Trauma and Falls in the Older ED Patient

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Learning Objectives

At the end of this session you should be able to:

1. Define special trauma management issues in the older patient regarding patterns of injuries and assessment of shock – how ATLS may be different over 65;
2. Describe an approach to a patient who has fallen: identify causes of falls, manage injuries, coordinate a safe discharge plan, and address prevention.
3. Understand the importance of an interdisciplinary team in assessing older patients with falls.
4. Communicate the key components of a safe discharge plan for older patients who have fallen (e.g., accurate medication list, plan for follow-up), including considering the potential sites for discharge.

Overview

- Major trauma
- Falls
- A few cases

Mrs. Popast

82 yo walking home from grocery shopping struck by a car (~30 kph) while she was crossing the road. She was brought to ED by EMS. On a back board and a collar.

120/70, HR 92, Sat 100%, on a re-breather mask.

Awake and responding to your questions though not coherently. She seems disoriented, and she is complaining of “pain everywhere” and “I can’t breathe!”

What do you want to know? To do?

How do you interpret her vital signs?

(120/70, HR 92, Sat 100%, on RBM, confused)

What elements of normal and abnormal aging are relevant to her management?

Normal Physiology of Aging

- Decreased adrenergic response (no increase in HR)
- Stiff pump/stiff pipes (late drop in BP)
- More fat/less water /less muscle (hypovolemia/less padding/Cons sedation)
- Loss of elastin and water (rigid bones/stiff joints)
- Decreased peripheral nerve cells and delayed transit time (less apparent pain)
- Cerebral atrophy – increased CSF (more padding but more stretch on bridging veins)

Patho-physiology of Aging

- Possibility of cognitive impairment;
- Decreased renal function (meds incl. RSI or CS);
- Arthritis;
- Osteoporosis
- Polymorbidity/Polypharmacy:
  - Anticoagulants
  - Beta-blockers
  - CCB
  - Diuretics
  - Opioids

ABCDE

Airway

Age-related changes affecting **intubation**:

- Difficult mouth opening (TMJ arthritis, general systemic stiffening),
- Cervical arthritis causes decreased mobility,
- Variable dentition and presence of dentures,
- Big tongue,
- Fragile easily damaged mucus membrane
- Medications for RSI/Paralysis

Breathing

Age-related changes affecting **ventilation**:

- Decreased respiratory reserve (because of both normal aging and the effect of disease);
- Decreased chest wall musculature
- Fragile bones mean easily broken ribs
- Decreased chest wall compliance causing more devastating pulmonary contusion

Circulation

Age-related changes affecting **cardiac output**:

- Decrease in maximum heart rate (= 220 – age),
- Decreased response to adrenergic catecholamines
- “Stiff pump” causes diastolic dysfunction and therefore cardiac output much more dependent on atrial filing

Non-age-related changes affecting **cardiac output**:

- Maximum rate further decreased by medications: Beta-blockers and CCB
- Diuretic therapy can produce a chronically contracted vascular volume

Disability

Age-related changes affecting **brain and spinal cord injuries**:

- Cerebral atrophy and increased CSF – brain is somewhat protected from contusion
- Resultant stretching of parasagittal bridging veins easily injured with minor impact and accel/decel injury
- Loss of intervertebral disks makes the vertebral column stiffer shifting force to the facets, ligaments and muscles and more fragile bone.
- Osteoporosis
- Osteoarthritis and resultant spinal stenosis, segmental immobility and kyphosis

Exposure and Environment

Age-related changes affecting **injuries**:

- Skin and connective tissue lose cells, strength and function – skin is thinner, less vascular and less able to thermo-regulate
- **Consequences:** More prone to:
  - hypothermia
  - skin and soft tissue infection
  - Rapid development of pressure ulcers

Get them off the back board as soon as possible!

Other issues?

- Goals of care?

Mrs. Cado

82 yo walking home from grocery shopping who fell on the sidewalk. She was brought to your ED by EMS – ambulatory in from the ambulance. Her vital signs are stable, and she is awake and responding to questions. She is joking with nurses but complaining of right shoulder pain.

What do you want to know? To do?

An approach to falls in older patients

- Assess the cause of the fall
- Assess the consequences of the fall
- Determine a safe discharge plan
- Prevent future falls

Cause of the fall

- History?
- Medications/Drugs
- Fall as a symptom of other disease
- Syncope
  - Cardiac
  - Orthostatic
  - CS hypersensitivity
  - Micturition/defecation/cough/gag

Mr Sinistra

78 yo male – from home with wife because of an intensely painful left wrist and a fall – in Fast Track; x-ray already done is normal

PMH (from patient): NIDDM; Hypothyroid; Htn; 8 or 9 falls in past three months; episode of severe neck pain “just like this pain” two months ago

Meds (from patient): Glyburide, thyroxin; ramipril

O/E alert oriented pleasant, quite distressed clutching his normal appearing wrist; 110/40; HR 78; afeb;

Consequences of the fall

- Routine care

- Special situations:
  - Falls and change in ambulation

  - Head injury in the anti-coagulated patient; in the non-anti-coagulated patient

Mr Dexter

76 yo male brought by wife from home because of right wrist pain after a fall. He has a deformity to his wrist and is in significant pain and distress.

PMH: severe Parkinson's disease and dementia.

O/E 180/90; 87; 37.0;

very distressed/agitated/confused/clutching his grossly deformed wrist; vomited during the exam

Determine a safe discharge plan

- Medication management
- Functional assessment and discharge planning
  - Physical
  - Cognitive
  - Functional
  - Social

Mr Cooper

78-year-old man who has fallen at home where he lives independently. -- painful right hip “can’t walk” -- lives alone in a two-storey house with bathroom and bedroom on the second floor; His medication list includes:

- Amitriptyline “for tingling”,
- Clonzepam “for nerves”
- Terazosin “for prostate”
- Ramipril and Atenolol “for blood pressure”
- Diphenhydramine “for sleep”
- Glyburide “for sugar”
- Warfarin “for my heart”
- Colchicine “for my gout”

What do you want to know? To do?

Two videos:

MD

GEM nurse

Prevention of future falls

- Interventions?
- Referrals?
- Discharge destination?
- Communication down stream

Other resources

www.geri-em.com

Word Press Password:

geriem123

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