Surgical Critical Care Update POST TEST

1. In what setting is the use of 24/7 in-house coverage potentially have the most impact?
    a. University setting with in-house resident and fellow coverage.
    b. Community teaching program with in-house resident coverage
    c. Community non-teaching program with day-time in-house coverage only.
    d. Community non-teaching cardiac ICU with dedicated NP and critical care anesthesiologist in-house coverage

2. What is the optimal and efficient patient/intensivist ratio?
    a. 20:1
    b. 14:1
    c. 10:1
    d. 5:1

3. High-frequency percussive ventilation has all the following characteristics *except*:

    a. Pressure controlled ventilation
    b. Superimposed percussive breaths upon larger tidal volumes
    c. Airway pressure relief valves
    d. 'Open lung' strategy

4. If there is a QRS complex in every large square of a 12 lead ECG the HR is,
    A. 150 beats/min
    B. 60 beats/min
    C. 100 beats/min
    D. 300 beats/min

5. A code is called after a 67-year-old POD day 3 after a left-hemicolectomy for colon cancer, the rhythm strip shows ventricular fibrillation, the most appropriate intervention is,
    A. Intubation, synchronized biphasic shock at 200 J, Epinephrine, 2 mins CPR

    B. Intubation, Vasopressin 40 units, Epinephrine, CPR 2 minutes, biphasic shock at 200 J
    C. CPR 2 minutes, Intubation, Biphasic shock at 200 J, CPR 2 minutes, ephinephrine
    D. Unsynchronized Biphasic shock at 200 J, CPR 2 minutes, repeat shock, intubation, capnography, CPR 2 minutes, shock, amiodarone 300 mg, ephinephrine, CPR 2 minutes

6. What is the best method for predicting fluid responsiveness (i.e., low preload)?
a) urine output
b) heart rate
c) **passive leg raising**
d) pulse pressure

7. The term “oxygen delivery dependency” is used when

a). **Oxygen consumption decreases with oxygen delivery**
b). Critical carotid stenosis leads to a stroke
c). Arterial oxygen saturation is less than 90%
d). Hemoglobin is less than 5

8. A 64 year old man, who has been in the MICU for 4 days, undergoes an exploratory laparotomy with Graham patch repair of a perforated duodenal ulcer. Postoperatively he requires vasopressor support in addition to volume resuscitation. At admission his body mass index (BMI) was 20 and his prealbumin level was 8 mg/dl.

   The best nutritional therapy on hospital day 5, post-operative day 1 for this patient is:

   (A) Enteral feeds via nasogastric tube

   (B) *Nil-per-os* (NPO) for 5 days and then initiation of enteral nutrition

   (C) Total parenteral nutrition

   (D) Repeat laparotomy for jejunal tube placement and initiation of enteral nutrition via this access

9. Immunonutrition:

(A) Is an enteral feeding formula that contains nutrients such as glutamine, arginine, omega-3 fatty acids, nucleotides, and antioxidants.

(B) Is the standard of care in critically ill septic patients.

(C) Increases the inflammatory response in humans.

(D) Is inexpensive.

10. Which of the following is NOT a diagnostic criterion for heparin-induced thrombocytopenia (HIT)?

    a. History of exposure to low molecular weight heparin in the past week
    b. A platelet drop of 60% within 2 days of starting heparin without prior exposure
    c. A drop in the platelet count that starts 6 days after starting heparin
    d. An acute thrombosis following heparin exposure with no previous history

11. A 64 year old female with a history of coronary artery disease and cardiac stents presents for consideration of an elective sigmoid colectomy for recurrent diverticulitis. She is also on anti-platelet therapy. Which of the following circumstances does NOT describe

current recommendations regarding the appropriate interval before is it safe to operate on this patient?

a. 5 days following cessation of Clopidogrel (Plavix)
b. 7 days after cessation of ticlodipine therapy
c. 4 days after her last dose of full strength aspirin (i.e. 325mgs)
d. Immediately after reversal with platelets in any patient on Plavix or aspirin (if the patient described presents with acute perforation before her elective case was performed)

12. Which of the following is true regarding the concept and literature of Damage Control Resuscitation (DCR):

a. There are several randomized trials to support the use of 1:1:1 (plasma:platelets:RBC) over lower ratios of products (1:1:2)
b. Survival bias is a theory that states that patients in hemorrhagic shock will live longer when they receive higher ratios of products
c. The three tenets of DCR are limited crystalloid-based resuscitation, higher plasma: RBC ratios, and earlier use of vasopressor support
d. Both civilian and military guidelines recommend fluid restrictive strategies in the prehospital settings, titrating small fluid boluses (250 mL) for palpable radial pulse palpable and normal mental status

13. The most effective route of preventing pneumonia in a ventilated patient is
A. Feeding post-operative patients into the small intestine
B**. Positioning the patient with the head of the bed up at 30-45 degrees**
C. Routinely changing ventilator circuits and using single-use catheter suction systems
D. Selective decontamination of the digestive tract (SDD)

14. . Which of the following is **NOT** used to define a symptomatic urinary tract infection with an indwelling catheter according to the CDC?
A. Pyuria (urine specimen with≥10 WBC/mm^3 of unspun urine or >5 WBC/high power field of spun urine)
B. Signs including suprapubic tenderness or costovertebral angle tenderness
C. Positive urine culture of ≥105 CFU/ml (no more than 2 species of microorganisms)
D**. Catheter must be in place for ≥7 days**

15. Fidaxomicin should be used to treat *C. difficile* infection in the following clinical scenario
a. Recurrent CDI with non-NAP1/BI/027 strain
b. Patient with fulminant CDI with WBC 50 and hypotension
c. First episode of CDI in outpatient
d. Treatment failure with IV metronidazole alone

16. A 38 year old male presents to the ED after being found down on the street. He is unresponsive and has agonal respirations. His BP is 170/80 with a pulse of 92. Temperature is 36.4°C. Pupils are 3mm and sluggishly reactive. He has no external signs of trauma. All of the following should be done immediately except:

    a. Endotracheal intubation
    b. Head CT
    c. 0.5 gm/kg mannitol
    d. 1 amp of D50 and 0.4 mg naloxone

17. Tight glycemic control in the SICU
a. Improves mortality for all comers
b. **Carries a modest risk of hypoglycemia**
c. Only works for glucose 80-110mg%
d. Reduces morbidity only in diabetics

18. Which of the following organisms is *LEAST* likely to require a prolonged course of antibiotics for the treatment of ventilator-associated pneumonia (VAP)?

    a. Acinetobacter
    b. Pseudomonas
    c. Stenotrophomonas
    d. **Escherichia**

19. Which of the following is *NOT* considered a best practice for the prevention of ventilator-associated pneumonia?

    a. Daily drug sedation holiday
    b. **Early tracheostomy**
    c. Gastrointestinal and deep venous thrombosis prophylaxis
    d. Elevation of head-of-bed

20. Prone Positioning in adult patients with ARDS is associated with:

    A. Increased radiographic edema
    B. Reduced pressure ulcer rates
    C. Increased ventilator associated pneumonia rates
    D. Reduced mortality in patients with severe hypoxemia

21. The early use of cis-atracurium in severe ARDS is

A. Contraindicated in patients with diabetes
B. Associated with lower mortality in severe ARDS
C. May be facilitated by discontinuation of sedation
D. Required with rescue treatment (HFOV, prone positioning, ECMO)

22. A 36 year-old male underwent an orthotopic liver transplantation with improvement in liver function tests post-operatively. On post-op day 5, he develops a fever to 101.7 and abdominal pain. On exam, the patient has worsening tenderness throughout the abdomen. Transaminases and bilirubins are unchanged from the day before however the white blood cell count is elevated. The abdominal drains are draining bile-tinged fluid that stains positive for yeast with pseudo-hyphae. The next step in managing this patient is:

A. Take the patient to the operating room for abdominal exploration
B. Start an antifungal medication and leave the drains in place
C. Obtain a CT Scan
D. Obtain an ultrasound of the graft looking for hepatic artery thrombosis

23. A 25 year-old male undergoes a pancreas transplant 4 years after a kidney transplant with normalizing blood sugars post-op. The pancreas was anastomosed to the iliac artery and vein (opposite side to the kidney graft) and had a pancreatico-duodeno-cystostomy. On the night of post-op day 2, the patient describes increasing abdominal pain and is noted to be hyperglycemic to >300. On exam, the patient is hemodynamically normal and has tenderness over the pancreas graft with hematuria. What is the next diagnostic step in managing this patient?

A. Take the patient to the OR for emergent exploration
B. Obtain a biopsy of the pancreas transplant
C. Obtain a biopsy of the kidney transplant
D. Obtain an immediate ultrasound of the pancreas transplant

24. Regarding the use of shunts for acute traumatic vascular injury, which of the following statements is false:

a. Damage control surgery is a valid indication for utilizing a shunt
b. Systemic anticoagulation is not mandatory while an indwelling shunt is in place
c. Local anticoagulation may be utilized under some conditions while placing the shunt however is not mandatory
d. Temporary orthopedic fixation should always be performed prior to shunt insertion

25. A 17 year old male presents to the ER after sustaining a single gunshot wound to the abdomen. He is maintaining his airway with an oxygen saturation of 94% with a GCS of 13. His HR is 160 with a SBP of 78mmHg. Which of the following statements regarding Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) in this situation is true?

a. Access to the circulation is through the femoral vein.
b. Ultrasound is of no value in access to the circulation.
c. The process is best performed as a single stage insertion of the catheter into the systemic circulation
d. The location of aortic occlusion will depend on the goal of the procedure.