M_PTQ_CCRNAdult (900+ Questions) - Quiz Questions with Answers

1.

Therapeutic hypothermia is ordered for a patient who was resuscitated from a cardiac arrest associated with ventricular tachycardia. What is the optimal temperature range that should be maintained for therapeutic hypothermia?

26 -30 °C (78.8-86 °F)

30-34 °C (86-93.2 °F)

32-36 °C (89.6-96.8 °F)

34-37 °C (93.2-98.6 °F)

Explanation:

The optimal temperature range for therapeutic hypothermia is 32-36 °C (89.6-96.8 °F) according to the American Heart Association. Patients may be placed between two cooling blankets, or ice packs may be used to lower temperature. If using ice packs, they should be applied to the femoral area, axillae, and sides of the neck as well as the sides (but not the top) of the chest. Patients must be carefully monitored for oxygen saturation and dysrhythmias. The MAP should be maintained at greater than 80 mmHg for neuroprotection. The head of bed should be elevated to 30°.

2.

A 36-year-old patient with Guillain-Barré syndrome is hospitalized with ascending paralysis and acute respiratory distress. The patient is stabilized and placed on mechanical ventilation. Which treatment is most indicated to reduce symptoms?

IV Ig or plasmapheresis

corticosteroids

antiviral medications

immunoadsorption

Explanation:

The two treatments used for GBS are IV Ig or plasmapheresis (plasma exchange). IV Ig may reduce recovery time by 50% by neutralizing myelin antibodies and promoting remyelination although it poses a risk of thromboembolic events, so low doses of heparin may be given. Plasmapheresis may also be used to remove autoantibodies, cytotoxic constituents and immune complexes from serum. There is no advantage to providing both IV Ig and plasmapheresis. Corticosteroids do not improve GBS. Immunoadsorption is still in the trial stage but shows promise.

3.

When asking a patient to sign a consent form for a procedure, the most important factor is the

explanation of the procedure.

patient's ability to give informed consent.

reasons for the procedure.

explanation of possible complications.

Explanation:

The most important factor in having a patient sign a consent form is the patient's ability to give informed consent. This means that the patient must have the legal right by age or emancipation and must be able to comprehend. If a patient is cognitively impaired because of dementia, sedation, or condition, this can pose a problem because patients cannot legally give consent if they are unable to understand. If patients don't speak English, a translator should be provided.

4.

Which of the following modes of ventilation provides a specified volume of air and rate with no triggering required of the patient and respiratory response decreased through medication (such as pancuronium bromide or morphine)?

synchronized intermittent mandatory ventilation (SIMV)

assist control ventilation (ACV)

pressure support ventilation (PSV)

controlled mandatory ventilation (CMV)

Explanation:

Controlled mandatory ventilation (CMV): This mode provides a specified volume of air and rate with no triggering required of the patient and respiratory response decreased through medication. Synchronized intermittent mandatory ventilation (SIMV): This mode provides a specified tidal volume that is synchronized with the patient's breathing. Assist control ventilation (ACV): This mode is triggered by the patient's own breathing, but if apneic periods occur, the machine will initiate respirations at a specified tidal volume. Pressure support ventilation (PSV): This mode requires the patient to initiate all breaths, which are supplemented by positive pressure.

5.

A patient who was in a car accident 48 hours ago presents with bilateral periorbital ecchymosis. The patient complains of a salty taste in their mouth. The most likely cause of these symptoms is

eye trauma.

diastatic skull fracture.

Le Fort skull fracture.

basal skull fracture.

Explanation:

While bilateral periorbital ecchymosis (Raccoon's eyes) may indicate eye trauma (as well as multiple myeloma and disseminated neuroblastoma), it is likely that the patient has a basilar skull fracture because of the previous car accident. Raccoon's eyes may not be evident for two to three days after an injury, but the "salty" taste in the patient's mouth suggests leakage of cerebrospinal fluid. In some cases, Battle's sign—ecchymosis in the mastoid area behind the ear—may be present as well.

6.

A patient has been diagnosed with metastatic ovarian cancer with a short life expectancy, but she tells the nurse that she believes that she can cure herself with positive thinking. Which of the following is the best response?

"I've heard that positive thinking has cured some people of cancer."

"The mind can be powerful."

"There's no evidence to support positive thinking as a cure."

"Whatever makes you feel better is ok."

Explanation:

While it's very unlikely that a miracle cure will occur as a result of positive thinking, patients often need to hold onto hope to cope with dying, and thinking positively may help them to find some peace, so the nurse should be supportive without making false claims, dismissing the idea, or trying to dissuade the person with reason. Additionally, positive thinking may increase the release of endorphins, which may help to alleviate some discomfort.

7.

Considering ventilator management, in order to avoid toxicity, the fraction of inspired oxygen (FiO_2) should usually be maintained at less than

21%.

40%.

60%.

80%.

Explanation:

For ventilator management, the fraction of inspired oxygen (FiO_2) should be maintained below 40% (0.4) to avoid oxygen toxicity although the patient may initially need a higher concentration of oxygen. Normal room air provides 21% (0.2). The flow rate will vary depending on the type of oxygen delivery system used. For example, with a nasal cannula at flow rate of 5 L/min, FiO_2 is 40%. With a Venturi mask and flow rate of 8 L/min, FiO_2 is 35 to 40%.

8.

An 18-year-old man who identifies as gay is hospitalized under his parents' insurance. The patient insists that his male partner visit him, but his parents have left a note at the nursing desk advising the staff that the partner is not allowed to visit. What is the best action for the nurse?

advise the partner that he cannot visit the patient

advise the patient that his partner is not allowed to visit

call the parents and advise them that they cannot prevent visits

ignore the parents because they have no standing

Explanation:

The best and only legal action is to ignore the parents, as they have no standing. Rights go with the individual patient, not the one for paying for insurance. Because the patient is 18 years old and legally an adult, he has the right to decide who visits or not, and the parents should have been advised of this. The nurse cannot legally contact the parents about the patient without his permission. He should be advised of the parents' action so that he can deal with the issue.

9.

A patient who sustained a head injury is to have a lumbar puncture to determine if there is CNS bleeding. Which of the following is the most important prior to the lumbar puncture?

CT of the brain

EEG

hemoglobin and hematocrit

coagulation studies

Explanation:

Because the patient sustained a head injury and is at risk for increased intracranial pressure, the patient should have a CT of the brain prior to the procedure so it can be reviewed for signs of a brain shift that may indicate ICP. With increased ICP, when pressure is suddenly relieved by withdrawing of cerebral spinal fluid, the brain structures may herniate through the foramen magnum, compressing the brainstem, which is critical for regulation of cardiac and respiratory function.

10.

In order to avoid protein depletion in trauma patients, how much protein should be provided to the patient each day?

1.0 to 1.5 g/kg

1.5 to 2.0 g/kg

2.0 to 2.5 g/kg

2.5 to 3.0 g/kg

Explanation:

Trauma patients should be provided 1 to 1.5 g/kg/day of protein. Higher amounts show no benefit. Trauma results in increased breakdown of protein because of catabolism in addition to protein losses that may have occurred with blood loss. Patients may lose as much as 10% of lean body mass within 10 days. When 25% or more of lean body mass is lost, protein malnutrition is severe and can result in increased mortality. Protein is more critical than total calories and the increased catabolic rate resists protein supplementation although synthesis of protein increases with infusions of amino acids.

11.

Following a subarachnoid hemorrhage, a patient complains of increasing headache and slight nausea and a CTA shows hydrocephalus. The patient remains awake and responsive. The most likely initial treatment is

lumbar puncture for drainage.

serial lumbar punctures for drainage.

observation.

ventriculostomy or ventriculoperitoneal shunt.

Explanation:

About 25% of those with subarachnoid hemorrhage develop hydrocephalus as a late complication because blood that has been absorbed by arachnoid villi may result in villi obstruction and decreased absorption of cerebrospinal fluid. In about half of these cases, the condition is self-limiting and resolves without intervention, so if patients remain awake and responsive and do not have severe symptoms, observation for 24 hours is the usual initial intervention. If the patient's condition worsens, then in some cases serial lumbar punctures are done to drain fluid, but the most common treatment is ventriculostomy or ventriculoperitoneal shunt.

12.

After an extended stay in the critical care unit, a patient is to be transferred to a general medical-surgical unit. The patient has developed a trusting relationship with her nurse and is upset about the transfer. The patient begs the nurse to intervene so she can stay in the critical care unit. The best solution for the nurse is to

tell the patient that the nurses on the other unit will take good care of her.

tell the patient the nurse will accompany her to the other unit and introduce her.

ask the physician if the patient can stay longer in the critical care unit.

tell the patient that the nurse will stop by every day to visit her.

Explanation:

Patients often establish close relationships with nurses caring for them and begin to develop dependency, so the best solution is for the nurse to make the transfer as easy as possible is by accompanying the patient to her new room and introducing her to staff, ensuring that the patient is settled into her new unit without difficulty. The nurse should not make unrealistic promises (such as daily visits) that she may not be able to keep.

13.

A patient with a history of previous myocardial infarction presents with dyspnea and audible basilar rales as well as 2+ peripheral edema. The patient's respiratory rate is 34/min and heart rate is 104/min with lateral displacement of the apical beat. Blood pressure is 162/94 mmHg. Despite administration of 100% oxygen, the patient's oxygen saturation level is 92% and the patient reports that he feels very short of breath and insists on sitting in tripod position. Which intervention is most indicated to relieve the patient's dyspnea?

morphine sulfate

furosemide IV

CPAP or BiPAP

endotracheal intubation with mechanical ventilation

Explanation:

This patient is exhibiting typical indications of acute heart failure with dyspnea, orthopnea, basilar rales, lateral displacement of the apical beat (from enlarged left ventricle), peripheral edema, tachycardia, elevated blood pressure, and hypoxia. CPAP or BiPAP should be administered since this may increase oxygenation and reduce the need for endotracheal intubation with mechanical ventilation. Nitrates may also be administered to decrease pre-load. While a loop diuretic, such as

furosemide, may be indicated, diuretics are no longer considered first-line treatments as they may result in hypotension.

14.

A patient who has been prescribed oral phenytoin (Dilantin) for seizure control should be advised to

limit alcohol intake to two to three drinks daily.

have weekly blood tests.

maintain superior dental care.

stop the drug immediately if adverse effects occur.

Explanation:

Phenytoin may cause gingival hyperplasia, so patients should be advised to carefully maintain dental care and to see dentists regularly. Patients may have monthly blood tests initially but once stabilized blood tests are usually done every six months. Patients should be advised to avoid alcohol entirely when taking any anticonvulsant drug. Stopping anticonvulsant drugs abruptly may trigger rebound seizures, so if adverse effects occur, the patient should be advised to immediately contact the physician for guidance in withdrawing the drug if necessary.

15.

Following a craniotomy, the patient is carefully monitored for increasing intracranial pressure. Intracranial hypertension occurs when intracranial pressure (ICP) is greater than

12 mmHg.

15 mmHg.

20 mmHg.

25 mmHg.

Explanation:

Intracranial hypertension occurs with intracranial pressure greater than 20 mmHg. Normal intracranial pressure ranges from 7 to 15 mmHg. Because of the constraints of the skull, the volume in the brain is fixed and has 3 components: blood, tissue, and cerebrospinal fluid. According to the Kelli-Moore hypothesis, an increase in one component requires a compensating decrease in another component. The brain may accommodate some increase in volume with little increase in ICP, but when the brain's volume limit is reached, even a small increase in volume may result in a significant increase in ICP.

16.

A patient receiving continuous renal replacement therapy (CCRT) exhibits increased heart rate, decreased blood pressure, and ECG abnormalities. The nurse should suspect

electrolyte imbalance.

bleeding.

too much or too little dialysate.

problem unrelated to CCRT.

Explanation:

When patients receiving CCRT exhibit increased heart rate, decreased blood pressure and ECG abnormalities, the nurse should suspect electrolyte imbalance. Electrolyte levels must be carefully monitored and output values checked at least every hour. Hypotension may also decrease the ultrafiltration rate as blood flow through lines decreases. Fluid volume must also be monitored since

too much or too little fluid may result in changes in mentation and increased or decreased CVP or PAOP.

17.

The nurse is assessing a patient with suspected ischemic stroke using the NIH stroke scale. The patient speaks only Spanish but no interpreter is available. Only the word list and reading for the assessment are available in Spanish. However, the patient's 13-year-old granddaughter is present and is bilingual. The nurse should

delay the assessment until an interpreter is available.

ask the granddaughter to translate.

omit the sections of the assessment that require verbal directions or responses.

complete the assessment in English using pictures, motions, and pantomime to aid in the patient's comprehension.

Explanation:

While in most cases it is inappropriate to use family members—especially children—to interpret, the granddaughter can be asked to assist because the directions for the test are relatively simple ("How old are you? What is the date today?"). In all cases, the nurse may use some type of pantomime to assist the patient, such as demonstrating how to show the teeth when scoring facial palsy. The patient's first response should be recorded. The granddaughter should be asked not to coach the patient in any way or give hints.

18.

A patient who has experienced an ischemic stroke arrives at the emergency department in the 3 to 4.5-hour window of time after the stroke. Which of the following would exclude the patient from treatment with recombinant tPA?

age of 81 years

score of 24 on the NIH stroke scale

history of diabetes

history of major surgery 3 months previously

Explanation:

The usual contraindications to recombinant tPA apply to people who have had strokes and appear for treatment within the 3-hour window after the stroke, but additional exclusions apply to those who appear in the 3- to 4.5-hour window. This patient is excluded from treatment because he is over 80 years old. Other exclusions include a history of both stroke and diabetes, score on the NIH stroke scale of more than 25, and any current use of oral anticoagulants.

19.

Which of the following conditions is most commonly associated with acute renal failure?

respiratory acidosis

respiratory alkalosis

metabolic alkalosis

metabolic acidosis

Explanation:

Metabolic acidosis is associated with acute renal failure because the impaired kidneys are unable to excrete increased levels of acids due to decreased excretion of phosphates and other organic acids and because the tubules are unable to excrete ammonia or reabsorb sodium bicarbonate. Characteristics of metabolic acidosis include low (acidic) pH level and decreased bicarbonate. Symptoms may vary, but with chronic renal failure, the patient may remain asymptomatic until the bicarbonate level falls to 15 mEq/L or less.

20.

A patient involved in a traumatic motorcycle accident has fractured ribs 9 and 10 on the left side. Injury to which of the following underlying structures is of most concern?

pancreas

spleen

diaphragm

intestines

Explanation:

With fractures of ribs 8 and above on the right side, the primary concern is injury to the spleen. Fractured ribs are usually the results of severe blunt trauma, so underlying injuries are common. With fractures of ribs 8 and above on the left side, the primary concern is injury to the liver. Fractures of the upper two ribs (either one side or both) pose a risk of injury to the trachea, bronchi, and great vessels. If three or more adjacent ribs are fractured both anteriorly and posteriorly, a flail chest results.

21.

When planning patient education, the nurse realizes that most adults experience low energy in the

early morning.

late morning.

afternoon.

evening.

Explanation:

Studies show that most adults experience a period of low energy in the afternoon (the reason for afternoon naps). About 55% of adults are most alert and work and study best in the early morning while about 28% do best in the evening, so group education is probably best planned for morning while individual education should be more flexible according to the patient's preference whenever possible. Most people are aware whether they are "morning" or "evening" people.

22.

Which of the following defense mechanisms is a patient utilizing if the patient yells at his spouse after receiving bad news from the physician about his condition?

projection

reaction formation

sublimation

displacement

Explanation:

Displacement: The patient directs anger at other individuals (the wife in this case) rather than directing it at the person (physician), who is the actual source of bad news (threat). Projection: The patient believes that others are exhibiting the patient's own unacceptable characteristics (seeing in others what the person cannot recognize in himself/herself). Reaction formation: The patient

behaves or expresses the opposite of how the patient actually feels. Sublimation: The patient converts repressed feelings into actions that are socially acceptable.

23.

A patient who is legally blind is to use a BiPAP machine when he is discharged. The best method to ensure the patient uses the equipment properly is to

provide instructions in brail or audiotapes.

allow the patient to handle and manipulate the equipment.

teach a family member how to assist the patient.

plan extended training sessions with much repetition.

Explanation:

Patients who are legally blind often have developed the ability to compensate for lack of vision with increased acuity in other senses, including the sense of touch, smell, hearing, and taste. Patients who are blind should be encouraged to handle and manipulate equipment while the nurse explains, using as much verbal description as possible. Patients may have developed improved memory skills that allow them to learn quickly from spoken words. Family members may want to learn about the equipment as well, but the focus should be on teaching the patient to use it independently.

24.

A patient who suffered penetrating chest trauma is recovering from surgical repair but complains of increasing chest pain and dyspnea and appears cyanotic. Pulse is 110 bpm, BP is 80/48 mmHg, and pulsus paradoxus is evident. When auscultating the heart, the nurse notes a mill wheel murmur and shifting tympany when percussing the heart with the patient supine and then sitting upright. Hamman's sign is negative. The most likely cause is

pneumomediastinum.

pneumopericardium.

cardiac tamponade.

pneumothorax.

Explanation:

While many of these symptoms can be found with all of these conditions, two are specific to pneumopericardium: the mill wheel murmur and the shifting tympany. Hamman's sign—a popping or crunching sound heard over the mediastinum—may or may not be present but is more commonly associated with pneumomediastinum. Pneumopericardium can be confirmed CT. Treatment includes needle aspiration and insertion of drainage tube or thoracotomy as well as oxygen therapy. Asymptomatic pneumopericardium may be treated conservatively.

25.

A 20-year-old patient has a severe exacerbation of asthma with pronounced wheezing and dyspnea. The patient is only able to give one- to two-word responses and is using accessory muscles to breathe. The nurse should expect which of the following to be the first-line treatment?

short-acting B_2-Agonist (albuterol) and corticosteroid

theophylline and non-specific B-adrenergic agent (epinephrine)

anticholinergic (ipratropium) and heliox

short-acting B_2-agonist and intravenous magnesium

Explanation:

The first-line treatment for acute exacerbations of asthma is short-acting B_2-agonsit, such as nebulized albuterol and a corticosteroid, such as oral prednisone or IV methylprednisolone. While corticosteroids will not have immediate effect, it is important to administer the drug early to maintain control. Nonspecific B-adrenergic agents, such as epinephrine, are usually reserved for treatment before intubation for patients unresponsive to other treatments. Anticholinergic medications, such as ipratropium bromide, may be added to albuterol. Theophylline has many side effects so is often avoided. IV magnesium and heliox are usually given only if patients do not respond to other treatments.

26.

The nurse is aware that a patient is extremely nervous about having an MRI and takes a CD by the patient's favorite singer to the imaging lab so that the patient can listen to the music during the procedure. This is an example of

response to diversity.

collaboration.

patient advocacy.

caring practices.

Explanation:

The nurse provided the CD for the patient to help relieve the patient's anxiety and to show caring. This is an example of caring practice in which the nurse carries out acts of kindness and provides a supportive caring relationship for the patient. Caring practices require the nurse to take a creative approach to care and to look at the needs of the whole person. The nurse makes a choice to take action for the benefit of the patient, often beyond that which is required.

27.

A patient asks the nurse many questions about her medical treatment; but, when the physician is present, the patient becomes very quiet and asks no questions despite the nurse's encouragement to do so. The best solution for the nurse is to

prompt the patient when the doctor is present.

ask the patient why she doesn't ask the doctor questions.

prepare a list of the patient's questions for the physician.

tell the physician that the patient has many questions.

Explanation:

Many patients are afraid of their doctors or don't want to bother them, so prompting the patient or telling the physician that the patient has questions may still not elicit them. The best method is to prepare a list of the patient's questions for the physician and to explain the patient's reluctance to ask the physician the questions directly. The patient may not be able or willing to articulate the reasons for not asking questions directly.

28.

A nurse mentors peers new to the profession. Which of the Standards for Acute and Critical Care Nurses under the Standards of Professional Performance does this support?

quality of care

education

collaboration

collegiality

Explanation:

Collegiality: interacting with others and contributing to professional development of peers and other healthcare providers. Quality of care: evaluating the quality of care in a systematic manner. Education: acquiring and maintaining both current knowledge and competencies necessary to provide care to the critically ill. Collaboration: working together with patients, families, and health care providers to provide excellence in patient care. Ethics: making decisions and acting in an ethical manner. Individual practice evaluation: reflecting knowledge of professional and legal standards, laws, and regulations. Research: using clinical inquiry. Resource utilization: considering safety, effectiveness, and cost.

29.

A patient who is critically ill has been "talking" with her husband, who has actually been dead for many years, and describing a beautiful place. The nurse recognizes these as signs of

delirium.

dementia.

impending death.

opioid toxicity.

Explanation:

Talking to people who aren't there and who have died is often a sign of impending death. Patients nearing death may also say they must prepare for a trip and may describe a place they appear to be able to see. Some patients express awareness that they are dying. The role of the nurse is to remain supportive to the patient and the family and provide as much comfort care as possible. When treatments are no longer necessary or effective because the patient is dying, the nurse should request discontinuation of the treatments.

30.

A nurse on the unit states she has no interest in the politics of work and just wants to work with the patients and not worry about other departments and institutional problems. This represents

dedication to the nursing profession.

incompetent practice of nursing.

old-fashioned attitude toward the nursing profession.

barrier to systems thinking.

Explanation:

There are three barriers to systems thinking here. Identifying with professional role instead of purpose: looking only at one's own role and needs and not considering the roles of others and the institution as a whole. Feeling victimized: blaming others (institution, administration, other healthcare professional) for own shortcomings and believing nothing can be done to improve situations. This feeling may become institutionalized, making changes difficult. Relying on past experience: persisting in trying to apply old solutions to new problems.

31.

A staff nurse repeatedly makes mistakes with electronic charting, insisting that the system is too difficult and inefficient, that the institution made a big mistake in forcing staff to use the computer system, and that most staff agree with this assessment. This is an example of

having an autocratic view.

arriving at weak consensus.

displaying displaced anger.

failing to adapt.

Explanation:

There are four barriers to systems thinking here. Failing to adapt: feeling very threatened by changes, such as the switch to electronic charting. Some may feel they cannot learn new procedures and may react angrily or withdraw. Having an autocratic attitude: believing that only their perceptions or practices are the correct one and focusing on narrow views and short-term outcomes. Arriving at weak consensus: superficially solving problems without really delving into all issues. Displaying displaced anger: directing anger at someone or something other than the cause of the problem.

32.

Which of the following is the most common cause of hypoxemia?

alveolar hypoventilation.

physiologic shunting.

ventilation/perfusion (V/Q) mismatch.

intrapulmonary shunting.

Explanation:

V/Q mismatch, which occurs when well-ventilated alveoli lack adequate perfusion while poorly-ventilated alveoli have adequate perfusion, is the most common cause of hypoxemia. This is true because many common respiratory disorders can result in V/Q mismatch, including asthma, COPD, pulmonary embolus, pneumonia, and pulmonary hypertension. With V/Q mismatch, administration of 100% oxygen should increase oxygen saturation because oxygen improves uptake of oxygen in areas with poor ventilation. Dead space occurs when there is ventilation but no perfusion (such as in the trachea), and a shunt occurs where there is perfusion but no ventilation.

33.

A patient is admitted with partial obstruction of the airway after aspiration of a metal screw 24 hours earlier. The patient is able to speak with difficulty but is dyspneic and having severe bouts of coughing

and complains of chest pain. Which treatment option should the nurse anticipate?

bronchodilator and postural drainage

flexible bronchoscopy

rigid bronchoscopy

bronchotomy

Explanation:

Rigid bronchoscopy is the treatment option of choice for removal of foreign bodies from the respiratory tract because the larger diameter makes retrieval less difficult. In some cases, flexible bronchoscopy may be used first to isolate the location of the foreign body, but the diameter is generally too small to withdraw foreign objects and attempting to grasp the object at the end of the scope and remove it in that manner may result in significant tissue damage. Bronchotomy is indicated if removal per bronchoscopy is unsuccessful. Bronchodilators and postural drainage is useful in only a small number of asymptomatic cases.

34.

A patient with progressive pulmonary arterial hypertension must be monitored for signs of

left ventricular heart failure.

right ventricular heart failure.

ventricular fibrillation.

cardiomyopathy.

Explanation:

A patient with progressive pulmonary arterial hypertension must be monitored for signs of right ventricular heart failure, a common complication. With PAH, the pulmonary vascular bed becomes obstructed or damaged so that it cannot dilate adequately for increased blood flow, so this blood then increases pulmonary artery pressure, which in turn increases pulmonary vascular resistance. This requires increased workload for the right ventricle, leading to hypertrophy and failure. The patient may begin to have peripheral edema, ascites, liver engorgement, crackles, distended jugular veins, and heart murmur.

35.

A 68-year-old man with a history of alcoholism has developed sudden onset of severe epigastric pain radiating to the back after eating. The pain is exacerbated when the patient lies flat or walks. He is pale and tachycardic and has nausea and vomiting and a temperature of 39 °C. Physical examination shows the upper abdomen is tender but not rigid and without guarding. The most likely cause of these symptoms is

hepatitis.

acute cholecystitis.

small bowel obstruction.

pancreatitis.

Explanation:

This pattern of pain—severe epigastric pain radiating to the back—that is exacerbated by lying flat or walking is consistent with pancreatitis. Generally, the upper abdomen is tender but without rigidity or guarding, which may be present with other disorders. Abdominal distention and jaundice may occur in some patients. Fever to 39 °C is common as is tachycardia and pallor. Serum amylase and serum lipase may be elevated up to 3 times normal values within 24 hours, and leukocytosis (10,000 to 30,000) may be evident.

36.

What is the minimum time period that heliox should be administered to gain full effects?

20 minutes

40 minutes

60 minutes

90 minutes

Explanation:

Heliox should be administered for at least 20 minutes in order for the patient to gain the full effects. Heliox is usually administered in mixtures of 80% He/20% O_2 or 70% He/30% O_2. The 70/30 mixture is indicated for patients with hypoxemia, so this mixture is more commonly used. Heliox is used to reduce airway resistance in order to increase oxygenation. Recent studies indicate that evidence is insufficient to recommend use of heliox for acute asthma or COPD exacerbations, although it is frequently ordered.

37.

Some hospital units are overstaffed, according to patient census, while others are understaffed, requiring nurses to work overtime and resulting in increased costs. While most understaffed units are requesting additional full-time nurses, one-unit leader suggests that the hospital switch to acuity-based staffing and increase the number of float nurses from current staff and train them in more than one discipline in order to cut overall costs and meet the needs of multiple units. This suggestion is an example of

divergent thinking.

parallel thinking.

systems thinking.

convergent thinking.

Explanation:

The nurse who suggested the switch to acuity-based staffing is exercising systems thinking by looking at the organization as a whole and determining what best serves the organization and the patients rather than looking at only the needs of the unit. Systems thinking requires an understanding of interrelationships and structures as well as the ability to anticipate outcomes and understand how different actions affect outcomes. The nurse has applied a practical solution to a systems problem.

38.

When considering the validity of written material, the most important thing to consider is the

source.

author.

date.

statistical evidence.

Explanation:

While all of these are important considerations when evaluating the validity of written material, the source of the material is the primary concern followed by the author's credentials. Articles printed in the popular press must meet different standards than articles printed in juried journals (such as The New England Journal of Medicine). The Internet has few rules, so much that is found on websites may look authentic but have no validity whatsoever. Wikipedia, while often helpful, cannot ever be used for evidence.

39.

Adhesive atelectasis, caused by surfactant deficiency, is most often associated with

necrotizing pneumonia.

space-occupying lesions.

asbestos exposure.

acute respiratory distress syndrome (ARDS).

Explanation:

Adhesive atelectasis, caused by surfactant deficiency is most often associated with acute respiratory distress syndrome because surfactant production, which is critical to maintaining alveolar surface tension, is reduced, so alveoli collapse. With ARDS, alveolar collapse occurs widely throughout both lungs rather than in isolated areas, such as may occur with other causes of atelectasis. PEEP must be adequate to prevent further alveolar collapse in order to improve oxygenation.

40.

A patient who underwent a thoracic laminectomy developed increasing dyspnea and hypoxemia with cough, hemoptysis, substernal pain, and subcutaneous emphysema of neck and chest within 4 hours of extubation. The most likely cause is

tracheal perforation.

surgical trauma to chest.

esophageal perforation.

pneumothorax.

Explanation:

Increasing dyspnea and hypoxemia with cough, hemoptysis, substernal pain, and subcutaneous emphysema of neck and chest are consistent with perforation of the trachea, which is a complication of endotracheal intubation. Perforation, especially in the posterior trachea, can occur during intubation or extubation. With this surgery, repositioning after surgery could also increase risks. Slight perforations may heal spontaneously with artificial airway that seals the perforation, but many, especially those who have cardiovascular instability, cannot adequately ventilate the lungs, or have tears greater than 4 cm, will require thoracotomy to repair.

41.

A patient has undergone bilateral lung volume reduction per video-assisted thoracoscopic surgery (VATS) for severe emphysema. What postoperative complication is most common?

pneumonia

air leaks

aspiration of gastric contents

respiratory failure

Explanation:

Air leaks are a very common complication following bilateral lung volume reduction regardless of the surgical approach (VATS or median sternotomy). Patients return from surgery with two chest tubes in each hemithorax, and these are usually placed immediately in water seal drainage. Other complications include pneumonia, cardiac dysrhythmias, and infection. A small number of patients may go into respiratory failure and require reintubation. Adequate pain control is important to allow the patient to clear secretions and to encourage movement.

42.

A patient has suffered blunt chest trauma in an accident with bilateral lung contusions. During what time period should the nurse anticipate possible onset of symptoms of acute respiratory distress syndrome?

1 to 2 hours

4 to 12 hours

12 to 24 hours

24 to 48 hours

Explanation:

While onset of symptoms varies depending on many factors, including the severity of injury, usual signs and symptoms of acute respiratory distress syndrome (the most common complication of lung contusion) usually occur within 24 to 48 hours when hypoxemia becomes more obvious. Contusion results in pulmonary edema because of torn capillaries and micro-hemorrhage. Alveoli collapse and atelectasis are common. Inflammation occurs, increasing risk of respiratory failure. Ventilation/perfusion mismatch decreases oxygen saturation. Damage from chest contusion may not be visible on chest radiograph for a number of hours. CT scans or ultrasounds are more accurate.

43.

A 68-year-old patient with severe asthma is lethargic and somnolent and arouses with difficulty. His PaO_2 has fallen to 58 mmHg on low-flow oxygen and $PaCO_2$ has increased to 56 mmHg while the pH is 7.28. Which of the following is the most likely cause of these symptoms?

acute respiratory failure

pulmonary embolism

sepsis

pneumonia

Explanation:

These symptoms (decreased PaO_2 less than 60 mmHg, increased $PaCO_2$ greater than 45 mmHg, and decreased pH) are consistent with acute respiratory failure, type II, which is usually the result of alveolar hypoventilation and hypoxemia. With chronic respiratory failure, which usually develops over a period of days, the pH is closer to normal because of compensation. Patients with hypoventilation should be positioned in semi-erect position. Treatment includes oxygen, ventilation, bronchodilators, steroids, sedatives, and analgesics, nutritional support, correction of acidosis, and monitoring for complications.

44.

A 20-year-old man who had been practicing football in extreme heat is admitted with heat stroke. Which of the following symptoms is typically found with exertional heat stroke as opposed to non-exertional?

anhidrosis

temperature above 41 °C (106 °F)

high risk for rhabdomyolysis

low risk for renal failure

Explanation:

Patients with exertional heat stroke (EHS) are at high risk for rhabdomyolysis, DIC, and renal failure, while these are rare with non-exertional heat stroke (NEHS). Because patients with EHS can still sweat and exhibit diaphoresis, temperatures tend to be well below the highs (over 41 °C or 106 °F) seen with NEHS, which is associated with anhidrosis. CNS system manifestations may be similar at

times. Those with EHS often suffer syncope and loss of consciousness while those with NEHS may exhibit very mild irritability to deep coma.

45.

An 18-year–old woman comes to the hospital 18 hours after she took "a bottle" of extra-strength acetaminophen. She feels slight nausea but has no other symptoms. At what beginning serum acetaminophen level should N-acetylcysteine (NAC) be administered?

10 mcg/mL

50 mcg/mL

160 mcg/mL

200 mcg/mL

Explanation:

The 72-hour protocol for N-acetylcysteine (NAC) is provided with serum levels greater than 150 mcg/mL. Patients often show no symptoms or only slight gastrointestinal upset for the first 24 hours after ingestion of acetaminophen, but evidence of hepatic damage usually is evident by the second day. Toxic dosages are greater than 140 mg/kg in one dose or greater than 7.5 g in 24 hours. Serum levels should always be done because patients often overestimate or underestimate the number of drugs taken.

46.

A patient who is 24 hours postoperative after a pulmonary lobectomy requests pain medication for severe pain, but when the nurse brings the opioid medication a few minutes later, the nurse finds the patient laughing and talking with family. The nurse should

give the patient the opioid medication.

ask the patient if she still needs the pain medication.

withhold the pain medication altogether.

exchange the opioid for acetaminophen.

Explanation:

One of the barriers to adequate pain management is nurses' preconceptions about physiological and emotional responses to pain and what a patient in pain should look like. Some patients moan and cry while others show little outward sign of pain, but pain is what the patient says it is, and if a patient requests pain medication for severe pain, then the nurse should give the opioid. A patient may try to not to show pain to family members or friends even when the patient is very uncomfortable.

47.

A patient with a history of severe allergic reaction to bananas and kiwis is at risk for allergy to

plastics.

penicillins.

vitamin supplements.

latex.

Explanation:

Patients who are allergic to bananas, kiwis, avocados, and chestnuts are at increased risk of allergy to latex because of cross reactivity and should be maintained in a latex-free environment. Reactions may occur with 5 types of exposure: inhalational, contact, mucous membrane, internal (surgical, invasive procedures), intravascular (IV). Other patients at higher risk include those with multiple

surgeries, those with neural tube defects, those with congenital urogenital disorders, and those who work in the rubber industry, and those with allergies to anesthetics.

48.

With intrarenal causes of acute renal failure, the expected level of urine sodium is

less than 20 mEq/L.

greater than 20 mEq/L

greater than 30 mEq/L.

greater than 40 mEq/L.

Explanation:

Sodium levels vary according to the underlying cause of acute renal failure. Prerenal causes: Urine sodium is decreased to below 20 mEq/L with urine osmolality increased to 500 mOsm. Urine specific gravity is increased. Intrarenal causes: Urine sodium is increased to more than 40 mEq/L, while urine osmolality is usually about 350 mOsm. Urine specific gravity is low normal. Postrenal causes: Urine sodium varies but is usually decreased to 20 mEq/L or less. Urine osmolality also varies but may be equal to or more than the serum level. Urine specific gravity also varies.

49.

Which of the following is the most important factor in delegation?

determining if the task is appropriate based on the person's skills and available time

providing clear instructions, including expected objectives and timeline

monitoring progress and ensuring that tasks were performed correctly

reviewing the final results when the task is completed and recording outcomes

Explanation:

While all of these are important, assigning a task to someone who does not have the necessary skills or time to complete the task can result in the task not being completed correctly or even danger to the patient, so the first thing the nurse must do is determine if the task is appropriate for the person to whom it is delegated. This must be followed by clear instructions, monitoring progress, reviewing the final results, and recording outcomes as the responsibility for the task remains with the delegating nurse.

50.

A patient who is supposed to be on a low carbohydrate diet has gained weight and reports eating frequent convenience foods that are high in carbohydrates. When questioned, the patient is knowledgeable about the diet, but states that poor vision and arthritis in her hands make food preparation difficult. The most appropriate referral for the patient is

nutritionist.

occupational therapist.

social worker.

home health agency.

Explanation:

The most appropriate referral for the patient is an occupational therapist who can help the patient develop strategies and skills needed to compensate for poor vision and arthritis and provide information about adaptive equipment that the patient can use to prepare food. The occupational therapist can help the patient establish goals for independent food preparation and help the patient

modify tasks. The occupational therapist may also help the patient learn how to better manage her arthritis to minimize symptoms.

51.

The nurse must inform the family of a patient that the patient is dying. Which of the following is an effective strategy?

provide the information quickly

tell the family and then leave and allow them to grieve

ask the family if they have questions

advise the family to ask the physician about the patient's condition

Explanation:

Providing sensitive information to patients or family members should be done slowly rather than quickly so that they have time to digest the information. The nurse should ask if they have questions and should avoid technical jargon and consider psychosocial implications and well as cultural differences. It's important to respond to people's feelings and discuss follow-up. The nurse should exercise patience, understanding that people respond to bad news in very different ways, including both anger and silence.

52.

The nurse is coaching a new graduate nurse in carrying out a procedure, utilizing a mannequin; however, the graduate nurse makes many errors and appears anxious. What is the best strategy for helping the graduate nurse master the procedure?

point out errors as the nurse makes them

provide positive feedback, stressing the nurse's correct actions

suggest the graduate nurse research the procedure and memorize the steps

remind the graduate nurse that her lack of knowledge could endanger patients

Explanation:

The best strategy when coaching another nurse is usually to provide positive feedback, stressing the nurse's correct actions rather than focusing on errors because the latter may increase the graduate nurse's anxiety and result in more errors. The nurse may use questioning to help the graduate nurse recognized problem areas. The nurse should provide a demonstration and encourage the graduate nurse to ask questions. The primary objective should be to help the learner gain both confidence and skills.

53.

A patient who is dependent on peritoneal dialysis is admitted to the critical care unit with cardiac dysrhythmias. Which renal replacement therapy does the nurse anticipate will be used during hospitalization?

intermittent hemodialysis

continuous venovenous hemofiltration

peritoneal dialysis

continuous arteriovenous hemofiltration

Explanation:

Most patients who are maintained of peritoneal dialysis at home should continue to receive PD after admission to a critical care unit unless there are specific contraindications, which include recent

abdominal surgery, significant pulmonary disease, peritonitis, and need for rapid removal of fluid. The most common complications of PD are peritonitis and infection of exit site, so the nurse must carefully monitor laboratory values and patient condition for signs of infection. Patients usually are very knowledgeable about the amount and type of dialysate to be infused and the frequency of infusion.

54.

A patient is to undergo a left renal biopsy. What is the correct position to place the patient in for the procedure?

prone

upright leaning over bedside table

right side-lying

knee-chest position

Explanation:

The patient undergoing a renal biopsy should be placed in prone position because the biopsy is done from the posterior aspect. A small pillow may be placed under the patient's abdomen. The procedure is done under a local anesthetic (1% lidocaine). After removal of the biopsy needle, pressure should be applied. After the site is bandaged, the patient should be placed in supine position for 6 to 8 hours, and the patient should be observed for at least 12 hours to ensure bleeding does not go undetected.

55.

A patient who is undergoing deep sedation while mechanically ventilated is monitored with the bispectral index system (BIS). Which of the following values indicates that the patient is unconscious with low likelihood of recall?

50-60

90-100

40-50

Less than 20

Explanation:

The bispectral index system (BIS) can be used to both monitor the degree of consciousness for those who are receiving deep sedation and response to analgesia. BIS applies an algorithm to EEG activity and displays the result as a number (0 to 100) rather than a tracing. A value of 50 to 60 is usually the goal for deep sedation in which the patient is unconscious with low likelihood of recall. With values over 70, the patient is probably aware, while a score above 95 indicates an awake state. Brain waves are suppressed with values under 20.

56.

Which of the following drugs used for sedation provides the most prolonged sedation?

diazepam

lorazepam

propofol

midazolam

Explanation:

Diazepam: Onset is 2 to 5 minutes, but the half-life ranges from 20 to 120 hours with prolonged sedation. Lorazepam: Onset is 5 to 20 minutes, and half-life is 8 to 15 hours with prolonged sedation. Propofol: Onset is 1 to 2 minutes with a half-life of 2 to 8 minutes when used for short-term sedation. If administered continuously, the sedative effect may last for 26 to 32 hours. Midazolam: Onset of action is rapid (2 to 5 minutes) and half-life ranges from 3 to 11 hours. Sedative effect is prolonged with continuous administration.

57.

A patient who is restless pulls out his chest tube when trying to get out of bed independently, and no dressing supplies are available at bedside. What immediate action is indicated?

call for assistance and dressing supplies

hold a folded washcloth against the insertion site

cover the insertion site with Vaseline gauze

ask the patient to place his hand over insertion site and go for dressings

Explanation:

It's very important that an impermeable covering be placed over the insertion site until the chest tube can be reinserted to prevent air from sucking into the pleural cavity. If no plastic or petroleum gauze dressing is available, the nurse can cover the insertion site with a clean gloved hand while calling for assistance. The physician must be notified as soon as the insertion site is secured. The patient's arterial blood gases should be assessed as soon as possible.

58.

A patient is unconscious with severe generalized tonic-clonic status epilepticus leading to periods of apnea with cause unknown. The patient is administered lorazepam (Ativan) initially and again in 5 minutes when there is no response, but seizures continue. What should the nurse anticipate will be the next step?

administration of another dose of lorazepam

rapid sequence intubation

addition of fosphenytoin

addition of phenobarbital

Explanation:

Because of the risk that periods of apnea associated with severe seizures can lead to respiratory failure and death, if a patient with status epilepticus does not respond to the first two doses of the benzodiazepine anticonvulsant medication, the next step is usually rapid sequence intubation so the patient can be ventilated while treatment continues. Fosphenytoin and phenobarbital may be added, but this may cause apnea, so intubation is necessary prior to administration of the drugs.

59.

During the post-surgical period following a bowel resection, a patient develops sudden dyspnea with tachypnea, chest pain, anxiety, fever, and cough. Which of the following tests is most indicated to diagnose pulmonary embolus?

arterial blood gas

D-dimer

CT-PA

chest radiograph

Explanation:

The CT-PA is most diagnostic for PE. D-dimer is almost always elevated with PE as endogenous fibrinolysis results in decreased levels of fibrinogen and increased D-dimer as the body attempts to digest the clot. A normal D-dimer generally can rule out PE, but an abnormal D-dimer is common in hospitalized patients and not diagnostic alone. Usually both the D-dimer and CT-PA are used. While hypoxemia and hypocapnia are common with PE, arterial blood gas values may alter for other reasons and remain within normal range even with pulmonary emboli. Pulmonary angiogram is rarely used, and chest radiograph is not diagnostic.

60.

A patient with a history of heart failure and supraventricular dysrhythmias has been maintained on digoxin but has developed bradycardia (48 bpm), headache, fatigue, nausea, diarrhea, and green halo vision. The physician has ordered serum digoxin, electrolyte levels, and continuous ECG monitoring. Which of the following electrolyte values would be most concerning?

potassium of 3.2 mEq/L

potassium of 5 mEq/L

sodium 140 mEq/L

magnesium 2 mEq/L

Explanation:

A potassium level of 3.2 mEq/L indicates hypokalemia, which increases the risk of digoxin toxicity. Immediate treatment includes withholding digoxin (the number of doses or the need for reduction in dosage depends on the severity of the reaction as well as the cause). With hypokalemia, potassium supplement should be administered as well as supportive therapy, such as acetaminophen for headache and an antidiarrheal. The digoxin antidote, digoxin immune Fab, is not routinely given but may be administered if indicated, usually because of severe toxicity with hyperkalemia, severe cardiac dysrhythmias, or digoxin overdose.

61.

Which of the following reactions after a bee sting indicates the patient is at high risk for anaphylaxis?

severe pain at site of sting.

itching localized hives about sting site.

swelling extends beyond sting site, involving an entire limb.

urticaria, edema, and itching in areas distant from sting.

Explanation:

Pain and local swelling, erythema, and itching are common after bee sting and may extend to an entire limb or extended area, but urticaria, edema, and itching occurring in areas distant from the sting site suggest a systemic reaction leading to anaphylaxis. Patients may feel lightheaded and nauseated and may have tightness in the chest, dyspnea, and lingual edema as well as generalized hives because of vasodilation and edema. Hypotension, bronchospasm, laryngospasm, and loss of consciousness may lead to respiratory and cardiac arrest.

62.

A patient is brought to the emergency department with suspected substance abuse. The patient exhibits euphoria, restlessness, hyperactivity, tachycardia, hypertension, dilated pupils, and rhinitis. Which of the following substances did the patient most likely use?

barbiturate (Valium)

heroin

cocaine

amphetamines

Explanation:

Cocaine: euphoria, restlessness, hyperactivity, tachycardia, hypertension, dilated pupils, and rhinitis (from sniffing cocaine). Patients may show damage to the nasal septum and may develop severe cardiac problems, including myocardial infarction. Peak effect occurs in 2 to 30 minutes and persists 30 to 60 minutes. Barbiturate (such as Valium): relaxed state, lack of inhibition, inability to concentrate, drowsiness, slurred speech, and sleepiness. Heroin: euphoria, lethargy, constricted/pinpoint pupils, drowsiness, and lack of motivation. Amphetamines: hyperactivity, agitation, euphoria, inability to sleep, and loss of appetite.

63.

Which electrolyte imbalance is the most life threatening for patients with renal failure?

hypernatremia

hyponatremia

hypokalemia

hyperkalemia

Explanation:

The electrolyte imbalance that is the most life threatening for patients with renal failure is hyperkalemia (greater than 5.5 mEq/L). Hyperkalemia may cause cardiac abnormalities and ECG changes (peaked or tented T-waves) as well as changes in general condition. Treatment for hyperkalemia includes sodium polystyrene sulfonate (Kayexalate), which can be administered orally or as a retention enema. Kayexalate exchanges sodium ions for potassium ions in the intestines. Unstable patients may receive IV dextrose 50% with insulin and calcium to shift potassium from the blood into the cells. Nebulized albuterol may also lower potassium levels.

64.

A patient with paroxysmal supraventricular tachycardia has received IV adenosine in order to slow the heart rate and convert to a sinus rhythm. Following administration of the drug, the nurse should carefully

monitor the patient for

ventricular fibrillation.

transient asystole.

premature ventricular contractions.

facial flushing.

Explanation:

The patient receiving adenosine should be carefully monitored for transient asystole since the drug slows AV node conduction, sometimes resulting in heart block and development of new dysrhythmias, including atrial fibrillation. Facial flushing is a common side effect and is short-lived (usually only lasting one to two minutes) as the drug is very fast acting with a half-life of less than 10 seconds. Other adverse effects can include dizziness, numbness and tingling in the arms, headache, nausea, and dyspnea.

65.

With chronic kidney disease, potassium-sparing diuretics are recommended for

patients with persistent hypokalemia.

all patients with chronic kidney disease.

patients with hyporeninemic hypoaldosteronism.

patients who cannot tolerate hydrochlorothiazide.

Explanation:

Because potassium-sparing diuretics markedly increase the risk of hyperkalemia in patients with chronic kidney disease, they are usually used only with patients who have persistent hypokalemia or hypertension. Risk is highest in patients whose glomerular filtration rate is less than 30 mL/min/1.73 m^2 and are also receiving ACEI or ARBs. Dosages should begin low and be increased slowly. Electrolyte levels must be monitored frequently. Hyporeninemic hypoaldosteronism is a contraindication for the use of potassium-sparing diuretics.

66.

A patient has been admitted with unstable angina but without cardiac enzyme elevation. During periods when the patient is pain-free, the nurse notes the following 12-lead ECG changes (Wellens syndrome): Slight elevation of ST segments in leads V1 and V3; terminal T-wave inversion in V2 to V3; and intact R waves. This patient is at risk for

ventricular arrhythmias.

acute posterior wall myocardial infarction.

atrial fibrillation.

acute anterior wall myocardial infarction.

Explanation:

Wellens syndrome can occur in patients with unstable angina, indicating marked stenosis of the left anterior descending coronary artery and impending acute anterior wall myocardial infarction. Cardiac enzymes are usually within normal range or show only slight elevation. This is an emergency situation that requires immediate cardiac catheterization for angioplasty or stent placement before complete occlusion occurs. The R waves remain intact because the myocardial infarction has not yet taken place. ST segments (V1 and V3) may be normal or show slight elevation, and terminal T-wave inversion occurs (V2-V3) during pain-free periods.

67.

A patient with valvular diseases has continuous ECG monitoring and shows the following ECG tracing:

Which of the following best describes this pattern?

atrial flutter

atrial fibrillation

premature ventricular contractions

premature atrial contractions

Explanation:

This pattern is consistent with atrial fibrillation. Atrial fibrillation results in ineffective beats that do not adequately empty the atria so that blood begins to pool, increasing the risk of thrombus formation and emboli. While stroke volume decreases, the ventricular rate increases to compensate but the decreased cardiac output can result in myocardial ischemia. Treatment may include cardioversion (per electrical cardioversion or pharmaceutical), ventricular pacing, and anticoagulant therapy if the atrial fibrillation lasts more than 24 hours.

68.

A patient has a chest tube in place and all connections are tight, but bubbling is occurring in the water seal container. What initial action is indicated?

no initial action is indicated because this is a normal finding

immediately change the drainage system

clamp the drainage tube close to chest tube and observe water seal

listen for the sound of hissing

Explanation:

If bubbling occurs in the water seal container, this indicates that there is an air leak somewhere in the system. The first step is to check the chest tube by clamping the drainage tube just below the chest tube. If this stops the bubbling, then the leak is superior to the clamp from the chest tube or the patient's chest. If bubbling continues after clamping, then the leak is in the system below the clamp, so the drainage system should be changed.

69.

A patient with myasthenia gravis develops sudden exacerbation of these symptoms: extreme weakness, inability to hold up their head, missing gag reflex. The patient is anxious, dyspneic, and tachypneic. Which of the following diagnostic tests is best to differentiate between myasthenic and cholinergic crises?

Tensilon test

MRI

ice pack test

electromyography

Explanation:

Myasthenic crisis (usually due to too little medication) and cholinergic crisis (due to too much medication) both present with similar symptoms—profound weakness, respiratory distress, anxiety—and the Tensilon test (also used to diagnose myasthenia gravis) is used to differentiate the two. The Tensilon (edrophonium) test consists of administration of small doses (up to a total of 10 mg) of edrophonium. A positive response (improvement in muscle strength) indicates myasthenic crisis and a negative response (no improvement) indicates a cholinergic crisis.

70.

A patient with bradyarrhythmia has not responded to pharmaceutical intervention (atropine) and is experiencing hemodynamic instability, so transcutaneous pacing has been initiated. The rate of pacing is usually set at

80 to 90 bpm

70 to 80 bpm

60 to 70 bpm

50 to 60 bpm

Explanation:

With transcutaneous pacing, the rate is usually set at 60 to 70 bpm with the current increased slowly until capture, after which the current is slowly lowered if possible. Electrodes (gel-covered paddles/pads) are usually placed on the left chest and left back so that the heart is between them. Leads connect to a computerized ECG and defibrillator, which is synchronized so the electrical current is delivered during QRS (ventricular depolarization). It's important that the current be delivered at the correct time or ventricular tachycardia or ventricular fibrillation may occur.

71.

The most common cause of hospital-associated pneumonia (HAP) is

mechanical ventilation.

bed rest in a supine position.

previous antibiotic therapy.

poor hand-washing practices.

Explanation:

While all of these are risk factors for hospital-associated pneumonia (HAP), 80% of HAP is the result of ventilator-associated pneumonia (VAP), a subgrouping of HAP that may occur 48 or more hours after initiation of ventilation per endotracheal tube or tracheostomy. When patients are receiving mechanical ventilation, they have depressed epiglottal and cough reflexes, increased secretions, and decreased cilia activity, all increasing the risk of aspiration and colonization of bacteria in the lungs. Two common pathogens associated with HAP are Pseudomonas aeruginosa and Staphylococcus aureus.

72.

What precaution should be used when administering IV mannitol solution to patients in order to control increased intracranial pressure?

chill solution prior to administration.

administer solution through a filter.

heat solution prior to administration.

administer a test dose to determine response.

Explanation:

Mannitol tends to form crystals at low temperatures, so it should always be administered through a filter. Crystals are more likely to form with concentrations of over 15%. Mannitol solutions may be kept in a warming device to prevent crystal formation but should be cooled to body temperature prior to administration. Test doses are indicated for patients with renal impairment. Mannitol is usually administered over a 30- to 60-minute period while the patient is carefully monitored for changes in ICP and cerebral perfusion.

73.

Which of the following is an indication for intubation and mechanical ventilation for a patient presenting with possible status asthmaticus?

ABGs showing hypocapnia and respiratory alkalosis

pulsus paradoxus of 20 mmHg

peak expiratory flow rate 38% of predicted

FEV1 25% of predicted

Explanation:

With status asthmaticus, indications for intubation and mechanical ventilation include peak expiratory flow rate less than 40% of predicted as well as FEV1 less than 20% of predicted. On initial presentation, hyperventilation usually results in ABGs showing hypocapnia and respiratory alkalosis, but if the patient's condition worsens, hypoxemia and hypercapnia develop, resulting in respiratory and metabolic acidosis. Patients may exhibit decreased level of consciousness, diminished or absent breath sounds, inability to breathe in supine position, and pulsus paradoxus greater than 25 mmHg.

74.

A patient who is undergoing rehabilitation after severe traumatic injuries is depressed about his condition and concerned about his ability to live independently. What is the most effective strategy for the nurse to help improve the patient's motivation?

provide positive feedback about tasks he is able to complete

assist him in developing a list of long-term goals

compare his present abilities to his abilities immediately after the injury

tell him that everyone feels the same way during therapy

Explanation:

The best method to improve a patient's motivation is to provide positive feedback about tasks the patient is able to complete at the time he is doing the tasks because that helps the patient focus on concrete improvements. Focusing on long-term or even short-term goals may seem overwhelming in the initial stages of rehabilitation, especially if the patient is depressed. Comparing present abilities and initial abilities focuses on the past more than the present and future, and the nurse should never make overgeneralizations that include "everyone" because each person is individual.

75.

The pacing mode that is most commonly used with temporary transvenous pacing is

DDD.

AOO.

VDD.

VVI.

Explanation:

The pacing mode that is most commonly used with temporary transvenous pacing is VVI. The electrode is placed in the ventricle and paces the ventricle first, senses ventricular activity, and inhibits ventricular output when it senses intrinsic ventricular depolarization. This is the fastest type of pacing to use in emergency situations because it is more difficult to position and maintain a temporary atrial lead. VVI is also the pacing mode often used with epicardial leads after cardiac surgery, especially in the presence of third-degree AV block.

76.

A patient with severe urinary tract infection and bacteremia begins to develop petechiae and purpura and is bleeding at the IV site. The patient passes bloody diarrhea. BP is 64/48 mmHg and pulse is 122/min. Recent laboratory findings include increased WBC count, decreased platelet count, and fragmented RBCs. Which further laboratory testing should the nurse anticipate?

liver function tests

kidney function tests

DIC panel

arterial blood gases

Explanation:

These symptoms are consistent with disseminated intravascular coagulation, so a DIC panel is indicated to determine if factors necessary for clotting are decreased and if clotting times are prolonged (if so, these findings may confirm DIC). DIC occurs as secondary to another disorder, such as bacteremia or sepsis, trauma, necrotizing enterocolitis, cancer, malaria, and placenta abruptio. With DIC, both excess clotting and hemorrhage may occur at the same time. Identifying and treating the underlying cause is critical to treatment.

77.

A 72-year-old man underwent a total knee replacement. Prior to surgery he was alert, responsive, and oriented, but 24 hours after surgery he is having fluctuating periods of confusion with sudden changes in consciousness, inability to sustain attention, disorientation, and visual hallucinations. The most effective pharmaceutical intervention is

lorazepam (Ativan).

benztropine (Cogentin).

chlordiazepoxide (Librium).

paroxetine (Paxil).

Explanation:

The two most commonly used drugs to treat delirium are lorazepam and haloperidol. Anticholinergics, such as benztropine, may trigger delirium, especially in older adults. Delirium has similar symptoms as dementia; but with delirium the symptoms tend to fluctuate, so patients may have both periods of lucidity and profound confusion. Delirium may be triggered by many conditions, such as trauma, depression, surgery, untreated pain, and electrolyte imbalance. A patient's attention deficit may be noted if the patient is unable to count backward from 1 to 20 or spell his first name backward.

78.

An older adult who recently traveled in an area endemic to West Nile virus presents with poliomyelitis-like symptoms, including fever, headache, flaccid quadriplegic paralysis, bladder dysfunction, and cranial nerve involvement. What complication should the nurse anticipate most?

heart failure

respiratory failure

disseminated intravascular coagulation

deep vein thrombosis/pulmonary embolism

Explanation:

Patients who develop West Nile virus flaccid paralysis are at high risk for respiratory failure, which may require mechanical ventilation and is the primary cause of mortality. WNV flaccid paralysis is similar to poliomyelitis with damage to anterior horn cells. It may involve paralysis of one limb or all four limbs. A similar manifestation is WVN-associated Guillain-Barré syndrome. Patients may also

develop WNV meningitis and/or encephalitis. Treatment is supportive and depends on symptoms, as no specific medication is available for WNV.

79.

A patient with post-surgical left ventricular failure and low cardiac output has an intra-aortic balloon pump (IABP) inserted. At which point in the cardiac cycle should inflation occur?

end of diastole

beginning of systole

end of systole

beginning of diastole

Explanation:

Inflation must be timed exactly to the beginning of diastole at the dicrotic notch. Inflation and deflation must be coordinated with the patient's cardiac cycle to achieve hemodynamic stability. If inflation occurs too early, it may force the aortic valve to close prematurely, impairing ejection. If inflation occurs too late, the assistive function is shortened (although this does not directly cause harm to the patient). The balloon should deflate at the end of diastole just prior to the aortic upstroke.

80.

When preparing written materials for patient education, the maximum word length for a sentence should be

30.

25.

20.

15.

Explanation:

To increase reading ease for patients, the maximum word length for a sentence should be 20 words, keeping in mind that a word count of 13 to 20 is approximately equivalent to a seventh-grade reading level, 7 to 12 equivalent to sixth-grade reading level, and 3 to 6 equivalent to a fifth-grade reading level. Complex sentence structures should be avoided and materials presented in active voice and second person (you). Language should be simple and conversational, avoiding technical terms.

81.

A patient with cardiac ischemia develops a hypertensive crisis with blood pressure of 240/130 mmHg. Which initial pharmaceutical treatment is usually indicated?

sodium nitroprusside

short-acting beta-blockers (labetalol or esmolol)

furosemide

alpha blocker

Explanation:

Sodium nitroprusside is often given initially to treat hypertensive crisis related to cardiac ischemia because it provides very fast-acting vasodilation. Treatment must be given immediately to lower blood pressure and prevent damage to vital organs because a diastolic BP greater than 120 mmHg is considered a hypertensive emergency. The goal is usually not to lower BP to normal levels, and a

decrease in 10% to 15% may reduce symptoms. With hypertensive urgency, when organs are not in immediate danger, the goal is one-third reduction in six hours, one third in the next 24 hours, and one-third over 2-4 days.

82.

The nurse is reviewing the medication list with a 76-year-old patient who takes multiple drugs for heart disease and COPD, including warfarin and theophylline. Which of the following OTC drugs that the patient reports using regularly is likely to be the most problematic?

acetaminophen

cimetidine

docusate sodium stool softener

topical cortisone cream

Explanation:

Cimetidine carries a high risk of drug interactions, especially in older adults, because it binds hepatic enzymes that metabolize many different drugs. Cimetidine inhibits oxidation of the drugs and may raise blood concentrations. It is especially a concern with drugs, such as warfarin and theophylline, which have a narrow therapeutic index. Cimetidine, like all H_2 antagonists, may inhibit absorption of drugs that require an acidic gastric environment. Cimetidine is the oldest H_2 antagonist, and newer drugs, such as famotidine, have far fewer drug interactions.

83.

A patient with a tracheostomy is to receive the Passy-Muir valve to facilitate communication and improve swallowing. What change must be made when placing the valve on the tracheostomy tube?

cuff deflated

cuff inflation increased

no changes necessary

cuff inflation decreased by approximately 50%

Explanation:

When the Passy-Muir valve is placed on a tracheostomy tube, the cuff must be completely deflated. If mechanical ventilation is used, the tidal volume should also be increased. The Passy-Muir valve is a one-way valve that opens on inhalation so that air can enter the lungs and closes on exhalation, forcing the air over the vocal cords and out the mouth instead of out the tracheostomy tube. The valve may be used to help the patient regain normal breathing patterns, improve swallowing, and decrease the risk of aspiration.

84.

A patient who is taking metformin for diabetes mellitus, type 2, is also taking metoprolol for junctional tachycardia and has been prescribed hydrochlorothiazide for persistent elevated blood pressure. What is the primary concern with this drug combination?

increased tachycardia

hyperglycemia

renal failure

muscle cramps

Explanation:

The primary concern with combining these drugs is that hydrochlorothiazide can interfere with the action of antidiabetic agents, decreasing hypoglycemic effects; so, patients may develop

hyperglycemia and should be advised to careful monitor their blood glucose levels when beginning treatment since the dosage for the antidiabetic agent may need to be increased. Patients should also be advised to avoid licorice, which may cause increased potassium loss, and alcohol, which may cause orthostatic hypotension.

85.

A non-diabetic patient with a Foley catheter develops sudden onset of increased temperature (39 °C); a heart rate of 108/min; a respiratory rate of 32/min; peripheral edema with decreased capillary refill; serum glucose of 160 mg/dL; WBC of 16,000; platelet count of 95,000; blood pressure of 86/52 mmHg; urinary output of 0.2 mL/kg/hr; and flushed skin. The most likely diagnosis is

bacteremia.

pyelonephritis.

sepsis.

kidney failure.

Explanation:

These symptoms are consistent with sepsis and part of the continuum leading to septic shock. The diagnostic criteria for sepsis include many variables. General signs of infection and impending shock are usually present (fever, tachycardia, hypotension, fever) as well as edema and flushing resulting from massive arterial and venous vasodilation in early stages. WBC may be elevated (greater than 12,000) or decreased (less than 4000). Hyperglycemia and coagulopathies are common, and urine output falls because of decreased intravascular volume.

86.

A patient with SIRS is at risk for developing MODS. Which organ system is usually the first to fail?

cardiac

renal

hepatic

pulmonary

Explanation:

Because the lungs are especially sensitive to the inflammatory changes that occur with SIRS, the pulmonary system is often the first to fail and the subsequent lack of oxygen causes other systems to fail as well. While there is much variation in the manner in which systems fail, some sequentially and others failing at the same time, the most common progression is from the lungs to the liver, the GI system, the kidneys, and the heart. MODS may be primary from direct injury or secondary, such as from SIRS.

87.

The physician has ordered position therapy for a patient with acute lung injury (ALI) in order to improve oxygenation. Which position is most likely to improve oxygenation and ventilation/perfusion matching and decrease shunting?

supine, flat

supine with head of bed elevated

right or left side lying (most damaged lung in dependent position)

prone

Explanation:

Prone positioning is used with ALI to improve oxygenation to the less damaged parts of the lungs and to improve ventilation/perfusion matching and decrease intrapulmonary shunting. Prone

positioning should improve PaO_2 by more than 10 mmHg within 30 minutes, although no minimum or maximum time period for prone positioning has been established, and the treatment is usually reserved for those with life-threatening conditions because of the difficulty in positioning patients and preventing pressure. Special frames, such as the Vollman Prone Positioner, or pillows must be used so that the abdomen hangs free so the diaphragm descent is not impaired.

88.

If a patient is receiving oxygen therapy with a mask with a reservoir bag and the flow rate is set at 6, what is the estimated FiO_2?

40%

50%

60%

100%

Explanation:

When oxygen is delivered via a mask with a reservoir bag, the estimated FiO_2 is 10 times the setting: 6 is equal to 60% estimated FiO_2. The flow rate should be set from 6 to 10. With a nasal cannula or catheter, the base setting of a flow rate of 1 is FiO_2 of 24 and each increase in the flow rate increases the FiO_2 by 4 percentage points: 1—24%, 2—28%, 3—32%, 4—36%, 5—40%, 6—44%. With an oxygen mask, each increase in flow rate increases the FiO_2 by 10%: 5-6 is 40%, 6-7 is 50%, and 7-8 is 60%.

89.

A patient with bronchogenic small (oat) cell carcinoma exhibits lethargy, anorexia, nausea, and vomiting. Urinary output is diminished, and urine specific gravity is increased. Serum sodium is 122 mEq/L, and the patient is beginning to have difficulty concentrating and exhibiting confusion. Based on these observations, the most likely cause is

diabetes insipidus.

hypothyroidism.

renal metastasis.

syndrome of inappropriate secretion of antidiuretic hormone.

Explanation:

Syndrome of inappropriate secretion of antidiuretic hormone (SIADH) can be triggered by many different disease processes and many medications, but a common cause is bronchogenic small (oat) cell carcinoma because these abnormal cells synthesize and release ADH. The initial symptoms (lethargy, anorexia, nausea, and vomiting) result from dilutional hyponatremia; however, as the sodium level falls to critical levels (below 120 mEq/L), neurological symptoms become more evident as the patient becomes increasingly confused and unable to concentrate. Without treatment, the patient will progress to seizures, coma, and death. The first-line treatment is fluid restriction.

90.

A patient with a history of COPD and heavy smoking is admitted with respiratory distress, using accessory muscles for breathing. The assessment findings include a heart rate of 122/min; a blood pressure of 86/42 mmHg; SpO_2 of 80%; diminished lung sounds, especial on the left; tracheal deviation on the right; and increased venous distention. Based on these findings, the most likely cause is

viral pneumonia.

pleural effusion.

aspiration pneumonia.

tension pneumothorax.

Explanation:

These findings are consistent with tension pneumothorax, which will require insertion of a chest tube on the left side. Tension pneumothorax can occur in COPD patients with rupture of lung bullae and also may occur in patients on mechanical ventilation. Patients are usually in severe respiratory distress with tachycardia and tachypnea. Classic signs include tracheal shift, decreased lung expansion, increased percussion notes, decreased breath sounds, and distended jugular veins, although many patients do not exhibit all of these signs.

91.

The three characteristics most often associated with cardiogenic shock include

increased preload, increased afterload, and decreased contractility.

decreased preload, decreased afterload, and decreased contractility.

increased preload, increased afterload, and increased contractility.

increased preload, decreased afterload, and decreased contractility.

Explanation:

The three characteristics most often associated with cardiogenic shock include increased preload, increased afterload, and decreased contractility. These characteristics combine to cause decreased cardiac output and increased systemic vascular resistance as a compensatory measure to protect internal organs. Tissue perfusion and coronary artery perfusion decrease as cardiac output falls. Because the left ventricle cannot adequately pump the blood, the fluid backs up, causing pulmonary edema and right ventricular failure. Patients exhibit hypotension, tachycardia, decreased heart sounds, chest pain, basilar rales, tachypnea, pallor, and cool clammy skin.

92.

When auscultating heart sounds, the nurse notes an ejection click, a brief high-pitched sound that occurs immediately after S1. This heart sound is associated with

left ventricular failure.

aortic valve stenosis.

pericarditis.

mitral valve stenosis.

Explanation:

The ejection click, a brief high-pitched sound that occurs immediately after S1, is associated with aortic valve stenosis. Gallop rhythms include S3, which occurs after S2 and may indicate left ventricular failure in older adults, although it may be a normal finding in children and young adults; and S4, which occurs before S1 and may indicate ventricular hypertrophy, coronary artery disease, or aortic valve stenosis. The opening snap, an unusual high-pitched sound that occurs immediately after S2, is associated with mitral valve stenosis. The friction rub, which is a harsh grating sound during systole and diastole, is associated with pericarditis.

93.

An elderly Chinese woman with inoperative metastatic liver cancer believes she has a "liver infection" that will improve with time. Her family members have asked that the patient be shielded from the truth because of her fear of cancer, and the physician has agreed. The best action for the nurse is to

take the issue to the ethics committee.

tell the patient the truth.

respect the family's wishes.

report the physician to administration.

Explanation:

At one time, patients were routinely shielded from bad news, but the pendulum has swung in the opposite direction and now it is generally believed that patients should always be told the truth. This is a cultural belief more common in the West than the East. In some cultures, people are often not told that they are dying or have cancer, especially if no cure is possible. In this case, the nurse should respect the family's wishes.

94.

A patient with bleeding esophageal varices has undergone balloon tamponade to control sudden onset of bleeding before more definitive therapy can be carried out. What is the maximum period of time that balloon tamponade can be maintained?

4 hours

8 hours

12 hours

24 hours

Explanation:

While balloon tamponade can be maintained for up to 24 hours, it should be left in place for the shortest period possible because of the risk of serious complications, such as airway obstruction, esophageal injury, and aspiration (especially if the gastric balloon ruptures and the tube migrates upward or if the patient is confused and pulls on the tube). When removing the tube, the esophageal

tube is deflated first and the patient observed for bleeding for a few hours prior to deflation of the gastric balloon.

95.

A patient with atrial fibrillation is to undergo cardioversion. What pharmaceutical intervention is usually prescribed three weeks prior to cardioversion?

digoxin

loop diuretic

anticoagulant

beta blocker

Explanation:

Atrial fibrillation is often treated with cardioversion, a timed electrical shock to the heart to convert a tachydysrhythmia to a sinus rhythm. An anticoagulant, such as warfarin, is usually prescribed 3 weeks prior to the procedure in order to reduce the risk of emboli. Patients on digoxin must discontinue the drug at least two days prior to the procedure. In some cases, antiarrhythmics, such as diltiazem hydrochloride (Cardizem) or amiodarone hydrochloride (Cordarone) may be prescribed prior to the cardioversion to slow the heart rate.

96.

A nurse believes that a clinical pathway for treatment of hospitalized asthma patients would help to standardize care and improve patient outcomes. What type of team should be involved in development of the clinical pathway?

nurses and physicians

respiratory therapists and physicians

interdisciplinary team

physicians only

Explanation:

Clinical pathways should be developed by interdisciplinary teams that include physicians as well as nurses and other healthcare providers who may participate in patient care, such as respiratory and occupational therapists and nutritionists. The team must select the patient group, diagnosis, and procedures based on analysis of evidence through observation, literature review, and interviews. The group should discuss issues and reach consensus and should clearly outline levels of care and days covered by the pathway. Pilot testing and staff education should precede utilization.

97.

A patient receiving total parental nutrition (TPN) exhibits signs of dehydration (dry mucous membranes, decreased ski turgor), increased BUN, and increased urinary specific gravity. The most likely complication resulting in these findings is

hypoglycemia.

hyperammonemia.

azotemia.

deficiency of essential fatty acids.

Explanation:

Azotemia: dehydration, increased BUN, and increased urinary specific gravity. Management includes decreasing amino acids in PN formula or changing to NephrAmine. Hypoglycemia: decreased serum

glucose, diaphoresis, pallor, lethargy, confusion, and weakness. Management includes stopping insulin and increasing concentration of dextrose as well as slowing infusion rate and evaluating for sepsis. Hyperammonemia: lethargy, change in mental status, asterixis. Management includes decreasing protein concentration in PN formula and evaluating for hepatic insufficiency. EFA deficiency: dry skin, thrombocytopenia. Management includes increasing lipid intake (at least 2 times weekly), oral fats (if possible), and topical fats.

98.

A patient who has undergone open-heart surgery and cardiopulmonary bypass (CPB) has an amylase level of 1100 in the early post-surgical period. This indicates

increased risk of myocardial infarction.

increased risk of hypertensive crisis.

a normal value after CPB.

increased risk of pancreatitis.

Explanation:

Amylase levels are often elevated after CPB, but only 3% or fewer patients develop pancreatitis; however, levels over 1000 UI/L indicate increased risk, so patients must be monitored carefully. The increased amylase level may develop because of decreased renal excretion. Patients may exhibit nausea, anorexia, and ileus. Treatment is primarily supportive. If pancreatitis develops, it typically results from necrosis associated with lengthy CPB and prolonged decreased cardiac output. Patients with a history of alcoholism are at increased risk.

99.

An 80-year-old patient who lives alone is generally in good health but has shown a steady decline with evidence of malaise, lack of appetite, and weight loss. Laboratory tests and physical examination show no abnormalities other than slight anemia and mild hypertension. The patient is able to carry out ADLs but shows little interest in other activities and has withdrawn from social interactions. Which of the following assessments is most indicated?

Index of Independence of Activities of Daily Living (Katz Index)

Confusion Assessment Method

Palliative Performance Scale

Geriatric Depression Scale

Explanation:

These nonspecific signs and symptoms of decline are characteristic of failure to thrive, which is commonly associated with depression in older adults, so the Geriatric Depression Scale should be administered. GDS is a simple 15-question questionnaire that requires only "yes" or "no" answers with a score of greater than 5 "yes" answers indicating depression. Failure to thrive may result from medications (anticonvulsants, antidepressants, opioids, SSRIs, neuroleptics, diuretics, beta-blockers, anticholinergics, alpha-antagonists, and benzodiazepines), chronic illness, socioeconomic factors, and abuse or neglect.

100.

When assessing jugular venous pressure, the normal height of the jugular vein pulsation above the sternal angle is less than or equal to

2 cm.

4 cm.

5 cm.

6 cm.

Explanation:

The normal height of the jugular vein pulsation above the sternal angle is 4 cm or less. If the measurement is greater than 4 cm, this can indicate increased pressure in the right atrium and right heart failure. However, pericarditis and tricuspid stenosis may also increase pressure as well as laughing or cough (which can trigger the Valsalva response). The jugular venous pressure is a non-invasive method of estimating central venous pressure although the procedure is usually not accurate with heart rate of over 100/min.

101.

A 50-year-old female patient who has recovered from a recent myocardial infarction is prescribed clopidogrel bisulfate to reduce the risk of thrombus formation. Which statement by the patient indicates the need for further education about the drug?

"I check my skin for signs of bruising when I shower."

"I take acetaminophen for my arthritis pain."

"I take red clover supplement to help reduce hot flashes."

"I can take the pill before or after breakfast."

Explanation:

Red clover is contraindicated with clopidogrel because it increases the risk of bleeding. NSAIDs and salicylates also increase risk of bleeding and should be avoided or monitored carefully. Clopidogrel is an antiplatelet inhibitor (adenosine diphosphate inhibitor). It inhibits platelet aggregation and forming of a clot by changing the membrane so that it can no longer receive the signal to aggregate. Adverse effects include bleeding, chest pain, hypertension, edema, flu-like symptoms, abdominal pain, indigestion, diarrhea, epistaxis, rash, pruritus, bradycardia, dizziness, edema, leg and pelvic pain, and chills.

102.

When assisting with insertion of a pulmonary artery catheter, the nurse should inflate the balloon when the catheter

reaches the right atrium.

enters the right ventricle.

enters the pulmonary artery.

reaches the superior vena cava.

Explanation:

The balloon for a pulmonary artery catheter is usually inflated when the catheter tip reaches the right atrium, allowing it to float through the right ventricle and into the right pulmonary artery. The balloon should be inflated to a maximum of 1.5 mL of air. The waveforms and pressures should be recorded as the catheter passes from the right atrium into the pulmonary artery where it occludes the vessel in position for recording of pulmonary artery wedge pressure (PAWP). Once the PAWP is obtained, the balloon is deflated and the catheter secured.

103.

A patient with alcoholism is admitted after an episode of prolonged binge drinking. He has been a heavy drinker, drinking over a pint of distilled alcoholic beverage daily for over 20 years. His blood alcohol level on admission is 0.3. Which of the following symptoms indicates onset of delirium tremens?

impaired judgment, slurred speech, and unsteady gait

nausea, vomiting, and anxiety

audio and visual hallucinations, agitation, and tremor

global confusion, fever, tachycardia, and, hallucinations

Explanation:

Patients with delirium tremens (onset usually greater than 48 hours after drinking cessation) frequently exhibit global confusion, hallucinations, delusions, fever, tachycardia, and hypertension. Patients may become very aggressive and violent as they respond to feelings of paranoia and fear. Many patients feel as though something is crawling on their skin and may believe they are dying. DTs occur in about 5% of patients undergoing alcohol withdrawal and can be fatal without prompt treatment. Patients may progress from alcohol intoxication to alcohol withdrawal, to DTs.

104.

A patient with a pulmonary artery catheter in place is restless and moving about. The waveform indicates spontaneous wedging, suggesting that the catheter may have migrated and may result in pulmonary artery infarction. What is the initial intervention?

turn the patient onto the opposite side of the catheter placement

flush all air from the system

inflate and deflate the balloon

withdraw catheter into right atrium

Explanation:

Spontaneous wedging can occur if the catheter becomes displaced, often from the patient moving about or from migration of the catheter. The first action should be to try to dislodge the catheter by turning the patient onto the opposite side of the catheter placement. Other interventions include asking the patient to raise or straighten the arm or turn the head and gently cough. If this does not resolve the problem, then the catheter may need to be repositioned.

105.

A patient has recently been diagnosed with celiac disease after tests to determine the cause of chronic weight loss, anemia, diarrhea, rash, bone pain, and irregular menses. When discussing dietary interventions, the nurse tells the patient that celiac disease may result in malabsorption of

vitamin B_{12}.

folate and iron.

vitamin C.

vitamin D.

Explanation:

Celiac disease results in malabsorption of folate and iron, so patients are often anemic. Additionally, damage to the lining of the small intestines from gluten sensitivity interferes with absorption of fats and calcium, so patients may exhibit osteomalacia and bone pain and steatorrhea. Celiac disease is an autoimmune disorder in which antibodies to gluten in the diet cause inflammation and damage to intestinal villi. Patients must be maintained on a strict gluten-free diet. Gluten is found in some grains, such as wheat.

106.

Following an automobile accident with abdominal trauma, intra-abdominal pressure is monitored for compartment syndrome. Which of the following intra-abdominal pressures is the minimum pressure that generally indicates the need for surgical decompression?

5 mmHg

13 mmHg

20 mmHg

26 mmHg

Explanation:

An intra-abdominal pressure of more than 25 mmHg indicates the need for immediate surgical decompression to prevent cardiovascular and renal damage. Normal intra-abdominal pressures range from 0 to 5 mmHg, but perfusion of internal organs may be impaired with pressures above 13 mmHg. Below 25 mmHg, treatment usually includes hypervolemic therapy to expand volume and improve perfusion. If decompression is indicated, crystalloids are usually administered first to prevent too rapid reperfusion, which can cause acidosis and cardiac arrest.

107.

Which of the following is an example of a well-written learning objective?

"After attending a workshop about hypertension, the patient will be able to state 4 causes for high blood pressure."

"The patient will understand how to monitor blood sugar."

"The nurse will provide a demonstration on use of the BiPAP machine."

"After instruction about infection prevention, the patient will understand infection control procedures."

Explanation:

A well-written learning objective should clearly outline expectations of the learning process and usually contains 4 elements: the condition or testing situation ("after attending a workshop about hypertension"); the identity of the learner, not the instructor ("the patient"); the expected behavior ("will be able to state"); and the measurable criterion ("4 causes for high blood pressure").

108.

What pressure setting is usually used initially when titrating CPAP?

1 cmH_2O

5 cmH_2O

10 cmH_2O

20 cmH_2O

Explanation:

CPAP is titrated at bedtime after the patient has participated in a demonstration of the equipment and usually begins with the pressure set at low at about 5 cm H_20 until the patient falls asleep after which the pressure is slowly increased by 1 cm H_20 every 15 minutes with the patient carefully observed until relief of symptoms occurs. During titration, the patient is usually placed in supine position. The pressure may be adjusted up and down until optimal pressure is achieved.

109.

If a patient's cardiac output is 5.6 L/min and the heart rate is 80/min, the stroke volume is

0.7 mL

7 mL

70 mL

700 mL

Explanation:

In order to calculate the stroke volume, the patient's cardiac output and heart rate must be known. If the cardiac output is 5.6 L/min, this equals 5600 mL. If the heart rate is 80, then the calculation is: CO/HR = SV, 5600/80 = 70 mL. Normal cardiac output ranges from 4 to 6 L per minute. Normal SV is 60 to 70 mL per heartbeat.

110.

A 72-year-old male patient with an acute MI and left ventricular failure has a pulmonary artery catheter in place for hemodynamic monitoring and is developing cardiogenic shock. Hemodynamics include a blood pressure (BP) of 90/60 mmHg, a heart rate (HR) of 120/min, MAP of 70, SV of 25 mL/min, RAP of 8 mmHg, PAP of 36/24 mmHg, PAWP of 20 mmHg, CO of 3 L/min, CI of 1.5 L/min/m^2, and SVR of 1626 dynes/sec cm^{-5}. The patient receives oxygen, dobutamine, and nitroprusside. What hemodynamic changes should the nurse expect as a positive response?

increased CO and SV and decreased HR, SVR, and PAWP

decreased HR and increased CO and PAWP

increased CO, SV, SVR, and PAWP and decrease HR

increased HR, CO, SV, and decrease PAWP and SVR

Explanation:

Oxygen should help relieve hypoxemia. Inotropes, such as dobutamine, improve contractility of the heart, increasing the CO (normal 4-6 L/min) and SV (normal 60-70 mL/beat). Vasodilators, such as nitroprusside, should decrease the SVR and PAWP. Combined action should decrease the heart rate and improve the blood pressure, which should in turn increase the MAP, which is barely within normal range (70 to 110 mmHg). MAP of at least 60 mmHg is required for adequate perfusion.

111.

A patient is hospitalized with a transmural Q-wave myocardial infarction. In how many hours will the CK level peak?

3

14

27

45

Explanation:

Characteristics of a Q-wave myocardial infarction include peak CK levels at 27 hours (compared to 12 to 13 hours for non-Q-wave MI). Infarction of the coronary artery is usually prolonged with coronary occlusion complete in 80 to 90%. Most but not all Q-wave MIs are transmural. As the tissue damage approaches the full-thickness of the heart muscle, Q waves (wide and deep) begin to appear on the ECG, especially early in the morning because of adrenergic activity. The mortality rate for Q-wave MI is about 10%.

112.

Which of the following changes in fluid intelligence are associated with age?

decreased test anxiety

altered time perception

decreased long-term memory

decreased reaction time

Explanation:

Fluid intelligence is the ability to see relationships, reason, and think abstractly—all qualities needed to facilitate learning. Older adults tend to have altered time perception so that time seems to pass more quickly than when they were younger, so they may focus more on the here and now rather than on future needs. Other changes include increased test anxiety, decreased short-term (rather than long-term) memory, increased processing and reaction time, and persistence of stimuli (confusing older learning with newer).

113.

A patient whose intermittent claudication had progressed to rest pain and had not responded to conservative treatment has undergone a fem-pop bypass. The patient complains of numbness and tingling on the anterior and medial aspect of the leg. This suggests

damage to the femoral nerve.

occlusion of the femoral artery.

normal postoperative sensation.

bypass occlusion.

Explanation:

The femoral nerve may become damaged during the fem-pop bypass procedure, resulting in numbness and tingling in the anterior and medial aspects of the thigh. The femoral nerve activates muscles used to extend the leg and move the hips, so damage may impair mobility (depending upon the degree). The damage may occur as direct injury or from compression related to edema and inflammation. The symptoms may recede over time, although some patients will need physical therapy to strengthen muscles.

114.

Which of the following drugs puts the patient with diabetes mellitus, type 2, most at risk for episodes of acute hypoglycemia?

metformin (Glucophage)

rosiglitazone (Avandia)

exenatide (Byetta)

glipizide (Glucotrol)

Explanation:

The two types of drugs most commonly implicated in acute hypoglycemia are insulins and sulfonylureas, including glipizide (Glucotrol), which stimulates beta cells in the pancreas to produce more insulin. The hypoglycemic effect of sulfonylureas may be potentiated by other medications that compete for binding sites on albumin. Patients with sulfonylurea-induced hypoglycemia and altered mental status require hospitalization, IV glucose, and careful monitoring, since oral ingestion of carbohydrates alone may not prevent relapses, which may occur for days.

115.

A patient with bilateral lung transplants has developed recurrent respiratory infections and increased exercise intolerance with a decline in FEV1. The patient is diagnosed with bronchiolitis obliterans. Which of the follow treatment options is most likely to be taken?

no treatment

increased immunosuppression

decreased immunosuppression

antibiotics

Explanation:

Because bronchiolitis obliterans is a progression of allograft rejection, the usual treatment approach is to increase immunosuppression, often initially with methylprednisolone, although there is little evidence this actually improves the condition, and it may further increase risk of infection. Bronchiolitis obliterans results in inflammation of the small airways and fibrosis with development of intraluminal polyps and hyperplasia that obstructs the bronchioles and may extend into the alveolar ducts and distal alveoli. Prognosis is poor.

116.

A patient who is taking warfarin is scheduled for cardiac catheterization. How long prior to the catheterization should the patient discontinue the warfarin?

24 hours

two to three days

one week

two weeks

Explanation:

Because warfarin decreases the clotting time, warfarin should be discontinued two to three days prior to the procedure and the INR should be under 2. Vitamin K or fresh frozen plasma may be administered to reverse the effects of warfarin if necessary. Aspirin and other antiplatelet medications are usually given before cardiac catheterization. Heparin therapy can be continued during cardiac catheterization but discontinued for removal of the sheath.

117.

A patient has been hospitalized with nausea and vomiting but minimal abdominal distention. The patient has not passed flatus in 14 hours, and abdominal x-ray shows dilated small bowel loops and no colonic or rectal gas. The patient's CBC and electrolytes are within normal limits. Based on these findings, the nurse should suspect that the primary initial intervention will be

contrast studies.

NG suction.

exploratory surgery.

observation.

Explanation:

These signs and symptoms are characteristic of complete small bowel obstruction (especially not passing flatus for more than 12 hours), the dilated loops of small bowel, and the lack of air in the colon and rectum; so, the initial intervention is likely to be exploratory surgery since the risk for ischemia is high. If the blockage is in the proximal part of the small bowel, abdominal distention may not be evident. Laboratory studies, such as the complete blood count and electrolytes, may be normal or abnormal, depending on many factors.

118.

Following brain surgery, a patient's intracranial pressure has increased. What $PaCO_2$ level is optimal to control increased ICP?

35-38 mmHg

38-45 mmHg

24-27 mmHg

27-32 mmHg

Explanation:

Because carbon dioxide acts as a vasodilator, dilating cerebral blood vessels and causing cerebral edema and increased ICP, the optimal $PaCO_2$ level is 27 to 32, which is lower than the normal $PaCO_2$ level of 35 to 45. Ventilation, usually per tracheal intubation, is provided to provide oxygenation and control CO_2 levels although hyperventilation, which constricts cerebral blood vessels, should be avoided (especially during the first 5 post-operative days) or used only for short periods since it may induce ischemia.

119.

A patient with chronic heart failure develops severe dyspnea, cough with frothy slightly blood-tinged sputum, cyanosis, and diaphoresis. The nurse notes wheezing, rales, and rhonchi throughout the lung fields. Which initial intervention is indicated?

administer morphine sulfate subcutaneously or IV

sit patient upright and administer 100% oxygen with mask

provide antibiotic therapy

administer furosemide IV

Explanation:

These signs and symptoms are consistent with acute pulmonary edema; and since the client is dyspneic and cyanotic, the nurse should immediately sit the patient upright and administer 100% oxygen per mask to relieve the patient's hypoxemia and achieve a PO_2 above 60%. Some patients may require BiPAP or endotracheal intubation and mechanical ventilation. Morphine sulfate (2 to 8 mg) may be administered subcutaneously or intravenously in severe cases. Other treatments

include loop diuretics to promote venous dilation and diuresis, nitrates, bronchodilators, digoxin (if tachycardia present), and ACE inhibitors to reduce afterload.

120.

Following percutaneous transluminal coronary angioplasty with right femoral access, the patient complains of right back and flank pain and non-specific complaints of feeling weak and dizzy. Her heart rate increases to 112/min and blood pressure is 78/52 mmHg. Based on these findings, the nurse should suspect

cardiac tamponade.

allergic reaction.

myocardial infarction.

retroperitoneal hemorrhage.

Explanation:

Signs and symptoms of retroperitoneal hemorrhage may be nonspecific, especially at first, but as blood accumulates, back and flank pain may occur. Pulse rate increases and blood pressure will fall as the patient becomes increasingly hypotensive. Hemoglobin may show an abrupt decrease. A CT scan of the abdomen should show the mass. This is a medical emergency, and the patient must be transferred immediately back to the cath lab for angiography to locate the site of perforation and leakage. A vascular closure device may be used, and/or a balloon inflated over the bleeding site to control bleeding.

121.

A patient who experienced chest trauma during an automobile accident shows signs of non-hemorrhagic cardiac tamponade and is to undergo pericardiocentesis. What position should the nurse place the patient in for the procedure?

supine, flat

right lateral side lying

upright at 45 degrees

upright at 90 degrees

Explanation:

When undergoing pericardiocentesis, the patient should be positioned upright at 45 degrees because this allows good visualization and easy access and brings the heart closer to the chest wall. Patients often receive atropine before the procedure to prevent vasovagal reactions. A nasogastric tube may need to be inserted if the patient has abdominal distention. After the needle is inserted, the obturator is removed and a syringe attached to aspirate blood or fluid. A sterile alligator clamp is attached from the needle to a precordial lead of the ECG for monitoring to ensure that the ventricle is not punctured.

122.

The nurse is conducting stimulation threshold testing for a patient with a temporary pacemaker. Consistent capture is regained at 2 mA. Based on this finding, the output should be set at

1-2 mA.

2-3 mA.

3-4 mA.

4-6 mA.

Explanation:

Stimulation threshold testing is conducted to determine the minimum output necessary to consistently capture the heart. Once the output for consistent capture is determined, the output should be set at 2 to 3 times this level, so if threshold testing shows consistent capture at 2 mA, the output should be set at 4 to 6 mA. The procedure for sensitivity testing is: first, verify paced rhythm, increasing rate temporarily if necessary, to override intrinsic rhythm; then watch monitor while slowly decreasing output and not when loss of capture occurs; gradually increase output until 1:1 capture resumes; and set output.

123.

A patient with Marfan syndrome is admitted with substernal pain, cough, strider, distention of neck veins, and edema of the upper extremities. The most likely cause is

tricuspid regurgitation.

thoracic aortic aneurysm.

pulmonic regurgitation.

aortic stenosis.

Explanation:

The symptoms are consistent with thoracic aortic aneurysm. Patients with Marfan syndrome are at risk for thoracic aortic aneurysms and should be monitored carefully to prevent rupture. Surgery is indicated for aneurysms of 5 cm or more. With MFS, the aneurysm usually occurs at the sinuses of Valsalva (aortic root) and in most cases is ascending with type A dissection. It the aneurysm is in the ascending aorta or arch; open surgical repair is indicated and carries a higher risk than repairs in the descending aorta. Beta-blockers may slow aneurysm dilation.

124.

A patient suffered smoke inhalation when a fire occurred while he was sleeping. Burned materials included wool carpets, furniture with polyurethane foam, and household plastics. The patient is

hypotensive and has altered mental status. Physical examination shows evidence of soot in the nares and mouth. Which of the following antidotes is most indicated?

hydroxocobalamin

sodium nitrite

atropine

oxygen therapy

Explanation:

Wool, plastics, and polyurethane foam produce cyanide gas when burned, so the patient is at risk for cyanide poisoning and should receive hydroxocobalamin as the antidote of choice. It is usually administered with sodium thiosulfate, which potentiates the effects. Hydroxocobalamin combines chemically with cyanide to form vitamin B_{12}, which can be excreted through the kidneys. Sodium nitrite can also be used for cyanide poisoning but has more adverse effects and is contraindicated with severe smoke inhalation.

125.

A patient with anoxic encephalopathy resulting from fat embolism exhibits flexor (decorticate) posturing. This indicates damage to which part of the brain?

upper pons

brainstem

midbrain

hemispheres

Explanation:

Flexor (decorticate) posturing indicates hemispheric damage. Brainstem damage results in flaccidity and areflexia while midbrain and upper pons damage results in extensor (decerebrate) posturing. Anoxic encephalopathy can occur within 5 minutes if the brain is without oxygenation. Absence of pupillary responses and elicited eye movements indicates severe brain damage. If there is damage to the frontal or occipital areas of the brain but the midbrain and pons are intact, horizontal movement of the eyes may be evident.

126.

A patient with unstable angina has continuous cardiac monitoring. Which of the following findings places the patient at highest risk for fatal or non-fatal myocardial infarction?

appearance of pathologic Q waves

T-wave inversion greater than 0.2 mV

transient ST-segment changes greater than 0.05 mV

slight elevation of Troponin T, between 0.01 and 0.1 ng/mL

Explanation:

Patients are at high risk for fatal or non-fatal MI if they have unstable angina and the following findings: ECG changes including transient ST-segment changes greater than 0.05 mV, persistent VT, and BBB; troponin T elevated to greater than 0.1 ng/mL; increased ischemic symptoms in previous 48 hours; rest pain longer than 20 minutes; pulmonary edema, new or increased MR murmur, S3 or increased rales; decreased BP; bradycardia or tachycardia; and advanced age (over 75). T-wave inversion, pathologic Q waves, and slight elevation of Troponin T (<0.1 ng/mL) are moderate risk factors.

127.

A patient with valvular disease has right ventricular hypertrophy and exhibits mild cyanosis, angina, dyspnea, heart murmur, and episodes of fainting. These signs and symptoms are characteristic of

pulmonic stenosis.

aortic stenosis.

mitral valve regurgitation.

mitral stenosis.

Explanation:

Pulmonic stenosis constricts blood flow from the right ventricle to the lungs, resulting in right ventricular hypertrophy as the pressure increases in the right ventricle. Respiratory symptoms develop as pulmonary blood flow is decreased, including dyspnea and mild cyanosis. Depending on the degree of stenosis, some patients may be asymptomatic, or symptoms may develop slowly and not be evident until adulthood. Treatment includes balloon valvuloplasty to separate valve cusps in younger children and pulmonary valvotomy for adults and older children.

128.

Indications of primary graft dysfunction in lung transplant recipients include

frequent oxygen desaturation.

chest pressure.

fever.

cough.

Explanation:

Primary graft dysfunction (reperfusion injury) is a major cause of illness and death in lung recipients with symptoms and treatment similar to ARDS. Indications include frequent oxygen desaturation, general malaise, increased dyspnea and work associated with the act of breathing, and intolerance to activity. Causes may include increased capillary permeability, interrupted lymphatic drainage, edema, and mismatch in compliance and vascular resistance between donor and recipient. Treatment includes high oxygen concentrations, decreased tidal volumes, PP ventilation for those intubated, and increased oxygen supplementation and pulmonary toileting for those extubated.

129.

An alert elderly patient has multiple bruises on the chest, back, abdomen, and both arms in various stages of healing and seems fearful and withdrawn when her daughter, who is her caregiver, is present. When questioned about the bruising, the patient states she "fell." The nurse should

question the daughter about the bruising.

report the observations to adult protective services.

ask the hospital social worker to speak with the patient.

report observations to administration.

Explanation:

While state laws may vary somewhat, nurses are mandated reporters for both child abuse and elder abuse, so the nurse should report the observations to adult protective services. Bruises on the parts of the body covered by clothes are characteristic of those inflicted by an abuser who wants to hide evidence of abuse. Arm bruises are often defensive. The nurse should not confront the suspected abuser, as this may put both the nurse and the patient at risk.

130.

A patient becomes very resistant and uncooperative during dressing changes, often yelling at the nurse, "You're hurting me!" even though the wound care is minimal. What is the best response to the patient?

"I'm being as gentle as I can."

"You had pain medication an hour ago, so you should not be having pain."

"What would you like for me to do differently?"

"Let's talk about how we can work together to make this easier for you."

Explanation:

The best approach is to attempt to collaborate with the patient, allowing the patient to feel more in control: "Let's talk about how we can work together to make this easier for you." There can be many reasons why patients are uncooperative and have an exaggerated response to pain. The patient may simply be frustrated, or the patient may be tired or fearful. It's possible that the pain medication isn't adequate, but the nurse needs to really listen to the patient to try to determine the best solution.

131.

Normal value for mixed venous oxygen saturation (SvO_2) is

96 to 100%.

60 to 80%.

45 to 65%.

75 to 95%.

Explanation:

SvO_2 measures oxygen saturation in mixed venous blood via a catheter in the pulmonary artery. Normal value is 60 to 80%. SaO_2 measures oxygen saturation in arterial blood with a gas analyzer. Normal value is 96 to 100%. SpO_2 measures oxygen saturation with a pulse oximeter. Normal value is also 96 to 100%. $ScvO_2$ measures oxygen saturation in mixed venous blood from the head, neck, arms and upper thorax per a fiber-optic catheter or central venous catheter. Normal value is greater than 70% and is usually 5 to 10% higher than SvO_2 value.

132.

Forty-eight hours after a subtotal gastrectomy, the patient's pulse has increased from a baseline of 72 to 118/min and blood pressure has fallen from 138/88 to 72/48 mmHg. Urinary output has diminished, and the patient's skin is cold and clammy. The nurse suspects hemorrhage. Which of the following findings is most indicative of extragastric hemorrhage?

abdominal pain

increased bilirubin

melena

clear NG aspirant

Explanation:

Extra gastric hemorrhage most often occurs 24 to 48 hours after surgery and may present with sudden onset of hypotension, tachycardia, and diminished urinary output. Peritoneal drains may show some bloody or blood-tinged discharged while NG aspirant remains essentially clear. Symptoms may mimic myocardial infarction. CT scan is used for diagnosis. Causes of bleeding include lacerated spleen, liver injury (from retractors), pancreatic bed hemorrhage, and improperly

secured vessels. If blood transfusions do not stabilize the patient, then exploratory laparotomy is indicated.

133.

A patient has undergone a subtotal gastrectomy for gastric cancer and is recovering well and progressing from clear liquids to full liquids and soft foods. What nutritional strategy is most likely to prevent or minimize dumping syndrome?

low fat, high protein, high carbohydrate

high fat, high protein, low carbohydrate

low fat, high protein, low carbohydrate

low fat, low protein, high carbohydrate

Explanation:

A high-fat, high-protein, and low-carbohydrate diet is recommended for patients after gastric surgery to prevent or minimize dumping syndrome. Carbohydrates are absorbed more quickly than fats or proteins, increasing dumping symptoms. Additionally, a high-carbohydrate diet may exacerbate the postprandial hypoglycemia that often occurs two to three hours after a patient eats because of the sudden bolus of high carbohydrates that enters the small intestine and triggers release of insulin. Lying down after eating helps to slow the movement of food through the GI tract, decreasing symptoms.

134.

A patient receiving maintenance lithium at 300 mg three times daily for bipolar disorder has developed vomiting, diarrhea, tinnitus, and tremors. The patient's blood level is 1.8 mEq/L. The initial response should be to

withhold lithium.

increase lithium dosage.

decrease lithium dosage.

maintain lithium dosage and provide an antipsychotic medication.

Explanation:

The patient is exhibiting signs of mild lithium toxicity. Symptoms of mild toxicity are evident with levels 1.5 to 2.5 mEq/L. The therapeutic level of lithium for maintenance therapy is 0.6 to 1.2 mEq/L and 1.0 to 1.5 mEq/L for acute episodes of mania. Lithium has a narrow therapeutic index and levels should be monitored weekly initially and then monthly with patients educated about signs of toxicity. More severe life-threatening symptoms (ECG abnormalities, seizures, coma) can occur with blood levels above 2.5 mEq/L.

135.

A patient has been receiving unfractionated heparin for five days and has onset of pain in left leg with unilateral edema, erythema, and pain on passive dorsiflexion. Prior to administration of heparin, the patient's platelet count was 160,000 but it is now 104,000 (a 35% reduction). The nurse should expect to

continue unfractionated heparin at same dose.

continue unfractionated heparin at higher dose.

discontinue unfractionated heparin and administer lepirudin or argatroban.

discontinue unfractionated heparin and replace with low-molecular weight heparin.

Explanation:

Although the patient's platelet count remains above 100,000, a reduction of 30% to 50% with evidence of thrombi and vascular occlusion is indicative of heparin-induced thrombocytopenia Type

II, which is an immune-mediated response to heparin. While most often associated with unfractionated heparin, it can also be caused by low-molecular-weight heparin, so the intervention is to immediately discontinue the heparin and administer lepirudin or argatroban. HIT Type II can be confirmed with the functional assays heparin-induced platelet aggregation (HIPA) and serotonin release assay (SRA). ELISA can be used to identify presence of HIT antigen.

136.

The primary problem with basing research on qualitative data is that qualitative data are

difficult to interpret.

subjective.

uninteresting.

difficult to describe graphically.

Explanation:

The primary problem with basing research on qualitative data is that the data are subjective, and objective data have more validity for research. However, both may provide valuable information. Qualitative data are usually described verbally or in graphic form. Gathering qualitative data can require considerable time because it may involve interviewing numerous participants. Quantitative data, which are described statistically, may be derived from surveys, questionnaires, and other methods of obtaining numerical data.

137.

A patient with an AVM had evidence of reperfusion bleeding during partial embolization, but the patient stabilized. During the postoperative period, the most critical concern is

maintaining blood pressure within established parameters.

monitoring arterial blood gases (ABGs).

monitoring electrolytes.

maintaining fluid balance.

Explanation:

The most critical concern after AVM repair (surgery or embolization) is reperfusion bleeding, so strict control of BP to prevent it from exceeding the maximum established (usually 140 systolic) must be maintained. As feeder arteries are occluded, blood is diverted into vessels that are maximally dilated and tissues that have often suffered from chronic ischemia, so the increased pressure from additional blood flow may cause leakage of blood from the vessels. To prevent reperfusion bleeding, AVM repair is often done in two to four stages with partial embolization or excision done at each stage.

138.

A 30-year-old patient is admitted to critical care with second and third degree burns to the right arm (posterior and anterior surfaces), left anterior arm, anterior face, and anterior chest. Utilizing the Rule of 9s, what percentage of total body surface area is injured?

40.5%.

22.5%

36%

27%.

Explanation:

The patient has burns covering approximately 27% of his body. The Rule of 9s is used to estimate total body surface area burned in order to calculate the need for fluid replacement and other treatments. Rule of 9s: each arm 9% (4.5% anterior and 4.5% posterior), each leg 18% (9% anterior and 9% posterior), groin area 1%, upper chest 9%, abdomen 9%, upper back 9%, lower back/buttocks 9%, head 9% (4.5% anterior and 4.5% posterior).

139.

A 40-year-old female patient complains of frequent epistaxis and blood in her urine. Petechial hemorrhages are noted on the lower legs and oral mucosa. A CBC shows that RBCs and WBCs are normal, but the platelet count is 40,000. The patient is diagnosed with idiopathic thrombocytopenia purpura. Based on the patient's symptoms, which of the following treatments is the patient most likely to receive?

observation only

IV Ig immunoglobulin

corticosteroids (oral)

splenectomy

Explanation:

While idiopathic thrombocytopenia purpura is often self-limiting, because the patient is exhibiting symptoms, this puts her at risk for more serious complications (such as intracerebral hemorrhage), so the usual initial treatment is a course of oral corticosteroids, which usually results in an increase of the platelet count to normal level within 2 to 6 weeks. If symptoms are severe, then IV Ig may be used to suppress the antibody response. High-dose IV methylprednisolone may also be administered. Following IV Ig or methylprednisolone, platelet transfusions are recommended. If no response to medical treatment, splenectomy may be considered.

140.

A 38-year-old patient with acute respiratory distress syndrome (ARDS) is placed on mechanical ventilation. The optimal setting for tidal volume for ARDS is usually

12 mL/kg predicted body weight.

10 mL/kg predicted body weight.

6-8 mL/kg predicted body weight.

4-5 mL/kg predicted body weight.

Explanation:

While at one time tidal volume for ARDS was set at 12 mL/kg predicted body weight (PBW), current studies indicate that 6 to 8 mL/kg PBW (low tidal volume ventilation) has a more protective effect on the lungs and reduces mortality rates. PEEP may need to be set higher than usual to prevent atelectasis. Initial settings: tidal volume of 8 mL/kg PBW; respiratory rate of 35/min; PEEP of 5 cmH_2O or higher; FiO_2 less than 70% when possible but high enough to maintain oxygen saturation of 88 to 95%; and tidal volume reduced to 7 mL/kg PBW and then 6 mL/kg PBW over 4 hours or less.

141.

A 56-year-old patient with COPD has arterial blood gases done on admission. ABGs are as follows: PaO_2 of 88 mmHg, pH of 7.28, $PaCO_2$ of 48 mmHg, and HCO_3^- of 23 mEq/L. Based on this profile, the patient is in

compensated respiratory acidosis.

uncompensated respiratory acidosis.

compensated metabolic acidosis.

uncompensated metabolic acidosis.

Explanation:

The patient is in uncompensated respiratory acidosis, indicating hypoventilation: PaO_2 of 88 mmHg (normal value 80 to 100) indicates the patient is not hypoxemic; pH of 7.28 (normal value 7.35 to 7.45) indicates acidosis since it is greater than 7.4; $PaCO_2$ of 48 mmHg (normal value 35 to 45) represents respiratory acidosis resulting from hypoventilation since the value if greater than 45 (less than 35 would represent respiratory alkalosis); HCO_3^- of 23 mEq/L (normal value 22 to 26) remains normal. Because both the pH and the $PaCO_2$ are abnormal, this indicates uncompensated ABGs, since the pH has not returned to normal level.

142.

A patient with diabetic ketoacidosis shows evidence of hypovolemic shock. What IV fluid is utilized initially to reverse dehydration?

1-1.5 L of 0.9% normal saline

3-4 L of 0.9% normal saline

1-2 L of 0.45% sodium chloride

1-2 L of 5% dextrose with 45% sodium chloride

Explanation:

Usually for severe dehydration related to DKA, 1 to 1.5 L of 0.9% normal saline with insulin is administered at the rate of 1 L/hour, after which serum sodium levels should be determined. If the serum sodium is low, IVs and insulin are continued with 0.9% normal saline at the rate of 4 to 14 mL/kg, but if sodium is normal or high, the IV fluids are switched to 0.45% sodium chloride at the rate of 4 to 14 mL/kg until serum glucose reaches 250 mg/dL. Then IV fluid is changed to 5% dextrose with 0.45% sodium chloride (150-250 mL/hr.).

143.

Following a craniotomy for removal of a meningioma anterior to the pituitary gland and optic chiasm, the patient develops pronounced diuresis and thirst. Laboratory findings include: serum sodium level of 150, serum osmolality of 304, urine osmolality of 290, and urine specific gravity of 1.004. Based on the patient's condition and laboratory findings, which pharmaceutical intervention is most indicated?

hypertonic saline solution

thiazide diuretics

desmopressin acetate

demeclocycline

Explanation:

These laboratory values are consistent with diabetes insipidus. Desmopressin acetate is used to increase water resorption in the nephron. Central DI often develops secondary to neurosurgery, traumatic brain injury, meningitis, and encephalitis. Inadequate amounts of vasopressin are secreted, resulting in dilute urine with decreased osmolality and specific gravity with frequent urination while serum osmolality and serum sodium increase, resulting in increased thirst. Thiazide diuretics are used with nephrogenic DI and hypertonic saline solution and demeclocycline with severe SIADH.

144.

The primary difference between hyperglycemic hyperosmolar nonketotic syndrome (HHNK) and diabetes ketoacidosis (DKA) is that

treatment options for HHNK and DKA are different.

HHNK does not involve breakdown of fat and DKA does.

HHNK involves overhydration and DKA dehydration.

insulin level is lower in HHNK than in DKA.

Explanation:

The primary difference between HHNK and DKA is that HHNK does not involve breakdown of fats (into ketones) and DKA does because some insulin production remains with HHNK although it is inadequate to prevent hyperglycemia (greater than 600 mg/dL). HHNK is a disease that occurs in those with diabetes and insulin resistance, leading to persistent hyperglycemia and osmotic diuresis. As fluid shifts from intracellular to extracellular spaces, glucosuria and dehydration cause hypernatremia and increased serum osmolality (greater than 350 mOsm/L). Treatment is similar to DKA: insulin and IV fluids.

145.

Which of the following is an example of informal collaboration?

team members discussing the best method of meeting a patient's needs

a nurse reporting a patient's concerns about upcoming surgery to the physician

a nurse asking a nurse on another unit about his experience with a procedure

a nurse asking another team member to assist with moving a patient

Explanation:

Asking a nurse on another unit about his experience with a procedure is an example of informal collaboration because the collaboration does not stem from established organization or protocol, such as teams or hierarchical structures. When members of a team help each other, this represents formal collaboration because that is the purpose of a team. Collaboration is a continuous process in nursing, occurring almost every time a healthcare provider interacts with other healthcare providers, patients, or family members. Both informal and formal collaboration may be equally valuable.

146.

The nurse is reviewing preoperative laboratory values. The nurse should alert the physician to which of the following values?

glucose level of 98 mg/dL

blood, urea, nitrogen (BUN) level of 26 mg/dL

creatinine level of 0.79 mg/dL

calcium level of 9.2 mg/dL

Explanation:

All of the laboratory values are within normal limits except for the BUN, which is elevated to 26 from a normal of 7 to 17 mg/dL (reference values may vary somewhat). While this is outside the normal range, it is usually evaluated with creatinine to determine if there is kidney damage, and the creatinine level is normal. BUN values may be elevated by dehydration and some commonly-used drugs, such as acetaminophen and ibuprofen.

147.

A patient has been stabilized after rupture of a cerebral aneurysm with a grade II subarachnoid hemorrhage and is scheduled for surgical repair within 24 hours of the rupture. However, the patient tells the nurse that he wants to wait until his family arrives from overseas in four days. Which of the following is the best response?

“You should discuss that with your surgeon.”

“Delaying surgery could be very dangerous.”