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by J B

Submission date: 06-Jul-2021 10:57AM (UTC-0400)
Submission ID: 1616388908
File name: Path_discussions_2.edited.docx (20.99K)
Word count: 1073
Character count: 5904

Discussion Questions

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Discussion Questions

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Prompt 1

People with COPD experience difficulties in breathing due to blockage of airways. The problems in breathing result in low oxygen levels in the blood, putting pressure on the heart in performing its function and the worst causes heart failure (Cazzola & Page, 2014). Blockages in the airways also cause hyperinflation of the lungs, increasing intrathoracic pressure and decreasing venous pressure. In turn, blood volumes in the ventricles reduce, impairing the left ventricle filling and causing left ventricular pressure (Cazzola & Page, 2014). Such complications of COPD are accelerated when a patient is involved with physical activities that go beyond their air intake limited by the COPD condition.

Prompt 2

Commonly used bronchodilators include Beta-agonists, anticholinergics, and theophylline. Bronchodilators relax the airway muscles to allow easy breathing for the patient. Increased airflow comes in hand with decreased hyperinflation, thus alleviating introthoracic pressure (Cazzola & Page, 2014). Specialists can also provide Mucolytics medicine and pulmonary rehabilitation as means of lessening the effects of COPD. Mucolytics aims at making the phlegm thinner for patients with thick phlegm to ease coughing and open up the lungs. On the other hand, pulmonary rehabilitation is a program designed to educate on care processes such as dieting and inform on exercises suitable for COPD patients. Notably, patients are advised to reduce or stop habits such as smoking if it's identified as the condition's primary source

Reference

Cazzola, M., & Page, C. (2014). Long-acting bronchodilators in COPD: where are we now and where are we going?. *Breathe*, *10*(2), 110-120.

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Prompt 1

Enalapril medication is usually used as a combination therapy for patients experiencing high blood pressure as well as left ventricular dysfunction together with heart failure. The treatment helps relax and widen blood vessels to lower blood pressure (McMurray et al., 2014). Enalapril dosage depends on what the doctor has prescribed, considering the severity of the patient's condition and other factors. The dosage can start at 5g per day and increase accordingly for blood pressure, but the maximum dosage is 40g per day. Mild side effects for Enalapril include dizziness, skin rashes and weakness, while severe effects include difficulties in breathing, yellowing of skin, fainting, among others.

Prompt 2

Hemodialysis, continuous renal replacement therapy (CRRT)and peritoneal dialysis are the commonly used types of dialysis. Hemodialysis involves using an artificial kidney called a hemodialyzer to extract waste from the blood (Chaturvedi, 2018). The doctor creates an entrance point in blood vessels in allowing blood flow to artificial kidney. Once filtered, the blood is returned to the body by use of a dialysis machine. Peritoneal dialysis involves filtering blood by the use of an implanted catheter in the abdomen. The catheter directs blood into the peritoneum and a special fluid called dialysate absorbs waste from the blood and the purified blood is then let out from the abdomen (Chaturvedi, 2018). CRRT uses tubing to pass blood through a filter and the purified blood is returned to the body.

References

Chaturvedi, A. (2018). Effect of medical nutrition therapy and lifestyle education on nutritional and health outcomes of CKD patients with and without dialysis.

McMurray, J. J., Packer, M., Desai, A. S., Gong, J., Lefkowitz, M. P., Rizkala, A. R., ... & Zile, M. R. (2014). Angiotensin–neprilysin inhibition versus enalapril in heart failure. *N Engl J Med*, *371*, 993-1004.

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Prompt 1

Type 1 diabetes mellitus is brought about by autoimmune destruction of cells beta cells over time. Type 2 DM is associated with insulin deficiency or insulin release coupled with insulin resistance (Smiley et al., 2011). The declining function of beta cells in type 2 DM finally fails in beta cells. Diabetic Ketoacidosis (DKA) is a diabetes complication whose genesis is insulin deficiency inhibiting glucose utilization as a metabolic fuel in the body cells (Smiley et al., 2011). Instead of glucose, the liver breaks down fats into ketones to be used as a metabolic fuel cell. Increased production of ketones causes more accumulation into the blood and urine, making it acidic.

Prompt 2

Treatment for DM aims to maintain normal blood sugars through interventions such as oral medication, insulin therapy, controlling diet and exercising. Diabetes patients, through self-management programs, are advised to monitor their day-to-day behavior such as level of stress and diet management to maintain normal glucose levels. In DKA, treatment involves fluid replacement, electrolyte replacement and insulin therapy (Smiley et al., 2011). Fluid replacement

aims at rehydrating the body due to lost fluids through urine, while electrolyte replacement administers electrolytes that were lowered due to insulin deficiency. Notably, insulin therapy restores glucose levels balanced in the body by reversing the processes that result in DKA.

Reference

Smiley, D., Chandra, P., & Umpierrez, G. E. (2011). Update on diagnosis, pathogenesis and management of ketosis-prone Type 2 diabetes mellitus. *Diabetes management (London, England)*, *1*(6), 589.

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Prompt 1

Ischemic stroke takes place when a blood clot restricts blood flow to brain. A clot can be formed in an artery that directs blood to the brain (thrombotic) or the clot may form in others parts of the body such as the heart (embolic stroke) (Grysiewicz et al. 2008). On the other hand, hemorrhagic stroke is caused by bleeding in the brain due to bursting of a weak blood vessel (Grysiewicz). A blood vessel might burst in the brain resulting in intracerebral hemorrhage or breaking might happen on the surface of the brain (subarachnoid hemorrhage). One distinctive symptom between the two strokes is that hemorrhagic stroke brings serious head pain, which is unlikely to occur in ischemic stroke.

Prompt 2

The tPA drug is used on patients with ischemic stroke to dissolve the blood clot- which is the main cause of the stroke. The medication is recommended to be administered within a 3-hour window to ensure better and effective recoveries. tPA is mostly administered intravenously for patients who make it to the hospital within the time window (Grysiewicz et al., 2008). Consequently, patients who have undergone surgery recently or have missed the 3hours period

can be given tPA directly through an intra-arterial approach (Grysiewicz). The science behind tPA is that it helps convert plasminogen to plasmin, an enzyme meant to break down the clot and ensure blood flow to the brain.

Reference

Grysiewicz, R. A., Thomas, K., & Pandey, D. K. (2008). Epidemiology of ischemic and hemorrhagic stroke: incidence, prevalence, mortality, and risk factors. *Neurologic clinics*, *26*(4), 871-895.

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