CERTSHOP

IBSC CCP-C® - Quiz Questions with Answers

1. Transport and Safety

1.

During patient flights on a helicopter, there is a decrease in humidity that can cause chapped lips and a sore throat. Patients receiving in-flight oxygen therapy are twice as susceptible to what complication because of the humidity decrease?

Dehydration

Barondontalgia

Abdominal gas pains

Barotitis media

Correct answer: Dehydration

Temperature is inversely proportional to altitude, so as the transport helicopter climbs higher, there is a decrease in atmospheric temperature, which leads to a decrease in humidity. Before long, the only moisture remaining in the aircraft cabin is produced by the aircrew, patient, and the aircraft's fresh-air system The decrease in humidity can produce dehydration in everyone on board. Patients receiving in-flight oxygen double the risk of dehydration because oxygen is a drying agent. It is recommended to use humidified oxygen on long air transports.

Barondontalgia is a toothache caused by the alternating barometric pressures during flight. Gas pains do occur during flight, but they are not caused by the humidity decrease.

Abdominal gas pains occur because the changes in barometric pressures directly affect the gases located in the body.

Barotitis media is an earache caused by a change in atmospheric pressure. The increasing pressure can result in a failure of the middle ear space to ventilate properly.

2.

When examining the effects of hypoxia, within air transport, there are four stages of hypoxia that are divided by altitude. The compensatory stage, which is the second stage, occurs at which atmospheric height?

10,000 - 15,000 feet

3,000 - 8,000 feet

15,000 - 20,000 feet

5,000 - 10,000 feet

Correct answer: 10,000 - 15,000 feet

The four stages of hypoxia are divided by altitude. 10,000 - 15,000 feet is the second stage.

The stages are as follows:

1. *The first stage, also known as the indifferent stage, is sea level to 10,000 feet.*
2. *The second stage, the compensatory stage, extends from 10,000 to 15,000 feet.*
3. *The third stage, known as the disturbance stage, measures 15,000 to 20,000 feet.*
4. *The fourth stage, the critical stage, extends from 20,000 to 30,000 feet.*

2. Airway, Anesthesia, and Analgesics

3.

You are dispatched to a local restaurant for an adult male choking. You arrive to find the patient unresponsive and lying supine on the floor. Your partner attempts to ventilate the patient via a bag-mask device but is unsuccessful. You re-open the airway and ensure the correct position but are still unsuccessful with assisted ventilations.

You should do which of the following?

Begin chest compressions and visualize the airway with direct laryngoscopy

Provide abdominal thrusts and manual ventilations

Suction the airway and begin chest compressions

Perform a needle cricothyrotomy and ventilate

Correct answer: Begin chest compressions and visualize the airway with direct laryngoscopy

When a patient is suffering from a foreign body airway obstruction, it is important to follow AHA guidelines for the choking adult. Once the patient becomes unresponsive and not breathing, you must begin chest compressions. If chest compressions are not successful, the airway must be visualized via direct laryngoscopy in hopes of removing the foreign body with Magill forceps.

Abdominal thrusts are not indicated because the patient is unresponsive.

Suctioning the airway will not work, as the foreign body is obviously further down in the airway.

A needle cricothyrotomy is a last-ditch effort intervention, which is not indicated in this patient because the next step is direct laryngoscopy.

4.

What important airway structure anchors the vocal cords in the larynx?

Arytenoids

Epiglottis

Cuneiform

Corniculate

Correct answer: Arytenoids

The most important paired cartilages of the larynx are the arytenoids. These structures anchor the vocal cords in the larynx. They are a unique pyramid shape.

The epiglottis is a single cartilage that lies directly over the glottic opening. It is spoon-shaped and prevents anything but air from entering the trachea.

The cuneiform are small cartilages that support the epiglottis and vocal cords.

The corniculate sit on top of the arytenoid cartilage.

5.

A 45-year-old male with a history of COPD is admitted to the ICU with severe pneumonia and ARDS. He is intubated and placed on mechanical ventilation.

Which of the following is the most appropriate approach to setting PEEP on the ventilator for this patient?

Set PEEP based on the ARDSnet protocol, starting at 5 cm H2O and titrating upward

Set PEEP at 5 cm H2O to avoid barotrauma

Set PEEP at 10 cm H2O immediately to maximize alveolar recruitment

Avoid using PEEP to prevent hyperinflation in COPD

Correct answer: Set PEEP based on the ARDSnet protocol, starting at 5 cm H2O and titrating upward

Setting the appropriate PEEP on the ventilator is crucial for managing patients with ARDS, especially those with underlying conditions like COPD. The Acute Respiratory Distress Syndrome Network (ARDSnet) protocol provides evidence-based guidelines for optimizing PEEP to improve oxygenation and prevent ventilator-induced lung injury. The ARDSnet protocol recommends starting PEEP at 5 cm H2O and titrating based on oxygenation targets and patient response. Adjust PEEP to achieve optimal oxygenation with the lowest possible FiO2 (fraction of inspired oxygen), typically aiming for PaO2 of 55-80 mm Hg or SpO2 of 88-95%.

Starting at 5 cm H2O is reasonable, but avoiding titration upward based on patient response is not optimal for managing ARDS.

While higher PEEP may be necessary, starting immediately at 10 cm H2O without titration could increase the risk of barotrauma.

Avoiding PEEP entirely can worsen oxygenation and atelectasis. Careful titration is essential.

6.

You are transporting a 42-year-old female patient weighing 65 kg. She is post-CABG surgery and being transported to a specialty resource center by helicopter. Her ABGs are pH 7.42, PaCO2 38, PaO2 52, HCO3 25. Vent settings Vt 600, R 12, PEEP 5, FiO2 0.6.

Which of the following adjustments should be made to the ventilator?

Increase FiO2 to 0.8

Increase PEEP to 10

Decrease Vt to 500

Decrease FiO2 to 0.2

Correct answer: Increase FiO2 to 0.8

This patient's ABGs reflect hypoxia so adjustments need to be made. Hypoxic patients require an increase in PEEP or FiO2.

There are no conditions that suggest increased dead space, so increasing PEEP would not be of benefit to this patient.

Decreasing the Vt is not recommended in this patient. Increasing Vt would be indicated if this patient had an increased PaCO2.

Decreasing FiO2 would cause the patient more complications.

3. General Medical Patient

7.

Which of the following, is most involved in the pathology of Immune Thrombocytopenia Purpura (ITP)?

- **IgG autoantibodies**
- Hepatomegaly
- Splenomegaly
- Bone marrow suppression

Correct answer: IgG autoantibodies

Immune Thrombocytopenia Purpura (ITP) is an autoimmune disorder caused by the presence of Immunoglobulin G (IgG) autoantibodies on the surface of the platelets and results in the destruction of platelets in the spleen and a platelet count of less than 20,000. Clinically, there are two syndromes that manifest: acute in children and chronic in adults. Treatment consists of steroids (glucocorticoids) and IV immunoglobulin infusion.

Hepatomegaly, Splenomegaly, and bone marrow suppression are not involved in the pathology.

4. Cardiac Patient

8.

You are transporting a 22-year-old female with chest pain and dizziness. The ECG reveals SVT at a rate of 165. You note a delta wave in leads II and V1. The patient states that she feels like her heart is "fluttering," and it causes her to feel short of breath. You should suspect:

- **Wolff-Parkinson White**
- Hypothermia
- Pulmonary embolism
- Cardiac tamponade

Correct answer: Wolff-Parkinson White

Wolff-Parkinson White (WPW) is a pre-excitation syndrome that occurs when an accessory pathway is created in the heart, known as the bundle of Kent, which allows the electrical current to bypass the AV node and enter the ventricles. The hallmark ECG sign of WPW is a delta wave. A delta wave is a slurring of the upstroke of the QRS complex.

The hallmark of an ECG on a hypothermic patient is an Osborne wave.

A pulmonary embolism does not create a delta wave. The amplitude of the QRS is decreased in a pulmonary embolism.

A cardiac tamponade causes a trio of events, which are tachycardia, low QRS voltage, and electrical alternans.

5. Neurological Patient

9.

You are treating a 48-year-old male who was recently diagnosed with a rare brain cancer. The patient is suffering from a convergence nystagmus. This type of nystagmus is indicative of which of the following?

Midbrain lesion

Frontal lobe lesion

Basilar skull fracture

Hemorrhagic stroke

Correct answer: Midbrain lesion

A convergence nystagmus causes a spontaneous and slow drifting ocular divergence with a final and quick convergence jerk. This type of nystagmus is indicative of a midbrain lesion. Other types of nystagmus are retraction, see-saw, optokinetic, vestibular, toxic, and downbeat. Each one is the direct cause of a lesion, toxins, or disease.

A frontal lobe lesion may cause changes in personality, inhibition of impulse control, sluggishness, weakness, anxiety, and/or confusion. There is not a specific type of nystagmus directly related to a frontal lobe lesion.

A basilar skull fracture is the direct result of trauma and may not cause nystagmus.

A hemorrhagic stroke is not associated with nystagmus.

7. Toxic Exposure and Environmental Patient

10.

You are treating an unresponsive 56-year-old female who was found on her bathroom floor with an empty bottle of diazepam and alcohol beside her. Her vital signs are BP 76/P, R 6, P 38, and SpO2 78%. You should do which of the following?

Provide manual ventilation and prepare to intubate

Provide manual ventilation and administer flumazenil 4 mg

Administer naloxone 2 mg and oxygen via non-rebreather

Administer oxygen 15 lpm via non-rebreather and transport

Correct answer: Provide manual ventilation and prepare to intubate

The patient is unresponsive with a respiratory rate of 6, which is respiratory failure that requires immediate intervention. You must provide manual ventilation and prepare to intubate the patient. Yes, the patient may have overdosed on diazepam or alcohol, but the most immediate problem is ventilatory failure.

Flumazenil is indicated in patients suffering from benzodiazepine toxicity, but the dose for this patient would be 0.2 mg. not 4 mg.

Naloxone is ineffective in benzodiazepine and alcohol toxicities.

Only providing oxygen via a non-rebreather will not address the ventilatory failure in the patient, as it would only improve oxygenation.

11.

You are on the scene of a mass casualty accident at a pesticide factory. Multiple patients are presenting with confusion, excessive sweating, tearing of the eyes, breathing difficulty, nausea, and vomiting. What should you administer?

Pralidoxime

Sodium bicarbonate

Epinephrine

Diphenhydramine

Correct answer: Pralidoxime

The patients are exhibiting signs and symptoms of organophosphate poisoning. The patients are experiencing widespread cholinergic effects. The treatment of choice is an anticholinergic. Pralidoxime, also known as 2-Pam, is an antidote auto-injector for organophosphate poisoning and nerve agent poisoning. Atropine is also used in the treatment of anticholinergic poisoning.

Sodium bicarbonate is not indicated for these patients. It is the antidote for TCA overdose.

Epinephrine is not indicated, as it is useful in anaphylaxis, status asthmaticus, and cardiac arrest.

Diphenhydramine is an antihistamine used in the treatment of allergic reactions, anaphylaxis, and dystonic reactions.

12.

You are reviewing the ECG of a severely hypothermic patient and note an extra deflection at the junction of the QRS and ST segment. What is the term for this finding?

J wave

F wave

J point

Delta wave

Correct answer: J wave

In severely hypothermic patients, at a core temperature of 77°, a J wave (Osborne wave) is clearly seen. It is described as an extra deflection at the junction of the QRS and ST segments. The origin is unknown.

F waves are fibrillation waves that are seen in atrial fibrillation.

The J point is the first upward deflection from the S to ST segment to identify ST elevation in STEMIs.

The Delta wave is seen in WPW.

9. Maternal/Fetal Medicine

13.

You are transporting a pregnant 19-year-old female from a two-vehicle MVC. The patient has full spinal precautions taken. The patient is complaining of neck pain and right leg pain. Vital signs are BP 148/90, P 101, R 16. Approximately 10 minutes from the hospital, the patient becomes confused, and her pulse rate increases. Her blood pressure is now 101/64.

You should do which of the following?

Tilt the spineboard to the left

Administer a 500 mL fluid bolus

Elevate the foot of the stretcher

Administer 15 lpm oxygen via NRB

Correct answer: Tilt the spineboard to the left

The patient is exhibiting symptoms of supine hypotensive syndrome. By lying supine, there is pressure on the inferior vena cava reducing venous return from the lower extremities causing hypotension. The recommendation is to tilt the spineboard to the left to reduce the pressure.

Administering a fluid bolus and oxygen may be required in this patient after tilting the spineboard to the left, but it is not the first step.

It is not recommended to elevate the legs, as research shows this does not improve the blood pressure in pregnant and non-pregnant patients.

10. Pediatric Patient

14.

You are transporting a 39-week-old pregnant female in pre-term labor. During transport, the patient delivers a baby girl with low birth weight. The neonate continues to have pallor, weak pulses below 60 beats/min and decreased capillary refill after PPV and chest compressions. You cannot obtain peripheral vascular access and prepare to perform umbilical vein catheterization to administer epinephrine. When advancing the catheter into the vein, you observe good blood return.

You should continue to advance the catheter how far?

1-2 cm; for a total of 4-5 cm

1-2 cm; for a total of 5-10 cm

4-6 cm; for a total of 6-8 cm

3-5 cm; for a total of 4-5 cm

Correct answer: 1-2 cm; for a total of 4-5 cm

According to current Neonatal Resuscitation Provider (NRP) guidelines, if the provider is unable to obtain peripheral vascular access, it is recommended to initiate Umbilical Vein Catheterization (UVC) or intraosseous catheterization. To perform UVC, tie a loop of umbilical tape at the base of the skin and cord. Use a scalpel and cut the cord 1 cm away from the skin. You will visualize 2 arteries and 1 vein, with the vein being the largest of the 3 vessels. You will then advance a preflushed catheter into the vein and advance until blood return. Continue to advance 1-2 cm after the blood return for a total of 4-5 cm.

11. Special Populations

15.

All the following are endocrinologic changes during pregnancy, except which one?

- **Hypoglycemia**
- Hyperglycemia
- Increased thyroid stimulation
- Heavier pituitary gland

Correct answer: Hypoglycemia

The increase of progesterone and estrogen during pregnancy affects the entire body. Within the endocrine system, the most intense effect is hyperglycemia. Hyperglycemia is caused by the anti-insulin effects from lipid breakdown.

Hypoglycemia is not caused by pregnancy.

Other endocrinologic changes that occur during pregnancy are thyroid enlargement, an increase in pituitary gland weight, and an increase in production of progesterone and estrogen.