TRAUMA LIFE SUPPORT – ADVANCED EXAMINATION
(TLS – A)

1. In patients with compromised airways, definitive control of the airway is achieved by
   a. Endotracheal Intubation
   b. Chin-Lift
   c. Jaw-Thrust
   d. Oropharyneal airway (oral airway)

2. ABC refers to
   a. airway, breathing, circulation
   b. the sequence of initial resuscitation management
   c. both a and b
   d. none of the above

3. A compromised airway may occur due to
   a. blockage of the airway
   b. neck injury
   c. a and b
   d. other

4. Hypothermia in the ED can be treated with
   a. crystalloid fluids at 102.2 degrees F
   b. a warmed treatment area
   c. microwaved fluids
   d. a and b

5. Definitive hemorrhage control refers to
   a. volume resuscitation only
   b. possible surgery, stabilizing of the pelvis, and angioembolization
   c. constant volume resuscitation
   d. none of the above

6. Rates of fluid administration are measured by
   a. vein diameter
   b. length and the diameter of catheter
   c. both a and b
   d. catheter size is irrelevant

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7. Oxygenation concentrations can be best improved by
   a. oxygen reservoir facial mask with a minimum flow rate of 11 L/min.
   b. nasal catheter
   c. nasal cannula
   d. nonrebreather mask

8. Pulse oximetry measured at which saturation level is a strong indicator of adequate peripheral arterial oxygenation? **TABLE-2-2, page 39**
   a. 50%
   b. 60%
   c. 70%
   d. 95%

9. Pulse oximetry is less reliable in trauma patients with
   a. carbon monoxide poisoning
   b. anemia
   c. hypothermia
   d. all of the above

10. Bag-mask ventilation is more effectively administered by
    a. two people
    b. one person
    c. the three-person technique
    d. none of the above

11. The most common cause of shock in trauma patients is
    a. isolated brain injuries
    b. hemorrhage
    c. infection
    d. cancer

12. The cardiac output system is determined by **FIGURE 3-1, p 57**
    a. heart rate
    b. stroke volume
    c. multiplying the heart rate by the stroke volume
    d. Starling’s law
13. The administration of appropriate fluid resuscitation solution can
   a. help reverse a state of shock
   b. prevent progressive cellular damage
   c. prevent additional tissue swelling
   d. all of the above

14. Examples of the types of warmed isotonic electrolyte solution used in initial fluid therapy are
   a. lactated Ringer’s
   b. normal saline
   c. a and b
   d. neither a or b

15. The 3 for 1 rule is a general guideline that refers to what in fluid dosage
   a. replacing each 1mL of blood loss with 3mL of crystalloid fluid
   b. mechanical fluid resuscitation
   c. restoration of organ perfusion
   d. replacing 3mL of blood loss with 1mL of crystalloid fluid

16. Gastric dilation is particularly common in which trauma patients
   a. people with lower extremity injuries
   b. children
   c. women who are pregnant
   d. the elderly

17. The vital signs in patients who have a rapid response to initial fluid resuscitation
   a. return to normal
   b. remain abnormal
   c. neither a or b
   d. remain hemodynamically unstable

18. Blood preparation for a patient categorized with a transient response is TABLE 3-2, p 65
   a. emergency blood release
   b. type-specific
   c. cross-matched and typed
   d. none of the above
19. Metabolic acidosis can result from
   a. continued hemorrhage
   b. lack of tissue perfusion
   c. a and b
   d. none of the above

20. Tachypnea causes
   a. respiratory alkalosis
   b. acidosis
   c. persistent acidosis
   d. ongoing blood loss

21. Patients categorized with minimal or no response to initial fluid resuscitation probably
    **TABLE 3-2, p 65**
    a. have severe blood loss greater than 40%
    b. need more blood and fluid
    c. need surgical intervention
    d. all of the above

22. In the case of severe blood loss, if type-specific blood is unavailable, then this type of
    blood is indicated
    a. AB
    b. O
    c. A
    d. B

23. The sequence for conducting an abdominal exam is as follows:
    a. inspection, auscultation, percussion, palpation
    b. percussion, palpation, auscultation, inspection
    c. palpation, percussion, inspection, auscultation
    d. inspection, percussion, palpation, auscultation

24. Pertinent questions in patient history due to a vehicle crash are
    a. who caused the accident
    b. speed of the vehicles, use of restraints, and airbag deployment
    c. type of impact
    d. b and c

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25. The need for resuscitative thoracotomy in the ED should be made with a surgeon.
   a. true
   b. only when there is blunt trauma
   c. only if the patient has no pulse
   d. only when there is no myocardial electrical activity (PEA)

26. Lethal pulmonary contusion is
   a. not sudden
   b. a common chest injury
   c. a and b
   d. none of the above

27. Possible signs of a tracheobronchial tree injury are
   a. tension pneumothorax and a mediastinal shift
   b. SubCut emphysema
   c. the coughing up blood
   d. all of the above

28. Myocardial contusion is diagnosed
   a. by FAST
   b. inspection of the myocardium
   c. through an ECG
   d. all of the above

29. Esophageal rupture is treated by
   a. thoracotomy
   b. draining the pleural space and mediastinum
   c. a and b
   d. none of the above

30. Secondary survey is usually needed to identify potentially life-threatening thoracic injuries such as
   a. simple pneumothorax
   b. pulmonary contusion
   c. traumatic aortic disruption
   d. all of the above
31. Secondary identification of life-threatening thoracic injury involves
   a. a thorough physical exam
   b. chest x-ray, ECG
   c. pulse oximetry, ABG measurements
   d. all of the above

32. For a penetrating abdominal trauma the advantage of a computed tomography scan is
   a. early diagnosis
   b. detection of injuries to the diaphragm
   c. speed
   d. diagnosing certain pelvic organ and retroperitoneal injury

33. Two rapid adjunct studies in identifying abdominal hemorrhage are TABLE 5-2, p. 119
   a. FAST and DPL
   b. AP chest x-ray and DPL
   c. CT and FAST
   d. CT and AP chest X-ray

34. Laparotomy is indicated with
   a. Fascial penetration with intraperitoneal bleeding
   b. peritonitis
   c. a and b
   d. a negative FAST and DPL

35. The main organs affected by blunt pelvic and abdominal trauma are
   a. pancreas, and small bowel
   b. hip bones
   c. the liver, kidneys, and spleen
   d. the duodenum and the diaphragm

36. X-ray abnormalities that indicate tears in the diaphragm are
   a. elevated hemidiaphragm
   b. hemothorax
   c. neither a or b
   d. a and b
37. Pancreatic trauma can be determined by
   a. double-contrast CT
   b. normal serum amylase
   c. patient history
   d. a repeated double-contrast CT

38. Lateral compression (closed) injuries occur in __________ % of pelvic fractures
   FIGURE 5-7, 5-8 5-9, p122
   a. 15-20%
   b. 60-70%
   c. 5-15%
   d. 90%

39. AP (anterior-posterior) pelvic injuries can be the result of
   a. falls over 12 feet
   b. shear force
   c. lateral compression
   d. none of the above

40. The Monro-Kellie Doctrine describes FIGURE 6-3, p 135
   a. the relationship between intercranial volume and pressure
   b. CSF
   c. GCS score
   d. the foramina of Monro

41. Normal ICP resting status is approximately FIGURE 6-3, p 135
   a. 20mm Hg
   b. 10mm Hg
   c. 1mm Hg
   d. 60mm Hg

42. The Glasgow Coma Scale assesses TABLE 6-2, p 138
   a. eye, motor and verbal responses
   b. mechanism of brain injury
   c. types of intercranial lesions
   d. morphology
43. A brain injury with a GCS score of 3-8 is classified as TABLE 6-1, p137
   a. moderate
   b. minor
   c. severe
   d. very minor

44. Signs of a skull fracture may include
   a. CSF leakage from the ears or nose
   b. Ecchymosis
   c. Seventh or eighth nerve dysfunction
   d. All of the above

45. Minor brain injury is defined by a GCS score of TABLE 6-1, p 137
   a. 9-12
   b. 13-15
   c. 3-8
   d. 1-5

46. Minor Traumatic Brain Injury (MTBI)
   a. is a concussion
   b. does not indicate need for a secondary survey
   c. includes disorientation, amnesia and loss of consciousness
   d. patients tend to deteriorate

47. Patients with an MTBI require a CT head scan when
   a. they are greater than age 65
   b. their GCS score drops below 15 two hours post injury
   c. they have multiple episodes of vomiting
   d. any of the above

48. Mannitol to reduce elevated ICP is normally given in a ________________solution
   a. 20%
   b. 25%
   c. 30%
   d. 35%
49. Spinal cord injuries above the T1 result in
   a. paraplegia
   b. quadriplegia
   c. voluntary toe flexion
   d. anal wink

50. Examples of incomplete spinal cord injury are
   a. any sensation or voluntary movement
   b. sacral reflexes
   c. toe flexion
   d. a and c

51. How long should a patient be immobilized when a spine or spinal cord injury is suspected?
   a. Until the patient recovers
   b. Until an x-ray is taken to identify a possible fracture
   c. After sedatives
   d. Immediately upon reaching the ER

52. Continuous immobilization of the cervical spine includes use of
   a. backboards
   b. a semi-rigid cervical collar
   c. bolstering materials, tape and straps
   d. all of the above

53. Visible signs of a pelvic fracture with potential hemorrhage are
   a. bruising and swelling that increases in the perineum
   b. ongoing bruising in the scrotal region
   c. a and b
   d. only a

54. Pelvic hemorrhage and instability can be temporarily controlled with
   a. internal traction
   b. external counterpressure
   c. a and b
   d. neither a or b
55. Major arterial injury can be initially managed with
   a. direct pressure
   b. fluid resuscitation
   c. arteriography
   d. a and b

56. Crush syndrome can lead to
   a. acute renal failure
   b. disseminated intravascular coagulation (DIC)
   c. a and b
   d. none of the above

57. Injuries that threaten a limb include
   a. open wounds near joints
   b. traumatic amputation
   c. vascular injury
   d. any of the above

58. Open wounds and fractures should initially be considered
   a. connected
   b. unrelated
   c. uninfected
   d. infected and unrelated

59. Joint injuries are
   a. usually life-threatening
   b. usually limb-threatening
   c. revealed by x-ray
   d. none of the above

60. Some early clinical signs of thermal airway inhalation injury are
   a. burns to the face head or neck
   b. carboxyhemoglobin levels over 10%
   c. hoarseness
   d. all of the above
61. A full-thickness burn is a
   a. third-degree burn  
   b. a first degree burn  
   c. cosmetic injury only  
   d. shallow burn

62. The Rule of Nines is used to estimate
   a. the size and depth of burns  
   b. CO poisoning  
   c. inhalation  
   d. allergies

63. Burns covering either the front or back of the trunk represent _____% body surface. 
   FIGURE 9-1, p214
   a. 1%  
   b. 18%  
   c. 4.5%  
   d. 2%

64. Partial thickness burns usually appear
   a. dry and leathery  
   b. blistered  
   c. wet  
   d. b and c

65. Patients with HbCO levels between 40%- 60%
   a. have carbon monoxide (CO)poisoning  
   b. are at high risk for coma or death  
   c. a and b  
   d. do not have carbon monoxide poisoning

66. CO exposed patients should get 100% oxygen flow through nonrebreather mask because
   a. CO affinity for hemoglobin is 240 times greater than that of oxygen and has a half-life of 4 hours if the patient is breathing only room air.  
   b. oxyhemoglobin dissociation curve is to the right  
   c. CO affinity is 240 times greater for oxygen  
   d. nonrebreather masks are recyclable

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67. A reliable measurement of circulating blood volume in patients with burns is
   a. hourly blood-pressure measurements
   b. hourly urinary output
   c. an ECG
   d. vital signs

68. The general urinary output goal per hour in adult burn patients is about
   a. 0.5 to 1.0 mL urine per kg of body weight
   b. at least 1.0mL
   c. less than 0.5mL
   d. 2-4mL

69. The fluid resuscitation guideline for burn victims is
   a. 2-4 mL Ringer’s lactate solution within the first 24 hours of injury
   b. 2 -4 mL Ringer’s lactate solution from the start of fluid resuscitation
   c. 2-4 mL Ringer’s lactate solution every eight hours
   d. none of the above

70. Fluid resuscitation requirements _____________________________________________
   a. depend on age and body weight
   b. depend on patient response
   c. a and b
   d. do not vary

71. Normal urinary output in infants measures
   a. 0.5 mL/kg/hr
   b. 2 mL/kg/hr
   c. 1 mL/kg/hr
   d. none of the above

72. During a pediatric needle and tube thoracostomy procedure
   a. small chest tubes should be used
   b. 14-18 gauge over-the-needle catheters are recommended
   c. a tunneling technique is best for tube placement
   d. a and c

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73. The preferred route of venous access in children is
   a. venus cutdown
   b. a peripheral percutaneous route
   c. external jugular vein
   d. femoral vein

74. Compared to the adult brain the pediatric brain is anatomically
   a. different
   b. identical
   c. the same at age 2
   d. the same at age 5

75. The GCS score for pediatric head trauma patients TABLE 10-5, p 240
   a. has a modified verbal score component
   b. is exactly the same as in adults
   c. includes factors such as crying and inconsolability
   d. a and c

76. Children are at greater risk of
   a. impact seizures
   b. secondary brain injury
   c. hypothermia
   d. all of the above

77. Brain injury outcomes in children is
   a. worse than in adults
   b. better in children under 3
   c. worse in children under 3 and better than in adults
   d. none of the above

78. Delay in the restoration of normal pediatric circulating blood volume
   a. worsens initial injury
   b. increases chances of a secondary brain injury
   c. both a and b
   d. none of the above

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79. SCIWORA stands for
   b. Spinal Cord Injury Without Radiographic Abnormalities
   c. Science World Association
   d. Spinal Cord Injury With Radiographic Abnormalities

80. Examples of differences in pediatric spinal anatomy are
   a. facet joints are flat
   b. normal growth can appear as a fracture in a spine x-ray
   c. joints have greater flexibility
   d. all of the above

81. Geriatric trauma patients experience
   a. more cervical spine injuries
   b. more frequent subdural hematomas
   c. a and b
   d. neither a or b

82. Osteoarthritis can be a cause of _________________ in elderly patients
   a. decreased brain weight
   b. canal stenosis
   c. visual acuity
   d. demyelinization

83. Hypothermia in geriatric patients may be caused by
   a. sepsis
   b. endocrine disease
   c. both a and c
   d. none of the above

84. Dramatic changes to the skin in elderly patients can cause
   a. hypothermia
   b. delays in wound healing
   c. infection
   d. all of the above
85. Elderly patients experience fractures most commonly in the
   a. long bones, wrist and hip
   b. ankles
   c. fingers
   d. jaw

86. Treatment of elderly patients should include attention to
   a. nutrition
   b. drug interactions
   c. chronic diseases
   d. all of the above

87. The uterus is intrapelvic until about the ________________ week of gestation
   a. 3rd
   b. 12th
   c. 20th
   d. 30th

88. By the 36th week fundal height reaches to the
   a. pelvis
   b. costal margin
   c. abdomen
   d. normal position

89. During the second trimester of pregnancy abdominal trauma can cause
   a. amniotic fluid embolism
   b. disseminated intravascular coagulation
   c. both a and b
   d. neither a or b

90. During pregnancy the bowel positioned cephalad into the _________________________
   a. upper abdomen
   b. wall of the uterus
   c. bladder
   d. cervix
91. In the third trimester, maternal pelvic trauma increases the risk of
   a. fetal skull fracture
   b. abruptio placentae
   c. neither a or b
   d. both a and b

92. Changes in blood volume and composition during pregnancy are
   a. increased blood volume, heart rate and cardiac output
   b. increased White Blood Count
   c. decreased blood pressure
   d. all of the above

93. By late pregnancy ____________________________ is a common condition
   a. hypocapnia (PaCO₂, 30mm Hg)
   b. reduced progesterone
   c. decreased inspiratory capacity
   d. lowered PaCO₂ levels

94. Peri-mortem cesarean section is more successful in cases of
   a. hypovolemic cardiac arrest
   b. other causes of cardiac arrest
   c. they are equally successful
   d. none of the above

95. The placenta receives __________________________ percent of maternal cardiac output
   a. 20%
   b. 10%
   c. 30%
   d. 40%

96. Criteria that can indicate need for an inter-hospital transfer
   a. head trauma or spinal cord injury
   b. pulmonary contusion
   c. severe burns
   d. all of the above

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97. Co-morbidity factors that may require inter-hospital transfer
   a. age
   b. insulin-dependent diabetes
   c. immune-suppression
   d. all of the above

98. Factors to consider when determining the need for inter-hospital transfer
   a. time between injury and definitive care
   b. level of care and resources available at local hospital
   c. a and b
   d. neither a or b

99. Documents that go with the patient during transfer are
   a. treatment record
   b. any labs or films
   c. both a and b
   d. none

100. Transfer to a verified trauma center should not be delayed
   a. to obtain lengthy diagnostic studies
   b. to give a tetanus shot
   c. to dress wounds
   d. all of the above