Esophageal Varices

Purpose

The purpose of this course is to accoplice health care providers (nurses) about the dangers a patient “faces” when diagnosed with esophageal varices.

Objectives

1. Understand the dangers of caring for patient with esophage varices.

2. Discuss the pathophysiology of esophageal varices.

3. Identify the causes of esophageal varices.

4. List important lab values to monitor with patient diagnosed with esophageal varices as a result of liver disease.

5. Described the signs and symptoms of esophageal varices.

6. Discuss screening method for patients diagnosed with esophageal varices.

7. Identify the prognosis of individuals diagnosed with esophageal varices.

8. Understand ways to prevent esophageal varices
Esophageal Varices

According to Wang et al., (2014) esophageal varices are abnormally enlarged submucosal veins within the lower esophagus that may easily rupture, leading to a dangerous esophageal hemorrhage. Esophageal varices most often result from portal hypertension due to liver cirrhosis. When normal flow of blood through the liver is prevented, the body sends the blood up through the esophagus causing ballooning in the veins (MedlinePlus 2013). The enlarged veins swell and they can rupture and bleed, putting patients’ lives at risk (NCBI 2013). Furthermore according to Merkel, et al., (2000) the larger the esophageal varices, the more dangerous they are, since large esophageal varices may cause a higher tension on variceal walls. Patients are likely to have recurrences of bleeding when the cause of the esophageal is as a result of liver disease. Health care providers should be watchful as an uncontrolled varices can lead to death (World Gastroenterology Organization, 2013).

Causes

The most common causes of esophageal varices is cirrhosis of the liver. However, any general chronic liver disease that causes healthy liver tissue to become scarred can lead to portal hypertension resulting in esophageal varices (Agustin, Gonzalez, & Genesca, 2010). Another cause of cirrhosis of the liver is schistosomiasis, a parasite that upon infection can damage the liver as well as other internal organs (Mayo Clinic, 2013); (World Gastroenterology Organization, 2013). Schistosomiasis is usually prevalent in most developing countries. Other less common causes of cirrhosis of the liver include: Budd-Chiari syndrome. Budd-Chiari syndrome occurs as a result of vein-
occlusion. The vein occlusion occurs because blood clots block the veins that remove blood from the liver and thrombosis where a blood clot that travels to the splenic vein can cause a varices (Mayo Clinic, 2013).

The key is for health care providers to understanding the predictors for esophageal variceal bleeding, and to identifying the at risk population for screening (Charuworn, and Cheung, 2006). It is essential for nursing staff, and the health care team to monitor lab values and report the follow lab abnormalities, and patient symptoms to a physician:

a. Aspartate aminotransferase
   1. AST
   2. SGOT)

b. Alanine aminotransferase
   1. ALT
   2. SGPT

The above liver enzymes are located within liver cells and if the liver is injured or damaged, the liver cells spill these enzymes into the blood, raising the AST and ALT enzyme blood levels indicating liver damage (Charuworn, and Cheung, 2006). Other important lab values, and patient symptoms to assess include:

a. Serum albumin
b. Portal vein diameter
c. PT/PTT
d. Platelet Counts
e. Abdominal girth (ascites)
f. Spleen Size
Symptoms

Signs, and symptoms of esophageal varices include but not limited to:

a. Paleness
b. Light-headedness or faint sensation
c. Dark/bloody stools
d. Bloody Stools
e. Symptoms of chronic liver disease
f. Bloody Emesis
g. Some patients with chronic liver disease and esophageal varices may not experience any symptoms at all (National Institute of Health, 2015).

Signs of esophageal varices include:

a. Bloody or black stool by rectal exam
b. Examine the patient for signs of any chronic liver illness
c. Check for rapid heart rate
d. Check for low blood pressure

Tests

There are two in-depth methods for a doctor to examine the issue internally. A nasogastric tube inserted into the nose and let down into the esophagus can check for symptoms of bleeding (NCBI 2013). However, if the patient has already been diagnosed with cirrhosis, a doctor may recommend an Esophagogastroduodenoscopy (EGD). This procedure uses a camera on a tube that is easily bent to see what is occurring in the
mouth, esophagus, stomach, duodenum, and small intestine (upper gastrointestinal tract).

This is a standard preventive measure to check for esophageal varices before uncontrollable damage is caused (NCBI 2013).

A computerized tomography (CT) scan or a magnetic resonance imaging (MRI) scan can be used to view the circulation of blood near the liver. CT is not a real option for displaying larger varices, but can serve as an alternative to endoscopy when the patient is not a viable candidate for that procedure (Mayo Clinic, 2013).

**Treatment**

The best course of treatment is to control and then stop the bleeding as unchecked bleeding can cause patients to bleed uncontrollably, go into shock, and die (NCBI 2013). If the bleeding is substantial, the patient should be placed on a ventilator to help the airways and control the flow of blood away from the lungs. Severe dangerous blood release from esophageal varices can be treated with blood clotting medication. Doctors can also perform band litigation, where an elastic band is used to isolate the bleeding vein and gain maneuverability over the release of blood (National Institute of Medicine, 2015). Vasoconstriction medication like vasopressin can be used to tighten blood vessels if the patient is a good candidate for this (NCBI 2013). Some professionals recommend vasoactive drugs like terlipressin, terlipressin Tg, terlipressin gg or somatostatin, to be dispensed upon suspicion of varicella bleeding (Agustin, Gonzalez, & Genesca, 2010). Studies examining this have shown that a combination of endoscopic therapy and drugs decreases bleeding risks and help to lower the rate of failure for treatments (Agustin, Gonzalez, & Genesca, 2010).
Another option to stop bleeding is a balloon tamponade (Sengstaken-Blakemore tube) where the insertion of a tube is placed down into the esophagus is then inflated to cause pressure and reduce bleeding. A procedure known as TIPS or Transjugular intrahepatic portosystemic shunt, helps to reroute any two veins that provide blood flow to and from the liver, thus making new connections for damaged veins. The TIPS procedure can decrease pressure in the veins and prevent bleeding episodes from happening again. (Agustin, Gonzalez, & Genesca, 2010).

If the bleeding is acute and the patient is not responding to other methods of treatment, emergency surgery may be called for. Either the esophagus may be removed or Portocaval shunts may be inserted. A liver transplant may be an option to address the standard cause of esophageal varices and is a method of “curing” as the return of standard blood flow would prevent the hypertension that triggers the illness (Mayo Clinic, 2013).

Screening

An upper gastrointestinal endoscopy is recommended for patients with cirrhosis of the liver. Upon performing the endoscopy if there are no varices in a patient diagnosed with cirrhosis, then they should repeat the gastrointestinal endoscopy within two years. If there are small varices without hemorrhaging patient will still need to be reexamined in two years, medium/large varices without hemorrhaging should begin medical treatment, and then any signs of hemorrhaging should receive necessary surgeries, medication, and therapies (World Gastroenterology Organization, 2013).

Patients with liver disease may be asked to eat foods that are rich in yeast, beans, meat (especially pork), and nut products. Because liver disease causes the body to become deficient in thiamine due to the inability of the liver to metabolize thiamine. A
normal functioning liver plays an important role in metabolizing nutrients. Nutrition is a key factor when caring for patient with cirrhosis of the liver.

**Prognosis**

Charuworn, and Cheung (2006); D'Amico, and De Franchis, (2003) illustrates that one of the dreaded but common complications in patients with end-stage liver disease is bleeding from esophageal varices, which, even with modern therapeutic interventions, carries a mortality rate of 20%. Wang et al., (2014) also supports that Cirrhosis sufferers develop esophageal varices at a rate of 8%, and bleeding is a common reoccurrence regardless of treatment because liver diseases typically have very difficult prognoses (NCBI 2013) (Mayo Clinic, 2013). Esophageal varices can lead to shock, various infections like pneumonia, peritonitis, and bloodstream infection when left untreated. Patients and their physicians must remain vigilant (NCBI 2013). Over 50% of patients hospitalized due to esophageal varices will be diagnosed with an infection (Agustin, Gonzalez, Genesca, 2010). The rate of mortality in patients with esophageal varices is high at 20-35%.

**Prevention**

The easiest way to prevent esophageal varices is to refrain from activities and behavior that could cause liver diseases (Agustin, Gonzalez, & Genesca, 2010). The best indicator of repeat incidences are the stage of liver disease in the patient; the more severe, the worse the complications (Agustin, Gonzalez, & Genesca, 2010). If a patient is diagnosed with cirrhosis or other liver illness, an endoscopist can perform an Upper Gastrointestinal endoscopy (UGIE) to look for esophageal varices that are developing.
The UGIE sets a high bar in diagnostics; however, there are many factors like edoscopist’s skill, availability, increased cost for patient, and potential to increase esophageal bleeding (Wang et al., 2014). According to Agustin, Gonzalez, & Ganesca, (2010) acute bleeding warrants the patient to be monitored in a hospital Intensive Care Unit. Often times about 40-50% of hemorrhaging varices end suddenly on their own without any therapeutic management (Agustin, Gonzalez, & Genesca, 2010).

**Conclusion**

When a patient has a diagnosis of cirrhosis, they must take great concern to follow up with a medical professional to be examined for related risks like esophageal varices. However the best solution is prevent liver damage as esophageal varices once diagnosed are often recurring and can worsen if the liver’s capabilities decrease. Additionally it is important for health care professionals to optimize endoscopic variceal screening by selecting patients who are at risk. Screening patients will most likely yield positive outcomes. Patients will benefits from the endoscopic procedure because the outcomes will minimize cost and potential complications (Charuworn, and Cheung, 2006).
References


