Objectives

1. Define key terms introduced in this chapter.
2. List possible structural, toxic-metabolic, and other causes of altered mental status (slides 11-13).
4. Explain the reason for paying particular attention to airway assessment and management in patients with altered mental status (slides 14-15).
5. List signs and symptoms of altered mental status commonly associated with (slide 18): 
   a. Trauma
   b. Nontraumatic or medical conditions

Objectives

6. Determine the need for the following interventions in patients with altered mental status (slide 20):
   a. Manual spinal stabilization
   b. Opening and maintaining the airway
   c. Oxygenation
   d. Ventilation
   e. Positioning
   f. Transport

7. Explain the responsibilities of the general public and EMS in the care for a stroke patient that are identified by the American Heart Association as “Detection,” “Dispatch,” and “Delivery.” (slide 27).
Objectives

8. Describe the pathophysiology of stroke and distinguish between ischemic strokes and hemorrhagic strokes (slides 24-25, 28-31).
10. Describe an assessment-based approach to stroke and transient ischemic attack (slides 36-40).
11. Discuss the use of the Cincinnati Prehospital Stroke Scale and the Los Angeles Prehospital Stroke Screen (slides 41-44).
12. Discuss the role of blood glucose determination in the assessment of patients with altered mental status and neurological deficits (slides 43, 46).

Objectives

13. Describe ways of communicating with patients who have difficulty speaking (slides 59-60).
14. Recognize indications that a headache may have a potentially life-threatening underlying cause, such as toxic exposure, hypertension, infectious disease, or hemorrhagic stroke (slides 44-53).
15. Describe the appropriate emergency medical care for a patient suffering from headache (slides 54-55).

Topics

- Altered Mental Status
- Stroke
- Headache
CASE STUDY

Dispatch

Respond to 48 Delason Avenue for a 73-year-old female who has slurred speech and is unable to move her right arm or leg.

EMS Unit 102

Time out 0840

Upon Arrival

- Elderly female, not alert, lying in bed
- Husband states she was “talking funny and slurring her words”
- He also noted her inability to move her right hand, arm, leg, or foot
- You note the smell of urine and feces
How would you proceed to assess and care for this patient?

Altered Mental Status

- Reticular activating system (RAS)
- Altered mental status
- Coma

Back to Objectives
Causes

- Structural
- Toxic-metabolic

Assessment-Based Approach: Altered Mental Status

Scene Size-Up and Primary Assessment

- Scan the scene
- Stabilize spine if necessary
- ABCs
Assessment-Based Approach: Altered Mental Status

Secondary Assessment

Secondary Assessment
• History
• Physical exam
• Vital signs

Signs and Symptoms
• Trauma
• Nontraumatic or medical condition
Assessment-Based Approach: Altered Mental Status

Emergency Medical Care

- Spine stabilization
- Patent airway
- Suction
- Provide O₂
- Assist ventilation if necessary
- Position the patient
- Transport

Reassessment
Reassess every five minutes
- Mental status
- ABCs
- Vital signs

Stroke

Neurologic Deficit Resulting from Stroke
• Neurologic deficit
• Nontraumatic brain injury
• Stroke

Acute Stroke

• Drugs
• Time
• AHAs—7 “Ds” of stroke care
Pathophysiology of Stroke

• Similar to a heart attack
  • “Brain attack”

Types of Stroke
Stroke or Transient Ischemic Attack

GENERAL SIGNS AND SYMPTOMS OF STROKE

- Decreased consciousness
- Severe headaches
- Drooping mouth and eyes
- Paralysis or weakness on one side of the face
- Difficulty speaking or slurred speech
- Loss of bladder or bowel control
- Loss of vision, dizziness, or double vision
- Nausea or vomiting
- Sudden weakness or paralysis of face, arm, or leg
- Possible strokes
- Changes in personality, pupils unequal in size
- Inability to speak
Stroke or Transient Ischemic Attack

Transient Ischemic Attack

• TIA symptoms gone within 24 hours
• No permanent neurologic damage
• Higher chance of permanent stroke

Assessment-Based Approach: Stroke and Transient Ischemic Attack

Scene Size-Up
Scene Size-Up

- Look for signs of trauma
- Look for CNS-altering substances
- Note patient location and appearance

Assessment-Based Approach: Stroke and Transient Ischemic Attack

Primary Assessment

- ABCs
- Positioning
Assessment-Based Approach: Stroke and Transient Ischemic Attack

Secondary Assessment

- Rapid head-to-toe assessment
- Cincinnati Prehospital Stroke Scale
- Los Angeles Prehospital Stroke Screen (LAPSS)

Cincinnati Prehospital Stroke Scale

- Facial droop
- Arm drift
- Slurred speech
Los Angeles Prehospital Stroke Screen

- Age greater than 45 years old
- History of seizures or epilepsy
- Duration of symptoms
- Wheelchair or bedridden status of patient
- Blood glucose level
- Smile, grip, and arm strength

Assessment-Based Approach: Stroke and Transient Ischemic Attack

Emergency Medical Care
Emergency Medical Care

- Patent airway
- Suction
- Assist ventilation if necessary
- Provide O2
- Position the patient
- Check the blood glucose level
- Protect any paralyzed extremities
- Rapid transport

Assessment-Based Approach: Stroke and Transient Ischemic Attack

Reassessment

Reassess every five minutes
- ABCs
- Mental status
- Vital signs
Types of Headache

• Vascular
• Cluster
• Tension
• Organic, traction, or inflammatory
Assessment

- ABCs
- Serious signs

Emergency Medical Care
Emergency Medical Care

• ABCs
• Suction
• Assist ventilation if necessary
• Administer O₂
• Place in position of comfort
• Transport

CASE STUDY

Follow-Up

CASE STUDY

Primary Assessment

• Patient opens eyes; speech is severely slurred
• Right side facial drooping
• RR: 20; HR: 70; skin warm and dry
• Partner places nonrebreather mask at 15 lpm
Secondary Assessment

- Grip strength absent on right
- Cannot lift right arm
- BP: 198/110 mmHg; HR: 74 and irregular; RR: 22; SpO₂: 98 percent; BGL: 98 mg/dL

CASE STUDY

Secondary Assessment

- Takes pills for HTN and heart problems
- History of MI two years ago
- Placed on left side on stretcher

CASE STUDY

Secondary Assessment

- Grip strength absent on right
- Cannot lift right arm
- BP: 198/110 mmHg; HR: 74 and irregular; RR: 22; SpO₂: 98 percent; BGL: 98 mg/dL

CASE STUDY

Treatment and Reassessment

- Status does not change en route
- P: 74; RR: 22; skin warm and dry
- Transfer care to ED staff upon arrival
- Patient has had a stroke
Critical Thinking Scenario

- 68-year-old male described as suddenly slurring his words
- The patient is alert and responding to your questions
- You note an obvious slur to his words in addition to a left facial droop

Critical Thinking Scenario

**Physical exam:**
- Pupils are equal and reactive
- Breath sounds equal and clear bilaterally
- Good pulses in all extremities
- Left arm drifts when he attempts to hold both arms out in front of his body
- Weakness and loss of sensation in the left arm and left leg
- Facial droop when asked to smile

Critical Thinking Scenario

**SAMPLE history**
- S – Left sided weakness, left facial droop
- A – No known allergies
- M – Lipitor
- P – No significant medical history
- L – Had lunch about two hours prior
- E – Patient was on the phone when the slurring suddenly began
Critical Thinking Scenario

Vital signs:
• BP: 242/128 mmHg
• HR: 108 bpm, irregularly irregular
• RR: 14 per minute with good chest rise
• SpO₂: 92 percent on room air
• Skin is warm and dry
• Blood glucose is 89 mg/dL

Critical Thinking Questions

1. What is the oxygenation status of the patient?
2. How would you manage the oxygenation status of the patient?
3. What type of stroke do you suspect the patient suffered?
4. What signs and symptoms would cause you to believe the patient suffered a stroke?
5. How would you manage the patient?
6. What is the significance of the pulse rhythm?
Reinforce and Review

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