARE
ELDERLY

- >15% of all ED VISITS
- 39% of Ambulance arrivals
- 46% admission rate
  - 47% of all ICU admissions
EMERGENCY MEDICAL CARE
ELDERLY

- Undergo 50% more lab and radiology testing
- Much higher re-presentation rate
- Much higher misdiagnosis rate
- Worse outcomes with delays in diagnosis
THE ELDERLY

PHYSIOLOGICAL CHANGES
IMMUNE SYSTEM

- Consider the elderly to be immunosuppressed
  - Decreased cell mediated immunity
  - Decreased antibody titres
  - Decreased barrier protection from skin
- Take longer to “demonstrate” infection
  - Fever
  - Elevated WBC
  - May develop hypothermia
BASAL BODY TEMPERATURE

- Basal body temperature decreases with age so that a fever of any level becomes much more meaningful
- Decreased response to temperature changes
- Don’t sweat as early
- Don’t sense heat as early
- Don’t get thirsty as early
RENAL FUNCTION

- Decreased renal cell mass, so GFR decreases with age (chronic disease, diabetes, hypertension)
- Decreased drug clearance
  - Greater risk of drug toxicities
- Decreased production of creatinine due to smaller muscle mass
CARDIOVASCULAR SYSTEM

- Decreased response to both endogenous and exogenous catecholamines
  - Both inotropic and chronotropic
  - Enhanced if on beta blockers
CARDIOVASCULAR SYSTEM

- 1% decrease in CO per year >35yo

- Higher risk of CHF with medical stressors
  - Severe sepsis
  - Pneumonia
SHOCK IN THE ELDERLY

- Develops earlier and more easily
  - Occult shock is common
  - Needs aggressive treatment
  - Have a low threshold for early lactate levels and following Lactate trend
GASTROINTESTINAL TRACT

- Slower GI motility including increased stomach emptying time
- Increased diverticuli in colon
- Decreased fluid intake and mobility – increase in constipation
GASTROINTESTINAL TRACT

- Decreased gastric mucous and bicarbonate production
  - Increased risk of GIT haemorrhage
  - Be wary of NSAID, Aspirin & Warfarin use!
  - 30-35% of asymptomatic elderly have ulcer disease
    - 50% present with perforation or haemorrhage
    - Steroids predispose
GASTROINTESTINAL TRACT

- Decreased GI system blood flow
  - Increased risk of mesenteric ischaemia
  - Atheroma
  - Emboli from AF
  - “Low flow” states
CENTRAL NERVOUS SYSTEM

- Dementia/decreased cognitive function lead to
  - Decreased sensation of pain
  - Downplaying of symptoms
  - Denial of symptoms
- Decreased and delayed pain perception at nocioceptor cellular level
"Those who are used to bearing an accustomed pain, even if they be weak and old, bear it more easily than the young and strong who are unaccustomed"
POLYPHARMACY

- Average elderly
  - 4-5 prescription drugs
  - 2 OTC medications every day
- Drugs can mask symptoms and alter vital signs
  - NSAIDs
  - Steroids
  - Digoxin (causes splanchnic vasoconstriction)
- Warfarin
VITAL SIGNS IN THE ELDERLY
TEMPERATURE

- Lack of fever does not rule out possibility of dangerous infection.
- The elderly patient is 3-4X more likely to develop HYPO thermia in response to sepsis.
- If a fever is mounted, it could be delayed by hours or days.
HEART RATE

- May or may not mount tachycardia
  - Beta blockers
  - Calcium Channel blockers
  - Digoxin
BLOOD PRESSURE

- May already be low due to antihypertensive meds

- Hyper/hypotension can be relative compared to normal BP e.g.
  
  180/100  
  120/60

  "RELATIVE SHOCK"
RESPIRATORY RATE

- Very Useful

- First abn Vital Sign in sepsis is tachypnoea

- IMPORTANT TO COUNT RESPIRATIONS
ELDERLY ABDOMINAL PAIN

THE FACTS

- 10% will die, even higher than the elderly patient presenting with chest pain
- Can present in any way possible
- 55% will have another diagnosis on discharge
- Misdiagnosis increases mortality 2X
ACUTE APPENDICITIS

- 8% of all appendicectomies
- Accounts for 5-6% of all acute abdominal emergencies in the elderly

- High rate of delayed or misdiagnosed
  - 25% sent home at first presentation
  - Elderly 50% of all mortality
<table>
<thead>
<tr>
<th>Symptom</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nausea, vomiting, anorexia</td>
<td>&lt;50%</td>
</tr>
<tr>
<td>Pain Migration</td>
<td>&lt;50%</td>
</tr>
<tr>
<td>Afebrile</td>
<td>20-50%</td>
</tr>
<tr>
<td>Normal WBC</td>
<td>20-45%</td>
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<td>U/A may show RBCs +/- WBCs</td>
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<td></td>
<td>(leading to misdiagnosis as UTI, cystitis, renal colic)</td>
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<tr>
<td>&gt;50% perf rate @ time of diagnosis</td>
<td></td>
</tr>
<tr>
<td>Delay in presentation</td>
<td>(3-7/7 common)</td>
</tr>
</tbody>
</table>
RUPTURED AAA

- Even when rapid diagnosis made, mortality >70%
- Rate of misdiagnosis as high as 30-40%
- Only 5% of patients with rupture have known AAA on presentation
RUPTURED AAA SYMPTOMS

- Abdo +/- Back pain
- Hypotension
- Palpable pulsating tender abdominal aorta
RUPTURED ABDOMINAL AORTIC ANEURYSM

- Often misdiagnosed
- Severe “tearing” abdominal pain radiating through to back
- Radiates to: flanks, thighs, testes
RUPTURED AAA SYMPTOMS

- Abdo pain absent in 20-30%
- Back pain absent in 50%
- Hypotension absent in 65%
- Tachycardia absent in 50%
- Palpable aorta absent in 30%
RUPTURED AAA PRESENTATIONS

- Presents as syncope in 18%

- May simulate renal colic
  - Most common misdiagnosis
  - Sharp sudden pain in flank often radiates to groin
  - Can have microscopic haematuria
“There is no disease more conducive to clinical humility than aneurysm of the aorta”
MESENTERIC ISCHAEMIA

Risk Factors
- Atrial Fibrillation
- Digital and other drugs can slow splanchnic blood flow
- Recent MI
- Low cardiac output CHF, cardiomyopathy
- Hypercoagulable states
MESENTERIC ISCHAEMIA

- Often misdiagnosed as Gastroenteritis
  - Nausea and Anorexia 80%
  - Vomiting 60%
  - Diarrhoea 50%

- Blood products in Stool (gross or occult) in <50%
THINK OF MESENTERIC ISCHAEMIA!

- Sudden onset Abdominal Pain (also AAA)
- Lower GI Bleed + Abdo Pain
- Atrial Fibrillation + Abdo Pain
- Severe CHF + Abdo Pain
- Patients on Digoxin + Abdo Pain
- Pain out of proportion to abdominal findings
- Recent history of pain after eating – “mesenteric angina”
MESENTERIC ISCHAEMIA

TESTS

- Leucocytosis
- Lactic Acidosis
- CT high resolution
- Early angiography – still Gold Standard

- High mortality which improves with early diagnosis
ACUTE CHOLECYSTITIS

- Most common cause of surgical abdominal disease in the elderly
- 10-15% mortality in elderly
- Gallbladder is more likely to perforate due to thin calcified wall
ACUTE CHOLECYSTITIS
SYMPTOMS

- Nausea/vomiting absent in 50-60%
- Fever absent in 56%
- WBC < 10,000 in 40%
- 13% Afebrile with all normal labs
- 16% no RUQ or epigastric pain
- 5% no abdominal pain at all! (these can have altered mental status)
GASTROENTERITIS

- Mild to severe cramping and pain
- Nausea, vomiting, dry reaching diarrhoea
- No involuntary guarding
- No localized tenderness
- No peritonism

If any of the above, it is probably NOT gastro
TAKE HOME MESSAGES

- The elderly are not just “old” adults
  - Different diseases
  - Different presentations
  - Different Mindset

- Physiological changes occur with ageing

- Pharmacokinetics changes due to
  - Polypharmacy
  - Increased risk of adverse drug effects
TAKE HOME MESSAGES II

- Some lab parameters change with ageing
- Acute functional decline presentations can mask acute illness
- Atypical presentations occur for common diseases
Approach

- Essential information for the bedside
- Important questions to ask
- Think outside the square
- ?Investigation
- Repeated clinical review
Remember

Patients older than 65 years are likely to have serious organic pathology = abdo pain is a high risk presentation to ED in this age group
ACKNOWLEDGEMENTS

- Amal Mattu
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- Emergency Medicine Clinics of N. America
  - Vol 29, various articles
- Parker. Acad. Em Med 1997