



Patient Important Gastrointestinal Bleeding in the Intensive Care Unit

The **gastrointestinal (GI) tract** is divided into the upper and lower GI tract. The upper GI tract includes the mouth, esophagus (food pipe), stomach, and duodenum (first part of the small intestine). The lower GI tract includes the rest of the small intestine, bowel (large intestine), and rectum. We will mainly focus on the **stomach**.

The inside of the stomach is very acidic because of the gastric juices it makes. The acid helps the stomach stay sterile between meals and protects it from bacteria, viruses and other organisms that we eat every day. Sometimes, the acidity of the stomach can become too high. Too much acidity can damage the stomach lining and cause **ulcers**. Ulcers can lead to bleeding in the stomach. Medications called **antacids** can make the stomach less acidic.

ICU patients are likely to develop stomach ulcers, which can cause bleeding. There are many reasons why they are likely to develop stomach ulcers. For example, if ICU patients are on a breathing machine for at least 48 hours or have low blood pressure, the stomach lining becomes weak, and the stomach can become more acidic than usual. Acidity that is too high in the stomach can lead to stomach ulcers. Antacid medication, such as pantoprazole is given to ICU patients to prevent ulcers. However, antacid medication can change a patient's natural defense against infections and can have side effects.

We are currently conducting a research study called, "**Re-Evaluating the Inhibition of Stress Erosions: The REVISE Trial.**" The REVISE study will look at the benefits and risks of pantoprazole in ICU patients who are on a breathing machine for at least 48 hours. We will look at whether pantoprazole can reduce the number of patients with GI bleeding and reduce the number of patients who die from GI bleeds (potential benefits of pantoprazole). We will also record the side effects of the medication (eg. lung infections, infectious diarrhea) (potential risks of pantoprazole). We will compare the patients that receive pantoprazole with those that do not receive pantoprazole and look at the benefits and harm of giving the medication. We want to answer the question, should doctors and nurses continue giving pantoprazole to ICU patients on a breathing machine?

Doctors and nurses know what characteristics of a patient's GI bleed are important to them. If there are changes to the patient's heart rate, blood pressure, or abnormal blood results - these are important signs that the doctors and nurses look for and are called **clinically important bleeding**. However, we are missing something very crucial. We don't understand what is important to the patients in the ICU and their families. This is referred to as **patient important bleeding**.

Now that you know more about GI bleeding we want to teach you about the different ways to find and treat a GI bleed.



TREATMENTS:

A GI bleed can be treated with the following:

Therapy	Purpose	How Often it is Necessary	Possible Adverse Effects or Discomforts
Antacid Drugs	To help heal the ulcers	ALMOST ALWAYS. Every day for 2-3 months to treat every bleed	SOMETIMES. Pneumonia (lung infection) VERY RARELY. Infectious diarrhea
Drugs to Increase Blood Pressure	To increase blood pressure when it is dangerously low	SOMETIMES. Every time blood pressure is dangerously low	COMMONLY. Very fast heart rate
Blood Transfusion	To replace lost blood	SOMETIMES. It depends on the amount of bleeding	VERY RARELY. Congestive heart failure (fluid buildup in the lungs because the heart has trouble pumping extra fluid) VERY RARELY. Lung inflammation
Surgery	To surgically remove the bleeding tissue	VERY RARELY. Only in the most serious bleeds	VERY RARELY. Risks of general anaesthetic, surgical complications

FINDING (AND TREATING) A GI BLEED:

To find where a GI bleed is coming from, the following tests can be done. These tests can lead to the treatment of the bleed:

Procedure	Purpose	How Often it is Necessary	Possible Adverse Effects or Discomforts
Diagnostic Endoscopy	To locate the source of the bleeding	COMMONLY. For bleeding that is severe	COMMONLY. Low blood pressure and drowsiness related to the sedation
Therapeutic Endoscopy	To try to physically stop the bleeding	COMMONLY. Whenever a serious cause of bleeding is found	VERY RARELY. Making the bleeding worse or accidentally making a hole in the stomach
Angiography	To find the site of bleeding more accurately	RARELY. For serious bleeding	VERY RARELY. Dye used to find the site of bleeding may cause damage to the kidneys
Angiography & Embolization (to create a blood clot)	To stop bleeding by creating a blood clot in the blood vessel	RARELY. For serious bleeding	VERY RARELY. Dye used to find the site of bleeding may cause damage to the kidneys, or the stomach lining may die from lack of blood supply caused by the clot

Now that you understand what a GI bleed is and how to find and treat it, we want to know what characteristics of a GI bleed are important to you!

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