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PURPOSE & OBJECTIVES

The purpose of Focused GI Assessment is to offer the healthcare provider an overview of basic gastrointestinal assessment including normal and abnormal findings.

After successful completion of this course, the participant will be able to:

1. Discuss the components of a focused gastrointestinal assessment.

2. Discuss specific assessment findings that are determined by the history and examination, including inspection, palpation, percussion, and auscultation.
INTRODUCTION

The processes that the gastrointestinal tract and its accessory organs play in the body are essential for life. The process of digestion supplies nutrients to each and every cell in our body. If there is a disruption in any of these mechanisms, the whole body suffers. This course will discuss specific gastrointestinal history questions and exam techniques for your adult patient. Physical exam techniques such as inspection, palpation, percussion, and auscultation will be highlighted. Additionally, throughout the course, you will learn how alterations in your assessment findings could indicate potential gastrointestinal problems.
FOCUSED GASTROINTESTINAL HISTORY

Adult Patient History

When conducting a focused gastrointestinal assessment on your patient, it is important to begin with a thorough history of abdominal or gastrointestinal complaints. You will need to elicit information about any experienced signs or symptoms of gastrointestinal disease or disorders. Gastrointestinal disease usually manifests as the presence of one or more of the following:

- Change in Appetite
- Weight gain or loss
- Dysphagia
- Intolerance to Certain Foods
- Nausea and Vomiting
- Change in Bowel Habits
- Abdominal Pain

**Appetite**

Ask your patients if they have had any changes in appetite. If they have, investigate further about the nature of the change. Loss of appetite (anorexia) occurs with gastrointestinal disease, side effects of medication, pregnancy, or with other physiologic or psychologic disorders (Jarvis, 1996).

**Weight Loss**

Ask your patients if they have had any change in weight. If they have, investigate how much weight they have lost or gained and in what time period. You will also want to know if the weight loss was intentional (due to dieting) (Jarvis, 1996).

**Dysphagia**

Ask your patients if they have had any difficulty swallowing and if they have, when it was first noticed. Often difficulty swallowing may point to a disorder of the throat or esophagus (Jarvis, 1996).

**Intolerance to Certain Foods**

Ask your patients if they have had any aversions or intolerance in eating specific foods and if so, which ones. Ask about symptoms they experience when eating these foods. Also, ask about the frequency of antacid use (Jarvis, 1996).

**Nausea and Vomiting**

Nausea and vomiting are side effects of many medications, a manifestation of many diseases, and occur frequently in early pregnancy. Ask your patients about the frequency of these symptoms. If vomiting is present, you will want to ask about the amount, frequency, color, and odor of the vomitus. Ask if there is any blood in the vomit or if the vomit appears to be like coffee grounds. Hematemesis, or blood in the vomitus, is a common symptom of gastric or duodenal ulcers and may also indicate esophageal varices (Jarvis, 1996). Coffee ground emesis indicates an “old” gastrointestinal bleed. The old, partially digested blood appears to look like coffee grounds. Nausea and vomiting may also indicate food poisoning. Therefore, questions about types of food eaten in the past 24 hours should be asked.
**Change in Bowel Habits**

The frequency, color, and consistency of bowel movements should be assessed. Particular emphasis should be placed on changes in bowel habits. Also, assess the use of laxatives at this time. Black, tarry stools may indicate an upper gastrointestinal bleed or may simply be from the ingestion of iron supplements (Jarvis, 1996). Bright red blood in the stools may indicate hemorrhoids, or localized lower gastrointestinal bleeding. Currant jelly stools are usually foul smelling and resemble maroon/purple colored jelly. The presence of currant jelly stools indicates a massive bleeding episode and the patient’s hemodynamic status must be assessed quickly (Agone, et al., 1997).

**Abdominal Pain**

Have your patient point to the exact spot of abdominal pain. Abdominal pain is usually visceral, parietal, or referred. Visceral pain is usually dull, crampy, squeezing, and may be located over an abdominal organ. Parietal pain is usually from inflammation over the peritoneum. Peritoneal inflammation usually indicates an underlying emergency and should be assessed quickly. Parietal pain is usually intense and aggravated by extension of the lower extremity, coughing, or eliciting rebound tenderness. Referred pain occurs with specific gastrointestinal disorders such as appendicitis (umbilical pain in early stages), gall bladder disease (referred to right upper scapula), and pancreatitis (referred to the mid-back).

In general, the pneumonic, PQRST, is very useful in assessing abdominal pain and other gastrointestinal symptom, such as distention, nausea, and vomiting. It provides a methodology in which communication to other healthcare providers will be most efficient and informative. Assess the following characteristics with each new pain or symptom report and following any intervention (Shaw, 1998):

- **Provocative or Palliative:** What makes the pain or symptom(s) better or worse?
- **Quality:** Describe the pain or symptom(s)
- **Region or Radiation:** Where in the body does the pain or symptom(s) occur? Is there radiation or extension or the pain or symptom(s) to another area of the abdomen?
- **Severity:** On a scale of 1-10, (10 being the worst) how bad is the pain or symptom(s)?
- **Timing:** Does it occur in association with something else? (i.e. eating, exertion, movement)

After eliciting information about any experienced signs or symptoms of gastrointestinal disease, ask about their past abdominal or gastrointestinal history, medications, and nutritional status.

**Past Abdominal or Gastrointestinal History**

Ask about any past history of gastrointestinal disorders such as ulcers, gall bladder disease, hepatitis, appendicitis, hernias, past abdominal surgeries, any abdominal problems after the surgery, and abdominal x-rays or tests and their results (Jarvis, 1996).
Medication History

Many medications produce gastrointestinal symptoms. For example, aspirin and non-steroidal anti-inflammatory drugs (NSAIDs) may increase the likelihood of gastrointestinal bleeding. Almost every class of drugs has the potential for gastrointestinal side effects. Most of the side effects include nausea, vomiting, diarrhea, and/or constipation. You may ask about the frequency and duration of alcohol and cigarette consumption at this time. Alcohol can cause liver cirrhosis and esophageal varices. Cigarette smoking leads to gastric reflux and gastric ulcers.

Nutritional Status

Assessing nutritional status of your patients is important for several reasons. A thorough nutritional assessment will identify individuals at risk for malnutrition and provide baseline information for nutritional assessments in the future. Some of your patients that will require a thorough nutritional assessment include those patients with:

- Recent unintentional weight loss
- Chemotherapy or radiation
- Recent weight gain
- Food allergies or intolerance
- Decreased appetite
- Multiple medications
- Taste alterations
- Dieting history
- Difficulty chewing or swallowing
- Vomiting
- Mobility problems
- Diarrhea
- Inability to feed self
- Recent surgery or major illness or injury
- Substance abuse
- Chronic conditions
- Potential for social isolation
- Low income

(Jarvis, 1996; Shaw, 1998)

The Physical Exam

Inspection

When assessing the abdomen, it is important to document where you note the physical exam finding. The abdomen can be divided into four or nine quadrants as described below:

![Abdominal Quadrants Diagram]
With your patient in the supine position, inspect for bulges, masses, hernias, ascites, spider nevi, veins, pulsations or movements, and the inability to lie flat. Normally, blood vessels are not evident on the abdomen. They may be present in the elderly or pregnant client due to the loss of subcutaneous fat in these populations. During inspection, you may also ask your patient to lift their head slightly, if you notice a protrusion around the umbilicus or any incisions, a hernia may be present (Agone, et al., 1997).

**Auscultation**

You should always auscultate after inspection, and before percussion or palpation, so you do not produce false bowel sounds through percussion or palpation. Bowel sounds echo the underlying movements of the intestines. You normally hear high-pitched clicking and gurgling sounds every 5 to 15 seconds. It is suggested that you listen to bowel sounds for a full minute before determining if they are normal, hypoactive, hyperactive or absent. Refer to the following table to see how different bowel sounds are produced and what they may indicate.

<table>
<thead>
<tr>
<th>Bowel Sound</th>
<th>How it is Produced</th>
<th>Possible Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Bowel Sounds</td>
<td>Intestines transporting fluid and digested food through intestinal lumen at normal rate</td>
<td>Normally functioning intestine</td>
</tr>
<tr>
<td>Hypoactive Bowel Sound</td>
<td>Intestines transporting fluid and digested food through intestinal lumen at a decreased rate probably due to inactivity of smooth muscle in the bowel</td>
<td>Paralytic ileus Peritonitis Decreased bowel motility Late intestinal obstruction</td>
</tr>
<tr>
<td>Hyperactive Bowel Sound</td>
<td>Intestines transporting fluid and digested food through intestinal lumen at an increased rate probably due to rapid passage of air and fluid through the intestines</td>
<td>Diarrhea Early intestinal obstruction</td>
</tr>
<tr>
<td>High-pitched Rushing Sounds</td>
<td>Intestinal straining to push fluid and air past an obstruction</td>
<td>Intestinal obstruction</td>
</tr>
<tr>
<td>High-pitched Tinkling Sounds</td>
<td>Intestinal fluid and/or air under pressure</td>
<td>Dilated bowel loops Fecal impaction</td>
</tr>
<tr>
<td>Absent Bowel Sounds</td>
<td>Absence of intestinal motility Ominous finding</td>
<td>Peritonitis Late Obstruction Perforation Trauma</td>
</tr>
<tr>
<td>Abdominal Bruits</td>
<td>Wooshing sound over an artery from increased turbulence of blood flow in that artery</td>
<td>Aneurysm Thin, emaciated patient Renal artery stenosis</td>
</tr>
</tbody>
</table>

(Agone, et al., 1997; Jarvis, 1996; Shaw, 1998)
**Percussion**

Percussion is used to elicit tenderness or sounds that give clues to underlying problems. When percussing directly over suspected areas of tenderness, monitor the patient for signs of discomfort. Percussion requires skill and practice. Shaw (1998) best describes the method of percussion, in *Assessment Made Incredibly Easy*.

> “Press the distal part of the middle finger of your non-dominant hand firmly on the body part. Keep the rest of your hand off the body surface. Flex the wrist, but not the forearm, of your dominant hand. Using the middle finger of your dominant hand, tap quickly and directly over the point where your other middle finger contacts the patient’s skin, keeping the fingers perpendicular. Listen to the sounds produced.” (p. 27).

When examining the abdomen, percuss for general tympany, liver span, and splenic dullness. Tympany should be the predominant sound when percussing the abdomen. Air “floats” to the top of the abdomen in the supine position and tympany reflects this drum-like sound (Jarvis, 1996). Dullness is usually heard over solid organs or masses such as the liver, spleen, or a full bladder (Shaw, 1998).

Costovertebral angle tenderness is elicited when the patient is in a standing or upright position. Place the palm of your non-dominant hand near the posterior costovertebral margin over the kidney. Gently, but firmly, tap on your hand with the fist of your other hand. This normally does not produce any tenderness. If tenderness is present, a urinary tract infection or kidney inflammation may be present.

To determine if abdominal distention is due to fluid or air, you may want to ask a nursing assistant or another nurse to assist you in percussing a fluid wave. When percussing a fluid wave, your assistant should have her arm and hand along the mid-line of the patient’s abdomen, with the patient in the supine position. Their arm should be placed firmly on the abdomen to prevent the transmission of fat waves. You should then place your palm of one of your hands in the lateral lumbar region of the patient’s abdomen. With your other hand, quickly pat or tap the other lateral lumbar region of your patient’s abdomen. If a fluid wave is present, as with ascites, you will feel the resulting wave with your opposite hand. If the distention is due to air, you will not feel any wave (Agone, et al., 1997; Jarvis, 1996).

**Palpation**

Palpation is another commonly used physical exam technique that requires you to touch your patient with different parts of your hand using different strength pressures. During light palpation, you press the skin about ½ inches to 3/4 inch with the pads of your fingers. When using deep palpation, use your finger pads and compress the skin about 1½ to 2 inches. Palpation allows you to assess for texture, tenderness, temperature, moisture, pulsations, masses, and internal organs (Shaw, 1998). Normally, you should elicit no tenderness on either light or deep palpation of the abdomen. If inguinal lymph nodes are palpated, they should be small, and freely moveable. When palpating the abdominal region be sure to:

- Palpate lightly then deeply noting any muscle guarding, rigidity, masses or tenderness.
- Palpate tender areas last.
- Palpate the liver margins (often it is not palpable). Normal liver span is 12.5 cm. The top border generally at the 5th rib, midclavicular line.
- Palpate the spleen (enlargement occurs with mononucleosis and trauma). Normally the spleen is not palpable. Use light palpation for the spleen as it can be easily damaged.
- Palpate the kidneys (enlargement may indicate a mass).

(Agone, et al., 1997; Jarvis, 1996; Shaw, 1998)
**Assessing Abdominal Pain**

History is extremely important in assessing abdominal pain. There are however, a few physical exam techniques that can be used to assess acute abdominal pain. These are the iliopsoas muscle test, obturator test, and Blumberg test (Jarvis, 1996).

**Iliopsoas Muscle Test**

The iliopsoas muscle test is used most often when acute abdominal pain is present and appendicitis is suspected. When your patient is lying in the supine position, ask him or her to lift their right leg straight up, flexing only at the hip. Push down on the lower part of the thigh when your patient is trying to hold their leg up. If the patient feels pain in the iliopsoas muscle (the right lower quadrant of the abdomen) the test is positive and may indicate a perforated or inflamed appendix (Jarvis, 1996).

**Obturator Test**

The obturator muscle test is also performed when acute abdominal pain is present and appendicitis is suspected. When your patient is lying in the supine position, ask him or her to lift their right leg straight up, flexing at the hip, and 90 degrees at the knee. Hold the ankle and rotate the leg internally and externally. If the patient feels pain in the area of the internal obturator muscle the test is positive and may also indicate a perforated or inflamed appendix (Jarvis, 1996).

**Blumberg Sign**

Blumberg Sign is also known as rebound abdominal tenderness. Choose a site away from the suspected area of tenderness. Holding your hand 90 degrees to the abdomen press inward, deeply then release quickly. Pain on release of pressure is an indicator of peritoneal irritation (Jarvis, 1996).
Assessing & Interpreting Associated Laboratory Values

There are many common lab values that will help you in your assessment of your patient’s gastrointestinal system and accessory organs. Lab values should not be looked at individually, but rather in the context of a complete abdominal history and examination. The following table illustrates some abnormal lab values and their possible gastrointestinal disturbance.

<table>
<thead>
<tr>
<th>Lab</th>
<th>Normal Value</th>
<th>Alteration</th>
<th>Potential Gastrointestinal Cause of Abnormal Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lipase</td>
<td>7-60 u/L</td>
<td>↑</td>
<td>Pancreatitis</td>
</tr>
<tr>
<td>Amylase</td>
<td>30-170 u/L</td>
<td>↑</td>
<td>Pancreatitis</td>
</tr>
<tr>
<td>Calcium</td>
<td>8.5-10.3 mg/dL</td>
<td>↓</td>
<td>Pancreatitis, Malnutrition</td>
</tr>
<tr>
<td>Platelets</td>
<td>130-400 x 10³/mm³</td>
<td>↓</td>
<td>Liver Dysfunction, Cirrhosis, Hepatitis, GI Bleed</td>
</tr>
<tr>
<td>AST</td>
<td>&lt; 42 u/L</td>
<td>↑</td>
<td>Liver Dysfunction, Cirrhosis, Hepatitis</td>
</tr>
<tr>
<td>ALT</td>
<td>&lt; 48 u/L</td>
<td>↑</td>
<td>Liver Dysfunction, Cirrhosis, Hepatitis</td>
</tr>
<tr>
<td>Fibrinogen</td>
<td>200-400 mg/ dL</td>
<td>↓</td>
<td>Liver Dysfunction, Cirrhosis, Hepatitis</td>
</tr>
<tr>
<td>Prothrombin Time (PT)</td>
<td>10.0-12.5 sec</td>
<td>↑</td>
<td>Liver Dysfunction, Cirrhosis, Hepatitis</td>
</tr>
<tr>
<td>Albumin</td>
<td>3.5-5.0 g/dL</td>
<td>↓</td>
<td>Liver Dysfunction, Cirrhosis, Hepatitis, Malnutrition</td>
</tr>
<tr>
<td>Bilirubin</td>
<td>≤ 1.3 mg/dL</td>
<td>↑</td>
<td>Liver Dysfunction, Cirrhosis, Hepatitis, Cholecystitis</td>
</tr>
<tr>
<td>Ammonia</td>
<td>0.17-0.80 mcg/mL</td>
<td>↑</td>
<td>Liver Failure</td>
</tr>
<tr>
<td>Hemoglobin</td>
<td>12.0-17.2 g/dL</td>
<td>↓</td>
<td>GI Bleed, Hemorrhagic Pancreatitis</td>
</tr>
<tr>
<td>Hematocrit</td>
<td>35-50%</td>
<td>↓</td>
<td>GI Bleed, Hemorrhagic Pancreatitis</td>
</tr>
<tr>
<td>Electrolytes</td>
<td>variable</td>
<td>↑</td>
<td>Hemoconcentration in early GI Bleed or Hemorrhagic Pancreatitis</td>
</tr>
<tr>
<td>BUN</td>
<td>7-30 mg/dL</td>
<td>↑</td>
<td>Hemoconcentration &amp; absorption of protein (blood) in GI Bleed</td>
</tr>
<tr>
<td>WBC</td>
<td>3.8-10.8 x 10³/mm³</td>
<td>↑</td>
<td>Infection of Stress Response of Pancreatitis, GI Bleed</td>
</tr>
</tbody>
</table>

(Merck Manual Online, 2004)

*Normal lab value reference ranges differ between labs and institutions. Check with your facility for normal ranges.
CONCLUSION

Digestion, transport, and absorption are the processes by which the digestive system supplies nutrients to each and every cell of our body. If there is a disruption to this process, the whole body suffers. By asking specific gastrointestinal history questions and performing focused abdominal exam techniques for your adult patient, you will be able to assess for the slightest changes in gastrointestinal function. Alterations in your gastrointestinal assessment findings could indicate potential problems. Being knowledgeable about the focused, gastrointestinal assessment will allow you to intervene quickly and appropriately for gastrointestinal disorders.

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