Presentation on Frank

 Name

 Professor

Course

Date

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**Introduction (Narrator’s Role)**

Frank is a businessman in the local town where he deals with lots of people and merchandisers which puts him under lots of stress. As Frank is driving home one night, he is involved in a near-fatal car crash. Upon further examination, Frank’s insulin levels are found to be far below normal levels. Additionally, Frank’s blood sugar levels are elevated. There are also high bile levels accompanied by severe stomach problems. To better understand the anatomy and physiology of Frank, we shall describe the organs located on the upper left side of the stomach, create a connection of the bile ducts and pancreas, describe the formation of bilirubin, look at bile circulation, and develop a hypothesis for Frank's condition.

 **Discussion**

**Nurse Practitioner and Patient Interaction**

Nurse: Hello, How are you today Mr. Frank?

Patient: I am fine thank you.

Nurse: I am going to check your vitals and run some few tests.

Patient: Okay

Nurse: Kindly explain what happened yesterday night.

Patient: I was driving back home after a long day at work. I am a businessman running a wide portfolio of businesses. The last few days have been particularly stressful with high demands to meet. I felt exhausted for most part of the day but I brushed it off. However, I felt dizzy followed by blurred vision. I can’t quite recall well what happened. I then heard a loud bang and regained my senses at the hospital.

Nurse: Oh, I am sorry. How do you feel now?

Patient: I am feeling relieved although I have some pains on my upper left stomach.

Nurse: When was the last time you ate?

Patient: I had breakfast today morning.

Nurse: Do you have any history of high blood pressure or diabetes?

Patient: Not really. I have a cousin suffering from diabetes.

Nurse: Any signs of dizziness?

Patient: Currently none.

Nurse: Okay, have a rest as we process your results. You will be fine.

**Scientific Steps Followed (Researcher)**

The process of finding a solution begins with the identification of a problem that a patient suffers from. The patient first is brought in for medication due to a health problem. Once the patient seeks healthcare, the step-by-step process for working a diagnosis begins. The first step is gathering of information through tests or physical examination and interviewing the patient. The information is also collected by looking at the patient’s clinical history. This is followed by an integration of the information, which can include consultation with other professionals for the purpose of understanding the problem and interpretation. The interpretation enables the determination of a hypothesis (BMJ, 2004) for there to be a working diagnosis. These are the steps that were followed for the Frank’s case.

**Nursing Theory**

The nursing theory that was applied is the patient-centered theory. This theory looks at promoting the individuals well-being by offering conditions that promote a good and conducive environment. The theory also advocates for group or team-based care that has a shared-goal with the patient as the focus. Through this process, the patient is able to develop a clearer picture of themselves which leads to improved self care (PrenHall, 2010). As such, the patient has increased self-understanding and better decision-making abilities. The nurse practitioner has an important role to play by being empathetic, being able to convey their accurate assessment of the patient, and enabling the patient to have a view of the impact of their own choices on their health. The nurse practitioner also enables the patient to have a better position for making decisions based on the feedback.

**Organs in the Upper Left Abdomen**

The abdomen is divided into four quadrants. Understanding the quadrants is important for finding where a stomach problem originates from (Arslan, n.d.). On the left quadrant, of the upper part of the stomach, there are several organs. The stomach is located in this section alongside the spleen, which cleans up blood, and a large portion of the pancreas, which regulates blood sugar and aids in digestion. The function of the stomach is to assist in the breakdown of food through the binary process of relaxation and contraction, to offer temporary storage for food, and allow for digestion to take place. The left side also hubs one of the kidney’s especially its left portion and the adrenal glands. The adrenal glands control blood sugar through the release of hormones and aids in the burning of fat and regulation of blood pressure. The other organs that are located on the upper left quadrant are the bottom of the colon and the splenic flexure which is the bent part that exists between the transverse colon and descending colon.

**Pancreatic and Bile Ducts**

The pancreas and bile ducts have a union through a tube known as the common bile duct. The common bile duct is a thin tube that connects several ducts. There are several miniature tubes in the liver which collect bile. The miniature ducts collect and form two main ducts. One of the ducts passes on the right hand side and is known as the right hepatic duct. The other passes on the left and is known as the left hepatic duct. Both the right and left join after exiting the liver and become the common hepatic duct. From the gall bladder, there is duct known as the cystic duct which meets with the common hepatic duct to form the common bile duct which proceeds to the pancreas where it joins the pancreatic duct.

**Formation of Bilirubin**

Bilirubin is formed through two main processes. In the spleen, bilirubin is formed through cellular heme metabolism (Kalakonda & Savio, 2018). This is a process that takes place in the cells of the spleen. An enzyme, heme oxygenase, acts on heme that is taken to the spleen cells. Through this process, there are some by-products: carbon monoxide which is excreted via lungs and chelated iron. Biliverdin is also a byproduct of this process and is further broken down by biliverdin reductase which releases bilirubin. Bilirubin in this form is known as unconjugated bilirubin which is transported to the liver for further synthesis to form conjugated bilirubin. In the liver, through the action of glucuronyl transferase enzyme, unconjugated bilirubin is transformed into conjugated bilirubin in the form of glucuronate.

**Bile Circulation**

The circulation of bile is known as enterophatic circulation. Cholesterol is metabolized by hepatocytes to form lipid-soluble acids. Through conjugation, these acids are transformed into water-soluble forms referred to as bile salts. They are then transported for storage in the gall bladder. Transportation of bile saltes is done via the common bile duct to the lower part of the duodenum during digestion. In the duodenum, a vast volume of the bile salts are recycled. There is also ionization which converts them to primary conjugated bile salts. In the lower colon and lower part of the small intestine, some of these ionized bile salts are acted on by bacteria to become secondary conjugated bile salts. Some are also converted to lipid-soluble bile salts. The liver, through the portal vein, received the bile salts where bile acids are extracted.

**Hypothesis for Frank’s Diagnosis**

From the medical data that is presented in regards to Frank, he most likely suffers from hyperglycemia which might result from liver dysfunction. Hyperglycemia results from a high level of blood sugar in the body due to a lack of enough insulin to synthesize it. This is evidenced through Frank’s insulin levels which are abnormally low. The liver is responsible for both insulin and bile functions. As such, evidence of both poor insulin levels and high bile levels suggest liver dysfunction. Liver dysfunction is where the liver fails to work properly. This leads to poor absorption of bile. As a result, there are resulting stomach problems that may cause pain and indigestion problems. The liver dysfunction means that the circulation of bile is not efficient leading to poor insulin synthesis and bile release and absorption.

 References

Arslan, E. O. (n.d.). Anatomy of the Abdominal Wall. Retrieved from http://eknygos.lsmuni.lt/springer/21/01-28.pdf

BMJ (2004). The clinical method is the scientific method applied to the care of a patient. *BMJ*; 328:0

Kalakonda, A., Savio, J. (2018). Physiology, Bilirubin. Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK470290/>

PrenHall (2010). Person-Centered Theory. Pearson Education Inc.