

# **ATLS Practice Test 12**

1. A 42-year-old male restrained driver is brought to the emergency department after a high-speed frontal collision. He is alert but complains of severe left chest pain and shortness of breath. On examination his left hemithorax is dull to percussion, breath sounds are decreased on the left, and his blood pressure is 96/58 mm Hg with a heart rate of 120 beats per minute. A portable upright chest radiograph shows an air-fluid level occupying most of the left hemithorax and mediastinal shift toward the right. Which intervention is most appropriate at this time?
  - A. Emergent left anterolateral thoracotomy in the emergency department.
  - B. Tube thoracostomy on the left side.
  - C. Pericardiocentesis.
  - D. Immediate transfer to the operating room for exploratory laparotomy.
  - E. Needle decompression of the left chest.
  
2. A 68-year-old man with known coronary artery disease arrives after chest trauma with chest pain. Electrocardiography shows diffuse ST-segment depression and troponin is mildly elevated. Transthoracic echocardiography shows moderate pericardial effusion without tamponade. Which is the most appropriate next step?
  - A. Admit for observation and serial echocardiography and electrocardiography.
  - B. Urgent pericardiocentesis to remove the effusion immediately.
  - C. Start intravenous heparin infusion for presumed myocardial ischemia.
  - D. Immediate transfer for pericardial window or operative drainage.
  - E. Administer thrombolysis for suspected acute coronary thrombosis.
  
3. A 54-year-old woman with severe chronic obstructive pulmonary disease presents after blunt chest trauma. She is tachypneic and hypoxic on supplemental oxygen. Chest radiograph shows multiple left-sided rib fractures with flail segment and near-complete atelectasis of the left lung. She is in severe pain and unable to cough effectively. Which is the most appropriate next step?
  - A. Analgesia including regional nerve block or epidural analgesia, aggressive pulmonary toilet, and admission to a monitored setting.
  - B. Immediate surgical fixation of the fractured ribs in the emergency department.
  - C. Early tracheostomy to assist with secretion clearance and ventilation.
  - D. Routine opioid boluses and discharge once oxygenation improves.
  - E. Observation with incentive spirometry and oral analgesics on the general ward.

4. A six-year-old child is struck by a car at low speed and brought to the trauma bay. He is alert but frightened. His vital signs are: respiratory rate 28 breaths per minute, heart rate 140 beats per minute, blood pressure 88/48 mm Hg, and oxygen saturation 94 percent on room air. He has an obvious deformed left femur and a distended, tender abdomen with seat-belt contusion across the lower abdomen. Which of the following is the most appropriate next diagnostic step?
  - A. Immediate computed tomography scan of the abdomen and pelvis with intravenous contrast.
  - B. Focused assessment with sonography for trauma of the abdomen (extended to the pelvis) and serial abdominal examinations.
  - C. Diagnostic peritoneal lavage.
  - D. Urgent laparotomy without further imaging because of mechanism and hypotension.
  - E. Plain abdominal radiograph and pelvic radiograph.
5. An 82-year-old woman on daily aspirin falls and sustains a ground-level fall with head impact. She is awake with a Glasgow Coma Scale score of 15, but has a moderate scalp hematoma and is somnolent at times per the caregiver. She takes an angiotensin-converting enzyme inhibitor and a statin. What is the best management regarding head imaging?
  - A. No imaging is necessary because she is fully oriented and has no focal deficit.
  - B. Perform computed tomography of the head because age greater than 65 years and head impact are indications for imaging.
  - C. Observe for six hours and discharge if she returns to baseline because aspirin is not a true anticoagulant.
  - D. Defer imaging unless new focal neurological deficits develop.
  - E. Perform magnetic resonance imaging of the brain immediately as the first imaging choice.
6. A 28-year-old woman at 32 weeks of gestation is involved in a moderate-speed motor vehicle collision. She is hemodynamically stable but complains of uterine tenderness and vaginal spotting. Fetal heart tones are present and normal. Which is the most appropriate next step?
  - A. Immediate tocolysis with intravenous magnesium sulfate to prevent preterm labor.
  - B. Continuous maternal and fetal monitoring with focused assessment for possible placental abruption, and early obstetric consultation.
  - C. Administer routine pelvic radiographs and discharge if they are normal.
  - D. Immediate computed tomography of the abdomen and pelvis.
  - E. Immediate laparotomy because vaginal bleeding implies uterine rupture.
7. A 34-year-old male presents after a motorcycle collision. He has an open fracture of the left femur and hypotension requiring ongoing intravenous fluid resuscitation. During the primary survey you note gross hematuria that initially clears but then becomes gross again after fluid resuscitation. What genitourinary injury is most likely and what is the most appropriate diagnostic step?

- A. Ureteral transection; proceed to intravenous urography.
  - B. Urethral distraction injury; perform immediate blind urethral catheterization.
  - C. Renal parenchymal injury; obtain computed tomography of the abdomen and pelvis with intravenous contrast.
  - D. Bladder contusion only; observe with serial urine analysis.
  - E. Posterior urethral injury; perform retrograde urethrography before catheterization.
8. A 76-year-old man with chronic kidney disease and congestive heart failure falls and develops a displaced femoral neck fracture. In the trauma evaluation, he is noted to have a low blood pressure of 92/50 mm Hg and a hemoglobin concentration of 82 grams per litre. Which of the following best describes the perioperative transfusion strategy and resuscitation priorities for this older adult?
- A. A restrictive transfusion threshold (hemoglobin less than 70 grams per litre) should be used universally in older adults to avoid volume overload.
  - B. A liberal transfusion threshold (hemoglobin less than 100 grams per litre) is required in older patients with cardiac comorbidity.
  - C. Individualized transfusion decision balancing oxygen delivery, symptoms, ongoing blood loss, and cardiac disease; correct reversible causes and optimize oxygenation and perfusion.
  - D. Avoid red blood cell transfusion because elderly patients are at higher risk of transfusion reactions.
  - E. Immediate large-volume crystalloid resuscitation to normalize blood pressure prior to any blood transfusion.
9. A woman at 36 weeks of gestation is brought after a high-speed motor vehicle collision. She is intubated and mechanically ventilated. The fetal heart rate monitoring shows persistent late decelerations. Maternal blood pressure is 100/60 mm Hg, oxygen saturation 98 percent on ventilator, and there is concern for uterine rupture versus placental abruption. What is the appropriate immediate action?
- A. Proceed to emergency cesarean delivery if maternal resuscitation is adequate and the fetus is viable.
  - B. Transfer the patient to magnetic resonance imaging to clarify diagnosis before operative delivery.
  - C. Administer tocolytic agents to improve uterine perfusion prior to delivery.
  - D. Delay obstetric intervention because maternal oxygenation is normal.
  - E. Perform an immediate external cephalic version to correct fetal position.
10. A 25-year-old male presents after sustaining multiple stab wounds to the left chest and upper abdomen. He is hypotensive with a systolic blood pressure of 70 mm Hg and unresponsive to initial fluid bolus. On chest auscultation breath sounds are diminished on the left and trachea is midline. The focused assessment with sonography demonstrates a significant pericardial fluid collection. What is the most appropriate immediate intervention?

- A. Emergency pericardial window in the operating room.
  - B. Emergency department pericardiocentesis.
  - C. Emergent median sternotomy in the emergency department.
  - D. Left anterolateral thoracotomy in the emergency department.
  - E. Rapid blood transfusion and repeat focused assessment with sonography.
11. A 31-year-old soldier sustains multiple blast-related extremity injuries in a remote area. On initial survey his left lower limb is mangled with open fractures and contamination. Evacuation will take several hours. What is the most appropriate initial field management to reduce mortality risk associated with the limb injury?
- A. Immediate definitive internal fixation of fractures in the field.
  - B. Triage for delayed care and attend to more urgent cases.
  - C. Hemorrhage control, temporary external stabilization, aggressive wound irrigation, sterile dressing, broad-spectrum antibiotics, and tetanus prophylaxis.
  - D. Immediate field amputation.
  - E. Immobilize with a splint only and defer antibiotics until hospital arrival.
12. A nine-year-old child requires massive transfusion for hemorrhagic shock after a pelvic fracture. Which transfusion strategy is most appropriate in the pediatric patient with ongoing hemorrhage?
- A. Red blood cell transfusion alone until hemorrhage is controlled.
  - B. Balanced transfusion with packed red blood cells, plasma, and platelets guided by laboratory results and clinical status, with attention to calcium and temperature.
  - C. Fresh whole blood.
  - D. Crystalloid resuscitation with large volumes of normal saline as first-line to restore circulating volume.
  - E. Platelet transfusion only because children have a greater tendency to develop coagulopathy.
13. A 29-year-old male is brought after an isolated penetrating injury to the right abdomen. He is hemodynamically stable with localized tenderness and an entrance wound in the right lower quadrant. Local wound exploration suggests peritoneal violation. What is the most appropriate management in an adult who is stable with suspected peritoneal violation?
- A. Immediate exploratory laparotomy
  - B. Serial clinical observation without imaging
  - C. Local wound closure and discharge
  - D. Computed tomography of the abdomen and pelvis with intravenous contrast
  - E. Diagnostic peritoneal lavage only
14. A 53-year-old male sustains a through-and-through penetrating injury posterior to the left axilla from a shotgun blast at close range. He is hypotensive and the left upper extremity is pulseless and cold. What is the most appropriate immediate management for limb salvage?
- A. Immediate fasciotomy at the bedside.
  - B. Immediate transfer to computed tomography for vascular study.
  - C. Immediate surgical exploration with vascular control and repair.
  - D. High-flow oxygen and observation to see if perfusion returns.
  - E. Administration of systemic vasopressors and serial neurovascular checks.

15. A 35-year-old male after blunt trauma has completed primary survey and resuscitation. He is hemodynamically stable and alert. During the secondary survey, you find crepitus and localized chest wall tenderness over the left lateral chest and focal subcutaneous emphysema. Vital signs remain stable. What is the most appropriate next step in the secondary survey?
- A. Local wound exploration only because the patient is stable.
  - B. Obtain a dedicated chest computed tomography with intravenous contrast to evaluate for underlying rib fractures, pulmonary contusion, and tracheobronchial injury.
  - C. Ignore chest findings because the primary survey was normal.
  - D. Immediate tube thoracostomy without imaging because subcutaneous emphysema always indicates massive pneumothorax.
  - E. Perform only a chest radiograph and proceed with discharge if normal.
16. An 85-year-old woman on warfarin therapy for atrial fibrillation presents after a fall with femoral head fracture. Her international normalized ratio is 3.5 and she requires urgent surgery. Which is the best strategy for rapid reversal of anticoagulation?
- A. Give oral vitamin K and wait 24 hours for reversal.
  - B. Administer intravenous vitamin K plus prothrombin complex concentrate, with dosing guided by the international normalized ratio, to achieve rapid reversal.
  - C. Give fresh frozen plasma as the first-line rapid reversal in older adults.
  - D. Proceed to surgery without reversal because delaying surgery increases morbidity.
  - E. Administer platelet transfusion to reverse warfarin anticoagulation.
17. A patient with blunt abdominal trauma has a normal focused assessment with sonography for trauma and a normal initial hemoglobin, but persistent abdominal pain. What is the best next step?
- A. No further evaluation is necessary because focused sonography is normal.
  - B. Repeat focused assessment with sonography for trauma in one to two hours and consider computed tomography of the abdomen with contrast if pain persists or clinical concern remains.
  - C. Proceed to diagnostic peritoneal lavage.
  - D. Immediate laparotomy.
  - E. Discharge with analgesia and outpatient follow up.
18. A 2-year-old boy is brought after being accidentally backed over by a truck. He is pale, lethargic, and tachycardic. His blood pressure improves transiently after 20 mL/kg crystalloid but declines again. FAST shows no free fluid. What is the *most likely source* of blood loss?
- A. Abdominal solid organ injury
  - B. Pelvic fracture
  - C. Long bone fracture
  - D. Chest hemorrhage
  - E. Scalp laceration

19. A 79-year-old woman on apixaban falls down stairs and presents alert but with new confusion. Vitals are normal. There is no external bleeding. Which of the following is the best initial imaging study?
- A. Computed tomography of the brain without contrast
  - B. Magnetic resonance imaging of the brain
  - C. Computed tomography angiography of the head and neck
  - D. Skull radiographs
  - E. Observation with serial neuro exams
20. During the secondary survey, a trauma patient complains of numbness and weakness in both upper limbs but normal strength in the legs. Imaging shows cervical spondylosis without fracture. What is the most likely diagnosis?
- A. Central cord syndrome
  - B. Anterior cord syndrome
  - C. Brown-Séquard syndrome
  - D. Posterior cord syndrome
  - E. Complete cord transection
21. A 3-year-old involved in a high-speed MVC develops respiratory distress 4 hours later. Chest x-ray shows right upper-lobe collapse and mediastinal shift to the right. Breath sounds are absent and percussion is dull on the right. What is the most likely diagnosis?
- A. Pneumothorax
  - B. Hemothorax
  - C. Bronchial rupture
  - D. Diaphragmatic rupture
  - E. Aspiration pneumonia
22. A 78-year-old man on  $\beta$ -blocker therapy presents after being struck by a car. He appears pale but his heart rate is 68 bpm and blood pressure 80/50 mmHg. FAST shows free fluid. What best explains the inappropriately normal heart rate?
- A. Relative bradycardia due to neurogenic shock
  - B. Vagal stimulation from intra-abdominal injury
  - C. Medication-blunted tachycardic response
  - D. Inadequate pain control
  - E. Conduction system disease
23. A 32-year-old woman at 34 weeks gestation sustains blunt abdominal trauma. She is pale, heart rate 118 bpm, BP 90/58 mmHg. The fetus shows distress. She receives 2 L of crystalloid with minimal improvement. What is the next best step?
- A. Continue fluids to reach urine output > 50 mL/hr.
  - B. Administer O-negative packed RBCs.
  - C. Give vasopressors to maintain maternal mean arterial pressure.
  - D. Delay transfusion until cross-match complete.
  - E. Focus on fetal monitoring while awaiting labs.

24. A patient after a high-energy MVC has normal initial chest X-ray. Six hours later, she develops hypoxia, patchy bilateral infiltrates, and no JVD. Which mechanism best explains the deterioration?
- A. Fat embolism
  - B. Myocardial contusion
  - C. Pulmonary contusion
  - D. ARDS secondary to sepsis
  - E. Tension pneumothorax
25. A four-year-old child with suspected blunt thoracic trauma has respiratory distress and a chest radiograph demonstrating a left clavicular fracture and widened mediastinum. The child is hemodynamically stable. Which of the following is the best next step?
- A. Immediate transfer to the operating room for exploration for aortic injury.
  - B. Urgent computed tomography angiography of the chest with pediatric contrast protocols.
  - C. Initiate high-flow oxygen and observe on the ward for 24 hours.
  - D. Transthoracic echocardiography as definitive imaging for great vessel injury.
  - E. Remove the clavicular fragments under local sedation to relieve mediastinal pressure.
26. A 70-year-old male with multiple comorbidities arrives after a high-energy motor vehicle collision. He is alert and oriented. The family requests non-operative management and comfort-first approach prior to full assessment. What is the most appropriate initial clinician response and action?
- A. Accept the family request and discharge the patient to home with palliative care arrangements immediately.
  - B. Honor the request without further discussion because family decision always supersedes medical assessment.
  - C. Conduct a brief goals of care discussion with patient and family, clarify the patient's previously stated wishes, establish capacity, and proceed with an appropriate trauma evaluation respecting the patient's preferences.
  - D. Proceed with full invasive interventions because trauma protocols must be applied universally.
  - E. Transfer the patient to the intensive care unit to stabilize prior to goals of care discussion.
27. A 52-year-old man suffering a blast injury complains of new abdominal pain 12 hours after admission. He was initially stable. CT earlier showed no free air. What is the most likely diagnosis?
- A. Delayed hollow viscus perforation
  - B. Splenic rupture
  - C. Mesenteric ischemia from shock
  - D. Pancreatic contusion
  - E. Abdominal compartment syndrome

28. A 40-year-old male in hemorrhagic shock receives massive transfusions with red blood cells, but limited plasma and platelets. His blood pressure stabilizes and relevant blood chemistries are in the normal range, but oozing persists from venipuncture sites. Laboratory results show prolonged INR and thrombocytopenia. The pathophysiology responsible is:
- A. Dilutional coagulopathy due to unbalanced transfusion ratios
  - B. Disseminated intravascular coagulation due to sepsis
  - C. Hemophilia A
  - D. Citrate toxicity
  - E. Hyperfibrinolysis due to tranexamic acid administration
29. A 72-year-old man sustains multiple rib fractures from a motor vehicle crash. He is alert but develops progressive hypoventilation over several hours despite adequate analgesia. What is the most important contributing factor?
- A. Decreased chest wall compliance and baseline poor reserve
  - B. Unrecognized pneumothorax
  - C. Pulmonary embolism
  - D. Pleural effusion
  - E. Diaphragmatic rupture
30. A 40-year-old male sustains a stab wound to the lower left chest, just below the nipple line in the midclavicular line. He is hemodynamically stable. The focused assessment with sonography for trauma shows free fluid in the left upper quadrant. Breath sounds are decreased on the left, and chest radiograph shows an elevated left hemidiaphragm with a nasogastric tube coiled within the left thoracic cavity. What is the most appropriate next step in management?
- A. Observe with serial chest radiographs and physical exams.
  - B. Perform diagnostic peritoneal lavage.
  - C. Proceed with operative repair of a left diaphragmatic injury.
  - D. Insert a second left chest tube.
  - E. Perform computed tomography of the chest and abdomen for confirmation.
31. In a mass casualty event, a trauma team is unsure whether to prioritize a patient with severe open tibial fracture or a patient with mild respiratory distress. Which criterion guides priority?
- A. Patients with orthopedic injuries are always prioritized second.
  - B. Individuals with the greatest need for operative intervention receive priority.
  - C. Patients with respiratory distress should be treated first.
  - D. The individual whose life can be saved with the least resource expenditure is prioritized.
  - E. Generally, the younger the patient, the higher the priority.
32. A 32-year-old male struck on the head is confused and combative. Pupils are equal. Blood pressure is 138/82 millimeters of mercury. Heart rate is 104 beats per minute. Oxygen saturation is 89 percent on high-flow oxygen. What should be done first?



- A. Administer mannitol
  - B. Perform rapid sequence intubation
  - C. Obtain computed tomography of the brain
  - D. Apply cervical collar and observe
  - E. Administer high-dose corticosteroids
33. During a multi-trauma resuscitation, a medical student suggests starting fluid resuscitation with three liters of isotonic crystalloid immediately for an adult in hemorrhagic shock.. Which approach best follows ATLS principles?
- A. Give three liters of crystalloid rapidly to normalize blood pressure.
  - B. Begin permissive hypotension with minimal crystalloid and prepare balanced blood component therapy.
  - C. Avoid all intravenous fluids until surgical control of hemorrhage is achieved.
  - D. Administer vasopressors early to maintain mean arterial pressure above 80 millimeters of mercury.
  - E. Give hypotonic crystalloid to reduce interstitial edema.
34. A 72-year-old man falls down stairs and has neck pain with midline tenderness. He has normal neurological findings. He is cooperative and alert. What is the most appropriate next step?
- A. Remove the collar because the neurological examination is normal.
  - B. Obtain a plain cervical spine series.
  - C. Obtain a computed tomography scan of the entire cervical spine and T1.
  - D. Clear the cervical spine clinically based on low-risk features.
  - E. Delay cervical imaging until after the secondary survey is completed
35. A 3-year-old girl was running holding a pencil, but falls and the pencil penetrates her oropharynx. She is crying, with minimal bleeding, and oxygen saturation is 99% on room air. There is no stridor or hoarseness. What is the most appropriate initial procedure to evaluate this injury?
- A. CT angiography of neck
  - B. Lateral soft tissue neck X-ray
  - C. Flexible fiberoptic laryngoscopy
  - D. MRI neck with contrast
  - E. None — safe to discharge since she is asymptomatic
36. A 45-year-old man was struck in the left eye with a baseball. He presents with decreased vision and a visible reddish layer over the pupil. On slit lamp exam there is layering of blood in the anterior chamber that measures 3 millimeters in height. Intraocular pressure is 30 millimeters of mercury. What is the best next step in management?
- A. Elevate the head of the bed, restrict activity, apply a topical cycloplegic agent, and start a topical beta-blocker and topical steroid; arrange ophthalmology follow up within 24 hours.
  - B. Immediate surgical anterior chamber washout in the emergency department.
  - C. Apply a pressure patch to the eye to tamponade the bleeding and discharge home with oral nonsteroidal anti-inflammatory agents.
  - D. Schedule urgent pars plana vitrectomy.
  - E. Observe without therapy; most hyphemas resolve spontaneously within 24 hours.

37. In massive transfusion protocols, calcium administration is critical because:
- A. Calcium promotes diuresis and prevents renal failure.
  - B. Stored blood contains citrate that binds calcium, impairing coagulation and cardiac contractility.
  - C. It enhances hemoglobin oxygen affinity.
  - D. It prevents hypokalemia during transfusion.
  - E. It neutralizes acidosis from lactate accumulation.
38. A 7-year-old boy with facial burns and singed nasal hairs arrives breathing spontaneously. O<sub>2</sub> saturation is 98% on nasal cannulae. There is no stridor or hoarseness. The nurse asks if intubation should be performed “before swelling sets in.” What is the most appropriate next step?
- A. Observation with humidified oxygen and serial reassessments
  - B. Immediate rapid-sequence intubation
  - C. Emergency cricothyroidotomy under local anesthesia
  - D. Sedation and fiberoptic nasotracheal intubation
  - E. Bag-mask ventilation with 100% oxygen
39. A 29-year-old female presents after a low-height fall with severe lower abdominal pain and inability to void. Her vital signs are stable. On examination there is suprapubic tenderness and a distended bladder palpable to the umbilicus. A pelvic radiograph shows a widened pubic symphysis. Which is the single most appropriate next step in management?
- A. Immediate computed tomography of the abdomen and pelvis with intravenous contrast.
  - B. Retrograde cystography before placing a urinary catheter.
  - C. Place a urethral catheter and observe for urine output.
  - D. Transurethral cystoscopy in the emergency department.
  - E. Urgent reduction of the pelvic diastasis and pelvic binder application only.
40. Injury primary prevention strategies are being prioritized for an urban trauma system with limited resources. Which intervention would yield the best cost-effectiveness?
- A. Expanding helicopter EMS coverage
  - B. Installing smoke alarms in low-income housing
  - C. Conducting media campaigns about distracted driving
  - D. Increasing the number of trauma centers in the city
  - E. Subsidizing bicycle purchase programs