Chapter 26
Geriatrics

Overview
- Anatomy and Physiology
- Assessment of the Geriatric Patient
- Trauma
- Common Medical Emergencies
  - Special Considerations in the Elderly
- Medication Considerations
- Abuse and Neglect
- Expanding the Role of EMS

Geriatric Overview
- Understanding unique problems of the elderly is important
  - The elderly are the fastest-growing segment of our population
    - A child born in 1900 could expect to live just 49 years
    - A child born in 1976 could expect to live almost 73 years and this continues to increase
Geriatric Overview

Multiple reasons for this increasing age
- Better health care
- Decreased rates due to vaccinating against preventable illness

The leading cause of death in the geriatric population is cardiovascular disease, which encompasses heart attack and stroke. This is followed by cancer.
Geriatric Overview

- The elderly are more difficult to transport, but not to diagnose and treat
  - Many reasons
    - Multiple medical problems
    - Difficulty in communication
    - Changes in anatomy and physiology with aging
    - A host of social factors

Anatomy and Physiology

- Changes occur in all of our body systems as we age
- General decline in function that begins slowly and is often not noticed until a problem occurs in another system
- The decline in body systems starts at an early age, even the 30s

Anatomy and Physiology

- Respiratory system
  - Decrease in vital capacity by 50%
    - Air moved in one breath is less than normal
  - Maximum breathing capacity decreases by 60%
  - Maximum oxygen uptake decreases 70%
    - Limits exercises and exertion
    - Prohibits rapid bursts of activity
Anatomy and Physiology

Cardiovascular system
- Decrease in stroke volume
- Decrease in contractility
- Degeneration of the conduction system
  - Dysrhythmias more common
  - Variations in rate from minute to minute
  - Irregularities

Cardiovascular system
- Hypertrophy of the heart muscle
  - Creates more area for the coronary arteries to supply
  - Inability to vasoconstrict quickly
    - Dizziness on standing

Renal system
- Decrease in functional units of the renal system by 30%-40%
- Renal blood flow decreases by 50%
  - Cannot produce very diluted or very concentrated urine
  - Limits ability to react to changes in fluids or electrolytes
  - Alters blood chemistry
Anatomy and Physiology

Nervous system
- 45% reduction in brain cells in areas responsible for higher function
- 6%-7% decrease in brain weight
- Decreased cerebral blood flow
- Decreased nerve conduction velocity

Musculoskeletal system
- Changes
  - Stature
  - Gait
  - Ability to ambulate

Musculoskeletal system changes
- Predisposes patients to falls
- Decrease in height of 2-3 inches
- Posture changes
  - Kyphosis
Anatomy and Physiology

- Gastrointestinal system
  - \( \frac{1}{3} \) reduction in the volume of saliva
  - Decreased esophageal motility
    - Results in bowel disorders and constipation

Assessment of the Geriatric Patient

- Complicated process
- Difficult to separate the effects of aging from the consequences of disease
- Often suffer from more than one disease at the same time

- Chief complaint may appear trivial and mundane
- May be the underlying reason for the real problem
- Often fail to report important symptoms
Assessment of the Geriatric Patient

- Chronic problems make it difficult to sort out the original problem
- Aging changes an individual’s response to illness or injury

Assessment of the Geriatric Patient

- Sensitive to changes in their routines
  - Rely on a social network for services
    - Sundowning
    - ICU psychosis

Assessment of the Geriatric Patient

- Communication problems are common
  - All senses on a gradual decline
  - Complicated by diseases
    - Dementia
Assessment of the Geriatric Patient

- History taking is a critical skill
  - Be aware of communication problems
    - Do not assume that a patient is deaf
    - Do not shout
    - Speak slowly and directly at the patient

Assessment of the Geriatric Patient

- Scene size-up
  - Be alert for clues at the scene
  - Can they care for themselves?
  - Look for signs of drug or alcohol abuse
  - Look for signs of elder abuse

Assessment of the Geriatric Patient

- Initial assessment
  - Peripheral pulses may be difficult to evaluate
- Focused exams
  - Patient may tire quickly from physical exam
  - Excessive clothing may hamper assessment
  - Explain what you are doing
  - Be alert for changes that are related to aging vs. changes that are related to a medical problem
Trauma

- Serious problem in the elderly

- Common causes
  - Falls
  - Motor vehicle crashes
  - Violence

Trauma

- Physiologic changes
  - Loss of elasticity of blood vessels
    - More subject to tearing
    - Concern for head bleeds
  - Cervical spine Injury
    - Common
      - Difficult to diagnose
      - Positioning and immobilization may need to be modified
Trauma

- In general, trauma care is similar to all patient populations
- Keep in mind the changes associated with aging
- Be alert for medications that blunt the normal response

Special Concerns

- Cardiovascular system
  - Myocardial infarction
  - Risk of dysrhythmia
  - CHF
  - Beta-blockers lower ability to respond to trauma situations

Special Concerns–Trauma

- Respiratory system
- Decrease in chest cage movement
- Lower vital capacity
- Require higher PO\textsubscript{2} to maintain O\textsubscript{2} transfer to vital organs
- Less tolerance of hypoxia
Special Concerns—Trauma

- Renal system
  - Decrease in ability to compensate
  - Increased risk for fluid overload

Common Medical Emergencies

- Management is similar to other adult patients

Common Medical Emergencies

- Cardiovascular conditions
  - Related to progression of atherosclerosis
- Syncope
- Rhythm disturbances
- Atypical presentations
Common Medical Emergencies

- Acute neurological changes
  - Seizures related to CNS disease
  - Stroke
  - TIA
  - Dizziness
  - Dementia
  - Organic brain syndrome
  - Psychiatric disorders
  - Risk of suicide
  - Depression

Common Medical Emergencies

- Environmental emergencies
  - Poor thermoregulation
  - More at risk than other adults

Common Medical Emergencies

- Respiratory distress
  - Frequently have underlying pulmonary diseases
  - May present in an atypical manner
  - Pneumonia presents as not eating or generalized weakness
Common Medical Emergencies

- Gastrointestinal bleeding
  - Upper more common
  - Blood loss can precipitate other issues

Medication Considerations

- More than 25% of all prescription meds are taken by the elderly
- More than 30% of all hospital admissions are for drug-induced illnesses

Medication Considerations

- Side effects
- Interactions
- Reactions
- Toxicity
  - Digitalis
  - Antiparkinson drugs
  - Diuretics
  - Anticoagulants
Abuse and Neglect
- Neglect more common than abuse
- No socioeconomic boundaries
- Average age is 80
- Often have multiple chronic diseases
- Require extensive care

Abuse and Neglect
- Unexplained trauma is the primary finding
- Be alert for clues at the scene

Expanding the Role of EMS
- Evaluating ways to capitalize on our role and ability to enter patient homes
- Allows for access to information physicians and other providers don’t know
- Promote health and prevent illness
Expanding the Role of EMS

- Examples
  - Home survey
  - Immunization programs
  - Social service referrals

Summary

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- Medication Considerations
- Abuse and Neglect
- Expanding the Role of EMS