**BTEC 112 Study of Disease**

**Study Guide Unit 5**

**NERVOUS SYSTEM and the EYES and EARS**

1. Define the following terms:

***Nuchal rigidity –*** *Neck stiffness (classic sign of acute bacterial meningitis)*

***Agnosia –*** *Inability to identify an object using one or more of the senses*

***Stupor –*** *Unresponsiveness from which a person can be aroused only by vigorous, physical stimulation*

***Cheyne-Stokes respiration –*** *also known as periodic breathing characterized by oscillation of ventilation between apnea and tachypnea. THIS IS A COMMON BREATHING PATTERN WITH A CVA*

***Atropine –*** *Anticholinergic agent that counteracts the effects of parasympathetic stimulation (used so that the pupil remains dilated to reduce the likelihood of adhesions).*

***Tinnitus –*** *Ringing or buzzing sound in the ears.*

***Vertigo*** *– Sensation of whirling or spinning*

***Photophobia –*** *Pain, intense, unusual intolerance of light*

2. Describe a migraine headache and its etiology.

*It is a recurrent, frequently incapacitating type of headache characterized by intense, throbbing pain often accompanied by nausea and vomiting.*

*Etiology – changes in the cerebral blood flow, presumably due to vasoconstriction and subsequent vasodilation of cerebrocranial arterioles.*

*QUIZ QUESTION ON MONDAY*

3. Describe the symptoms of a migraine headache prior to the onset of the pain.

*Many sufferers report symptoms such as flashing lights before their eyes, photophobia, or a ringing or buzzing in the ears (tinnitus).*

4. Describe an acute epidural and subdural hematoma.

*Acute epidural hematoma is mass of blood, usually clotted, formed* ***between the skull and outer membrane covering the brain (dura mater).***

*Acute subdural hematoma is blood that collects* ***between the dura mater and the second membrane covering the brain (arachnoid membrane).***

5. Compare and contrast the etiology of a epidural and a subdural hematoma.

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| --- | --- |
| ***Epidural hematoma*** | ***Subdural hematoma*** |
| *Forms between skull and dura mater* | *Forms between dura mater and arachnoid membrane* |
| *Caused by seeping of blood from a ruptured vessel* | *Caused by seeping of blood from a ruptured vessel* |
| *Usually from a blow to the head* | *Usually from head striking an immovable object* |
| *Consciousness lost initially followed with intervening periods of consciousness* | *Consciousness lost eventually* |
| *Onset of symptoms occur within a short period of time* | *Onset of symptoms delayed because the blood accumulates slower* |

6. Differentiate a cerebral concussion and a cerebral contusion.

|  |  |
| --- | --- |
| ***Cerebral concussion*** | ***Cerebral contusion*** |
| *Immediate loss of consciousness typically lasting a few seconds to a few minutes* | *The tissue along or just beneath the surface of the brain is bruised* |
| *Caused by blunt impact to the head of sufficient force to cause the brain to strike and rebound from the skull* | *Caused by a blow to the head or the impact of the head against a surface that causes hemispheres of the brain to twist against or slide along the inner surface of the skull* |
| *Continued...*  *Primary symptoms: temporary loss of consciousness, with shallow respirations, depressed pulse rate, flaccid muscle tone* | *Continued...*  *Range from transient loss of consciousness, to coma. May exhibit hemiparesis, severe headache, behavior disturbances. Involuntary evacuation of the bowel and bladder* |
| *Quiet bed rest* | *Need to be hospitalized so that their vital signs can be monitored and rapid medical intervention can be done if needed* |

7. Describe hemiplagia and its etiology.

*It is the loss of voluntary muscular control and sensation on* ***one******side*** *of the body only.*

*Etiology – Damage to the brain frequently caused by a CVA that disrupts the blood supply to the brain and brain stem.*

8. Discuss the location of the spinal cord injury in relation to paraplegic, quadriplegic, or death being the result.

***Paraplegic –*** *Due to trauma to the thoracic and lumbar portions of the vertebral column (T1 or lower).*

*Trauma that produces a vertical compression and twisting of this portion causes the injury.*

*Loss of voluntary motion or sensation of the trunk and lower extremities.*

***Quadriplegic –*** *Due to trauma at or above C5 in the cervical portion of the vertebral column.*

*Trauma that produces stretching, hyperextension or flexion of this portion causes the injury.*

*Paralysis of all four extremities, and usually the trunk. Injuries between C5 and C7 may result in varying degrees of motor and sensory weakness in the arms and shoulders.*

***Death –*** *Injuries above C3 will usually result in death.*

9. Describe the symptoms of acute bacterial meningitis including the classic sign.

*Signs and symptoms are sudden onset of severe headache, vomiting, fevers, and seizures.*

*CLASSIC SIGN IS NUCHAL RIGIDITY (Neck stiffness).*

*QUIZ QUESTION ON MONDAY*

10. Describe the usual treatment for acute bacterial meningitis.

*The treatment is an aggressive, sustained course of antibiotic therapy started as soon as possible.*

11. Name the mechanisms that may produce a cerebral vascular accident.

*Smoking, lack of exercise, poor or high-fat diets, obesity, family history, use of oral contraceptives, high cholesterol, diabetes mellitus.*

12. Describe the etiology of transient ischemic attack.

*It is cause by the temporary obstruction of cerebral arterioles by very small emboli or by ischemia of a small portion of brain tissue due to arterial narrowing in that region.*

13. Briefly describe epilepsy and state how they are categorized.

*It is a chronic brain disorder characterized by recurring attacks of abnormal sensory, motor, and psychological activity.*

*Epilepsy is categorized as partial or generalized.*

***Partial*** *– focal in origin – they affect only one part of the brain and cause specific symptoms.*

***Generalized*** *– nonfocal in origin – may affect the entire brain.*

14. Describe Alzheimer’s disease.

*It is a chronic ultimately fatal, organic brain syndrome characterized by the death of neurons in the cerebral cortex resulting in the replacement with senile or neurotic “plaques.”*

15. Describe the stages of Alzheimer’s disease.

1*. Mild mental impairment – forgetfulness, inability to learn new things, subtle changes in personality*

*2. Increased forgetfulness, agitation, extreme restlessness, some delusions and hallucinations*

*3. Cannot care for self, incontinent, unable to communicate. May not recognize close family members*

*QUIZ ON MONDAY*

16. Describe Parkinson’s disease and what may be deficient within the brain to cause the disease.

*It is a chronic disease characterized by progressive muscle rigidity and involuntary tremors.*

*Dopamine deficiency may be the cause as it is necessary for brain cell functioning.*

17. Describe multiple sclerosis and state the age when it usually occurs.

*It is a chronic, autoimmune, progressive disease characterized by the destruction of the lipid and protein layer, the myelin sheath, which insulates and protects the axons of certain nerve cells.*

*Onset usually occurs during early adulthood and rarely after 60 years of age.*

18. State that multiple sclerosis is a common cause of chronic disability.

*The question is the answer. He worded this one weird!*

19. State the medical name for Lou Gehrig’s disease and describe the condition and its etiology.

*Amyotrophic lateral sclerosis (ALS)*

*It is a disease of motor neurons that results in progressive muscular atrophy and weakness*

*The cause is unknown, but may be due to autosomal inherited traits*

20. What is the prognosis of amyotrophic lateral sclerosis.

*Prognosis is dependent on the area involved and the speed at which the disease progresses. ALS is usually fatal within 3 to 10 years after onset. Death often results from respiratory failure or aspiration pneumonia.*

21. State at least five common symptoms of nervous system disease.

*Headaches, weakness, nausea & vomiting, mood swings, fever, motor & sensory disturbance*

22. Describe the refraction errors and the treatment

*Hyperopia – Focus occurs behind the retina - farsightedness*

*Presbyopia – Loss of elasticity in the crystalline lens of the eye - A form of farsightedness – old eyes*

*Myopia – Focus occurs in front of the retina - Nearsightedness*

*Astigmatism – Light is focused unevenly across retina*

*The treatment is corrective lenses or laser surgery*

23. Describe nystagmus including the signs and symptoms.

*It is the repetitive, involuntary movement of the eye.*

*S & S - Continuous horizontal, vertical, or circular eye* *movements and maybe even blurred vision*

24. Describe a hordeolum, including providing its common name and etiology.

*It is a localized, purulent, inflammatory infection of one or more of the sebaceous glands of the eyelid*

*Common name: Stye*

*Etiology – Infection by staphylococcal bacteria. Often an eyelash is found in the center of the stye*

25. Describe a cataract and list the causes.

*It is opacity, or clouding, of the crystalline lens so that there is a loss of lens transparency. It can be unilateral or bilateral*

*Causes – aging (senile cataracts), eye injuries (traumatic cataracts), certain diseases (secondary cataracts), genetic diseases (myotonic dystrophy), or birth defects (congenital cataracts)*

26. Describe glaucoma and its treatment.

*It is a condition in which accumulating fluid pressure within the eye damages the retina and optic nerve, often* *causing blindness*

*Treatment – Drug therapy is the standard course of treatment, either with drugs applied to the surface of the eye to decrease pressure or drugs prescribed to decrease production of aqueous humor. Surgery that promotes drainage of aqueous humor may also be done.*

27. Describe uveitis and its signs and symptoms.

*It is inflammation of the uveal tract, which is the principle vascular connective tissue component of the eye (iris,* *ciliary body, choroid). The condition is unilateral.*

*S & S – Pain, intense, unusual intolerance of light (photophobia), blurred vision, redness, and constricted pupils*

28. Discuss the two types of otitis media and common treatments.

*Serous – The fluid is comparatively clear and sterile, secreted from the membranes lining the inner*

*ear*

*Suppurative – The fluid is the product of pus-producing bacteria*

*Common treatments – Antibiotics will be ordered to control suppurative, and analgesics may be prescribed for both. Decongestants may be ordered to promote drainage. In serious cases drainage may be done by needle aspiration*

29. Describe macular degeneration, its treatment and prognosis.

*It is a slowly progressive disease that produces changes in the pigmented cells of the retina and macula*

*Treatment – Laser therapy to delay or prevent the onset of blindness. Some types are untreatable.*

*Prognosis – The disease slowly progresses, especially without treatment, and can lead eventually*

*to blindness. Early diagnosis and treatment are helpful*

30. State how the Amsler’s chart is used.

*It is a grid similar to graph paper with horizontal and vertical lines. Persons with macular degeneration my notice distortions of the grid pattern, such as bent lines and irregular box shapes or a gray- shaded area*

31. Describe Meniere’s disease and its signs and symptoms.

*It is a chronic inner ear syndrome marked by attacks of vertigo, progressive deafness, tinnitus, and sensation* *of fullness in the ears*

*S & S – Classic symptoms - Severe vertigo, tinnitus, and sensorineural hearing loss.*

*Acute attacks of vertigo may cause nausea, vomiting, sweating, and loss of balance.*

*HIGHLIGHTED ANSWERS WERE EITHER ASKED BY JOHN MONDAY NIGHT OR WERE ON THE QUIZ (MARKED AS QUIZ QUESTIONS)*

*PRESENTATION QUESTIONS WERE AS FOLLOWS:*

1. At what age can hearing loss happen?

*Any age*

2.What part of the eye does macular degeneration (MD) effect?

1. *Retina*

3. What type of age-related macular degeneration (AMD) is the most common?

*Dry type*

4. If you hear ringing in your ears and no one is calling you....

5. Charcot-Marie tooth disease is hereditary. T/F?

*True*

6. Arnold Chiari disease.

*Answer is both a & b*

7. Multiple Sclerosis (MS) is a

*d) All of the above*