Chapter 15 Neurological Emergencies

Stroke (1 of 2)

- Stroke is the _______________ leading cause of death in the United States.
  - After heart disease and cancer
  - It is common in geriatric patients.
  - More _______________ than women have strokes.
  - Strokes are more likely fatal in _______________.

Stroke (2 of 2)

- Other contributing factors include family history and _______________.
- Revolutionary treatments are available for stroke.
  - Many hospitals are certified stroke _______________.
  - Rapid transport is vital.
- Seizures and altered mental status (AMS) may also occur.

Seizures

- Seizures may occur as a result of:
  - A recent or an old _______________ injury
  - A brain tumor
  - A metabolic problem
  - A _______________ disposition

Altered Mental Status (AMS)

- Possible causes of AMS include:
  - _______________
  - Head injury
  - Hypoxia
  - _______________
  - Metabolic disturbances
  - Treatment varies widely.

Brain Structure and Function

The Spinal Cord

Common Causes of Brain Disorder (1 of 2)

- Many different disorders can cause brain dysfunction and can affect LOC, speech, and muscle control.
- If problem is caused by heart and lungs, _______________ brain will be affected.
- If problem is in the brain, only that portion of _______________ will be affected.

Common Causes of Brain Disorder (2 of 2)

- _______________ is a common cause of brain disorder and is treatable.
- _______________ and altered mental status are other causes of brain disorder.
One of the most common complaints
• Can be a _______________ of another condition or a neurologic condition on its own
• Most headaches are _______________ and do not require emergency medical care.

Sudden, severe headache requires _______________ and transport.
• If more than one patient reports headache, consider carbon monoxide poisoning.
• _______________ headaches, migraines, and sinus headaches are the most common.
• Not medical emergencies

_______________ headaches are the most common:
• Caused by muscle contractions in the head and neck
• Attributed to stress
• Pain is usually described as _______________ , dull, or as an ache.

_______________ headaches are the second most common:
• Thought to be caused by changes in the blood vessel size in the base of the brain
• Pain is usually described as _______________ , throbbing, and pulsating.
• Often associated with visual changes
• Can last for several _______________

Sinus headaches:
• Caused by _______________ that is the result of fluid accumulation in the sinus cavities
• Patients may also have _______________ symptoms of nasal congestion, cough, and fever.
• Prehospital emergency care is not required.

Serious conditions that include headache as a symptom are hemorrhagic stroke, brain _______________ , and meningitis.
• You should be concerned if the patient complains of a _______________ -onset, severe headache or a sudden headache that has associated symptoms.

Most headaches are _______________ and do not require emergency medical care.
• You should be concerned if the patient complains of:
• A sudden-onset, severe headache
• A sudden headache with _______________________, seizures, AMS, or following trauma

17 Emergency Medical Care: Migraine
• Always assess the patient for other signs and symptoms that might indicate a more serious condition.
• Apply high-flow _______________________, if tolerated.
• Provide a darkened, _______________________ environment.
• Do not use lights and sirens during transport.

18 Cerebrovascular Accident and Stroke
• Cerebrovascular accident (CVA)
  • Interruption of blood flow to the brain that results in the loss of ______________________ function
  • The loss of brain function that results from a CVA

19 3 Causes of a CVA
• ______________________: Blockage of a vessel by a thrombus (blood clot) which forms at a narrow area.
• ______________________: Rupture of a blood vessel.
• ______________________: Blood clot or plaque travels through a blood vessel until it lodges in the brain, blocking blood flow.

20 Thrombosis Caused CVA
21 Embolism Caused CVA
22 Hemorrhage Caused CVA
23 Hemorrhage Caused CVA
24 Hemorrhagic Stroke (1 of 2)
• Accounts for _________% to ___________% of strokes
• People at high risk include those experiencing stress or exertion.
• People at highest risk are those who have very high blood ______________________.
  • Results from ______________________ in the brain
  • Arterial rupture
25 Hemorrhagic Stroke (2 of 2)
• Cerebral hemorrhages are often ______________________.
• An ______________________ is a swelling or enlargement of an artery due to weakening of the arterial wall.
• Some people are born with aneurysms.

26 Ischemic Stroke (1 of 2)
• Most common, accounting for more than __________% of strokes
• Results from an embolism or thrombosis
• Results when blood flow to a particular part of the brain is cut off by a blockage inside a blood vessel
  • Clotting of the cerebral arteries
  • Cerebral embolism
    • Blockage by a clot formed ________________ in the body

27  Ischemic Stroke (2 of 2)
• Symptoms may range from nothing at all to complete ___________________
• Atherosclerosis in the blood vessels is often the cause.
• Plaque forms inside the walls of the blood vessels and may obstruct blood flow.
• Eventually, it causes complete ___________________ of an artery.

28  Signs and Symptoms of Stroke
• Left Hemisphere
  • ___________________: Inability to speak or understand speech
  • Receptive aphasia: Ability to speak, but unable to understand speech
  • Expressive aphasia: Inability to speak correctly, but able to understand speech
• Right Hemisphere
  • ___________________: Able to understand, but hard to be understood

29  Other S/S of CVA
• Alterations in consciousness
• Paralysis
• Loss of speech or slurred speech
• Unilateral blindness
• ___________________

30  Stroke Mimics:
• ___________________
  • Postictal state
  • Subdural or epidural bleeding
  • ___________________

31  Assessing the Stroke Patient
• Primary assessment
  • Check and care for ABCs.
  • Obtain history if possible.
  • Administer ___________________ and manage airway.
• Focused history and physical exam
  • Perform ___________________ exam.
  • Check all 4 extremities for movement and strength
  • Utilize the ___________________ Stroke Scale

32  Cincinnati Stroke Scale (1 of 2)
• ___________________ droop
• Ask patient to show teeth or smile
  • Abnormal if asymmetrical
• ____________________ drift
  • Ask pt to close eyes and hold both arms out with palms up
  • Abnormal if arms do not move equally

33 [Cincinnati Stroke Scale (2 of 2)]
• ____________________
  • Ask patient to say “the sky is blue in Cincinnati or something similar
  • Abnormal if words are slurred or ____________________

34 [Emergency Medical Care for Stroke]
• Patient needs to be evaluated by computed ____________________ (CT).
• Recognizing the signs and symptoms of stroke can shorten the delay to CT.
• Treatment needs to start within _________ to _________ hours of onset.
  • Use of “_______________________ buster” medications
  • Document times carefully
• Careful what you say

35 [Baseline Vital Signs]
• Excessive bleeding in the brain may ____________________ pulse and cause erratic respirations.
• Blood pressure is usually ____________________ .
• Excessive bleeding in the brain may cause changes in ____________________ size and reactivity.

36 [Transport Considerations]
• Place the patient in a comfortable position.
  • Usually on one ____________________ side down and well protected
  • Elevate patient’s head about 6”.
  • Continue giving ____________________ and monitor vitals.

37 [Transient Ischemic Attack (TIA)]
• A TIA is a “mini-_______________________ .”
• Stroke symptoms go away within 24 hours.
• Every TIA is an emergency.
• TIA may be a warning sign of a larger ____________________ .
• Patients with possible TIA should be evaluated by a physician.

38 [Seizures]
• ____________________ : episodes of uncoordinated electrical activity in the brain.
• A seizure, or convulsion, is a temporary alteration in consciousness.
• Account for up to _________% of EMS calls
• In the United States, it is estimated that 4 million people have epilepsy.
• ____________ : Tendency to have repeated episodes of seizure activity.

39 Types of Seizures
• Generalized (___________ Mal) seizure
• Absence (Petit Mal) seizure
• ____________ seizure

40 Generalized Seizure
• AKA: Major Motor or ____________ Mal Seizure
• Affects all parts of body
• Aura: sensation before convulsion
• Convulsion
  • loss of consciousness
  • ____________ phase (rigidity)
  • ____________ phase (rhythmic jerking)
    • incontinence
    • ineffective breathing
• Post-ictal phase-exhaustion, drowsiness

41 Partial Seizure (1 of 2)
• Simple partial seizure:
  • No ____________ in the patient’s level of consciousness
  • May have numbness, weakness, dizziness, visual changes, or unusual smells/tastes
  • May have some ____________ or brief paralysis

42 Partial Seizure (2 of 2)
• Complex partial seizure:
  • Altered ____________ status
  • Results from abnormal discharges from the temporal lobe of the brain
  • Lip smacking, eye blinking, isolated ____________
  • Uncontrollable ____________

43 Absence (Petit Mal) Seizure
• Loss of consciousness without loss of ____________ tone.
• Brief lapse of attention manifested by staring and no apparent response to anyone
• Most common in ____________
• Last for seconds
• Patient fully recovers with a brief lapse of ____________

44 Characteristic of Seizures
• May occur on one side or spread throughout the whole body (generalized)
• Usually last _________ to _________ minutes, followed by period of unconsciousness known as postictal state
• Patient may experience an ____________.
• Seizures recurring every few minutes are known as status ____________________.

45 ▶ Causes of Seizures
• Congenital (epilepsy)
• High _______________________
• Structural problems in the brain
• ______________________ disorders
• Chemical disorders (poison, drugs)
• Sudden high fever
• ______________________ (Low blood sugar)

46 ▶ Recognizing Seizures
• ______________________
• Abnormal or absence of _______________________
• Possible head injury
• Loss of bowel and ______________________ control
• Severe muscle twitching
• Post seizure state of unresponsiveness with deep and labored respirations

47 ▶ Postictal State
• Patient may have labored breathing.
• May have ______________________ : weakness on one side of the body.
• Patient may be lethargic, confused or combative.
• Consider underlying conditions.
  • ______________________
  • Infection

48 ▶ Management of Seizures  (1 of 2)
• Remove from harm. Protect from ______________________.
• Don’t forcibly restrain the patient.
• Roll patient on side.
• After seizure:
  • Assess ABC’s
  • Clear airway
  • ______________________
  • Assist ventilations as needed
• Lower body temperature if ______________________ seizure

49 ▶ Management of Seizures  (2 of 2)
• Never insert anything in patient’s ______________________ !
• Obtain History
  • ask about seizure history and ______________________
  • Phenobarbital, Depakote, Tegretol, Topamax and Dilantin most common
• Obtain blood glucose level if authorized
• Physical exam
  • Look for ____________________ caused by seizure
  • Monitor N/V and vital signs

50 When to Encourage Treatment and Transport
• If patient’s ____________________ seizure.
• If patient has not taken meds recently.
• If seizures are prolonged or ____________________ from usual.
• If patient had ____________________ seizures.
• Any signs of trauma, hypoxia, aspiration, or other serious condition

51 Status Epilepticus
• Defined as ___________ or more seizures without intervening periods of consciousness.
• Immediate life threat.
• Assist breathing.
• Rapid ____________________.
• Request ____________________ backup.

52 Coma
• ____________________-state of unconsciousness from which patient cannot be aroused
• Coma=Immediate Life Threat
• Management
  • ____________________ before investigating
  • Control c-spine if trauma known or suspected
  • Look for ____________________

53 Investigating Cause of Coma
• After ABC’s, investigate cause using DERM
  • D=_______________________ of coma
  • E=_______________________
  • R=_______________________ Pattern
  • M=_______________________ function

54 Investigating Cause of Coma
• Vital Signs
  • ____________________?
  • Increased ICP?
  • Arrhythmias
• Head to Toe Exam
  • Injuries?
  • Snake bites? Insect stings?
  • Drug “_______________________”
• Examine ____________________ for clues
55 Altered Mental Status (AMS)
- ________________________
- Hypoxemia
- Intoxication
- Drug overdose
- Unrecognized head injury

56 Assessing a Patient With AMS (1 of 2)
- Same ________________________ process
- Patient cannot tell you reliably what is wrong.
- Obtain blood ________________________ level if allowed
- Be vigilant in ________________________.
- Monitor for changes or deterioration.

57 Assessing a Patient With AMS (2 of 2)
- Use ________________________ scale to classify severity.
- Consider underlying conditions.
- Monitor for depressed ________________________.
- Ensure that basic airway maneuvers are followed.
- Provide prompt transport to hospital while monitoring the patient.

58 Signs and Symptoms of Brain Disorders
- Many different disorders can affect:
  - Level of ________________________
  - ________________________
  - Voluntary muscle control

59 Geriatric Needs
- Brain ________________________ with age.
- Always consider underlying conditions.
- ________________________ are at higher risk for central nervous system illnesses and injuries.

60 Pediatric Needs
- Children can have AMS caused by:
  - ________________________
    - Seizure
    - Other brain emergencies
  - Treat in the same way as adults.
  - Seizures are often ________________________.
  - Transport to the hospital.