Assessment of Geriatric Trauma

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Conflict of Interest Disclosure

• Bryan E. Bledsoe, DO, FACEP, FAEMS
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Geriatric Trauma Assessment

• Percentage of the population over 60 years of age is growing faster than any other age group:
  • Longer life expectancy
  • Lower birth rates

• Trauma population getting older:
  • Active lifestyle (predisposes to injury)
  • Advances in medical care in general

Geriatric Trauma Assessment

• Falls are the most common cause of trauma in patients >65 (48-72%):
  • Morbidity and mortality correlates with frailty and age.
  • Identified risk factors:
    • Previous falls
    • Living alone
    • Using walking aid
    • Depression
    • Cognitive deficit
    • Use of >6 medications

Geriatric Trauma Assessment

• MVCs are the second most common type MOI in geriatric trauma and the most common cause of mortality.

• Chest trauma most common (23%):
  • Rib fractures (24%)
  • Flail chest (19%)
  • Sternum fracture (6%)

Geriatric Trauma Assessment

• Auto-pedestrian trauma in the elderly:
  • Geriatric patients secondary to children in the incidence of auto-pedestrian trauma.
  • Higher mortality rate in geriatric trauma is an auto-pedestrian mechanism.
Geriatric Trauma Assessment

- Anticoagulants increase risk of hemorrhage in the elderly.
- Anticoagulants:
  - Direct oral anticoagulants (DOACs):
    - Dabigatran (Pradaxa)
    - Rivaroxaban (Xarelto)
    - Apixaban (Eliquis)
    - Edoxaban (Savaysa)
  - Vitamin K antagonists (VKAs):
    - Warfarin (Coumadin)
- DOACs appear safer than VKAs.
- Most patients do well.

Geriatric Trauma Assessment

- Under-triage in geriatric trauma assessment common (49% in one study).
- Traditional physiologic criteria may not truly detect the unstable geriatric trauma patient.
- CDC recommends any trauma patient >65 years with systolic BP <110 mmHg should go to a trauma center.
- Pulse rate ≥90 may indicate tachycardia and trauma center transport may be beneficial.

Geriatric Trauma Assessment

Evolution conventional wisdom is that all trauma patients >70 years of age should be transported to a trauma center.

Geriatric Trauma Assessment

- Airway:
  - Mouth opening may be limited.
  - High cervical fractures (e.g., odontoid) are more common in the elderly and manipulation of the head for airway care may compromise cervical spine.
- Breathing:
  - Diminished respiratory capacity in the elderly.
  - Be alert for hypoxia and treat.
  - PIM ventilation easier if dentures (if present) are left in place.
  - Respiratory rate >10 is associated with great risk of death.
  - Consider CPAP/NIPPV before intubation.

Geriatric Trauma Assessment

- Circulation:
  - Normal vital signs may be abnormal in the geriatric trauma patient.
  - Shock is more difficult to detect (normal BP in an older patient may actually be hypotension).
  - Medication usage (more common in the elderly) can alter the normality of vital signs.
  - Trending vital signs more important than a single set in determining impending shock.
  - Mortality increases when systolic BP falls below 110 mmHg and/or heart rate rises above 90.
  - Tachycardia (heart rate >90) in a geriatric patient must be explained. It is shock until proven otherwise.

Geriatric Trauma Assessment

- Circulation:
  - Look for more subtle signs and symptoms of shock in a “normotensive” geriatric trauma patient:
    - Confusion
    - Agitation
    - Somnolence
    - Delayed capillary refill
    - Mild tachypnea
  - Mortality increases when systolic BP falls below 110 mmHg and/or heart rate rises above 90.
  - Tachycardia (heart rate >90) in a geriatric patient must be explained. It is shock until proven otherwise.

Geriatric Trauma Assessment

- Disability:
  - Difficult. Inquire about anticoagulant usage.
  - Inquire about baseline mental status (e.g., dementia, confusion).
Geriatric Trauma Assessment

- Summary:
  - Determine the mechanism of injury (often subtle)
- Primary assessment:
  - ABCDE
- Secondary assessment:
  - Systematic examination
    - Review of medications
    - Determine baseline health and functional status
    - Assess cognition
- Determine priority/destination
  - Err on the side of caution (avoid undertriage)
  - Virtually all geriatric trauma should to a designated trauma center (especially >70 years of age)