Chapter 32 Gastroenterology

General Pathophysiology

General Risk Factors for GI emergencies:
- Excessive ________________________________ Consumption
- Excessive Smoking
- Increased ________________________________
- Ingestion of Caustic Substances
- Poor Bowel Habits

Emergencies
- Acute emergencies usually arise from chronic underlying problems.

GI Pain
- Pain is the ________________________________ of the acute abdominal emergency
- Acute abdominal pain is normally NOT treated with ________________________________ medications in EMS as it may mask diagnostic evaluations

Types of Abdominal Pain
- ________________________________ Pain: dull, poorly localized
  - Originates in hollow organs such as gallbladder or appendix
  - Normally caused by inflammation, distention, or ischemia
- ________________________________ Pain: sharp and localize
  - Travels along a definite neural route to the spinal column
  - Results from bacterial and chemical irritation
  - Can lead to ________________________________

Types of Abdominal Pain
- ________________________________ Pain: originates in an area other than where it is felt
  - Abdominal aortic aneurism: felt between the shoulder blades
  - Diaphragm injury: felt in ________________________________ or shoulders
  - Appendicitis: felt around ________________________________

Focused History & Physical Exam

Scene Size-up & Primary Assessment:
- Scene clues.
- Identify and treat life-threatening conditions.

Focused History
- Obtain ________________________________ History.
- Obtain OPQRST History.
  - Associated symptoms
    - ________________________________ negatives

General Assessment

Physical Exam:
- General assessment and vital signs
- Abdominal assessment
  - Inspection, Auscultation, and Palpation
    - ________________________________ Sign: discoloration around umbilicus
General Treatment
- Maintain the airway.
- Support breathing.
  ◦ High-flow oxygen or assisted ventilations.
- Maintain circulation.
- Monitor vital signs and __________________________ rhythm.
- Establish IV access.
- Transport in position of comfort.

Upper Gastrointestinal Bleeding
Causes:
◦ Peptic Ulcer Disease
◦ Gastritis: inflammation of the __________________________ lining
◦ Vessel Rupture
◦ Mallory-Weiss __________________________ : lacerated esophagus secondary to vomiting
◦ Esophagitis: inflammation of the esophagus
◦ Duodenitis: inflammation of the __________________________

Upper Gastrointestinal Bleeding
Signs & Symptoms:
◦ General abdominal discomfort
◦ Hematemesis and __________________________
◦ Classic signs and symptoms of shock
◦ Changes in __________________________ vital signs

Treatment
◦ Follow general treatment guidelines.
  - Begin volume replacement using 2 large-bore IVs.
  - Differentiate life-threatening from __________________________ problem.

Esophageal Varices
Cause by Portal __________________________:
◦ Chronic alcohol abuse and liver cirrhosis
◦ Ingestion of __________________________ substances

Esophageal Varices
Signs & Symptoms
◦ Hematemesis, __________________________ (inability or difficulty to swallow)
◦ Painless Bleeding
◦ Classic Signs of Shock

Treatment
◦ Follow General Treatment Guidelines.
  ◦ Aggressive Airway Management
  ◦ Aggressive __________________________ Resuscitation

Esophageal Varices
Prehospital placement of _______________ tubes and esophageal airways should be avoided in cases of suspected esophageal varices.

14 Acute Gastroenteritis
Cause:
⊙Damage to Mucosal GI Surfaces
  - Pathologic inflammation causes hemorrhage and erosion of the mucosal and submucosal layers of the GI tract.
Risk Factors:
● Alcohol and tobacco use
● Chemical ingestion (______________, chemotherapeutics)
● Systemic infections

15 Acute Gastroenteritis
Signs & Symptoms
⊙__________ Onset of Severe Vomiting and Diarrhea
⊙Hematemesis, Hematochezia, Melena
⊙Abdominal Pain
⊙Classic Signs of ________________
Treatment
⊙Follow General Treatment Guidelines.
⊙Fluid Volume Replacement.
⊙Consider Administration of ________________.

16 Gastroenteritis
● Similar to Acute Gastroenteritis
⊙Long-Term Mucosal Changes or Permanent Damage.
  - Primarily due to ________________________________ infection.
  - More frequent in developing countries.
⊙Follow General Treatment Guidelines.

17 Gastroenteritis
● Most cases of gastroenteritis are ________________________________ . Patients with ________________________________ gastroenteritis tend to be considered more ill than those with viral gastroenteritis.

18 Peptic Ulcers
Pathophysiology:
⊙Erosions caused by gastric ________________________________
⊙Terminology based on the portion of tract affected.
⊙Causes:
  - NSAID Use
  - ________________________________ /Tobacco Use
  - H. pylori

19 Peptic Ulcers
Signs & Symptoms:
⊙Abdominal Pain
⊙Observe for signs of ________________________________ rupture.
  - Acute pain, hematemesis, melena
Treatment:
Follow general treatment guidelines.
Consider administration of ___________________________ blockers and antacids.

20 Lower Gastrointestinal Bleeding
Pathophysiology:
- Bleeding distal to the ligament of ___________________________ (supports the duodenoejunal junction)
- Causes
  - Diverticulitis
  - ___________________________ lesions: (Ulcerative Colitis, Crohn’s Disease)
  - Rectal lesions
  - Inflammatory ___________________________ disorder

21 Lower Gastrointestinal Bleeding
General Signs & Symptoms
- Determine acute vs. ___________________________.
- Quantity/color of blood in ___________________________.
- ___________________________ pain
- Signs of shock.
Treatment:
- Follow general treatment guidelines.
  - Establish IV access with large-bore catheter(s).

22 Diverticulitis
- Pathophysiology
  - Inflammation of small ___________________________ in the mucosal lining of the intestinal tract.
  - Common in the ___________________________.

23 Diverticulitis
Signs & Symptoms:
- Abdominal pain/ ___________________________.
- Fever, nausea, ___________________________.
- Signs of lower GI bleeding.
Treatment:
- General treatment guidelines.

24 Ulcerative Colitis
- Pathophysiology
  - Causes ___________________________
  - Creates ulcers along colon
- Signs & Symptoms
  - Abdominal Cramping
  - Nausea, Vomiting, Diarrhea
  - ___________________________ or Weight Loss
- Treatment
  - Follow general treatment guidelines.

25 Crohn’s Disease
Pathophysiology:
- Inflammatory bowel disorder associated with the small
  intestinal tract.
- Causes unknown.
- Tends to run in a family history.
- Most prevalent in white females, those under stress, and in the
  elderly population.
- Can affect the entire GI tract.

Crohn's Disease
- Pathologic inflammation:
  - Damages the intestinal lining.
  - Hypertrophy and fibrosis of underlying muscle.
  - Granulomas: grooves or tears
  - Fistulas: abnormal connections or passageways

Crohn's Disease
Signs and Symptoms
- Difficult to differentiate.
- Clinical presentations differ drastically.
- GI bleeding, vomiting, diarrhea.
- Abdominal pain/cramping, fever, loss of weight.
- Treatment is to follow general treatment guidelines.

Keys to GI Hemorrhage
- Regardless of the cause, GI hemorrhage can be a
  life-threatening condition and difficult to control.
- The key to management is to recognize the indicators early and treat the condition before it worsens.
- Though diagnosis of exact cause is difficult, if not impossible, in the pre-hospital setting, aggressive examination and care can make a major difference in the outcome of the patient.

Hemorrhoids
Pathophysiology:
- Mass of swollen veins in anus or rectum.
- Idiopathic.
- Signs & Symptoms:
  - Bright red bleeding and painful stools.
  - Consider GI bleeding.
- Treatment
  - General treatment guidelines.

Bowel Obstruction
Pathophysiology:
- Blockage of the intestinal space of the small or large intestines.
Hernias
Foreign bodies, tumors, bowel infarction

Bowel Obstruction
Signs & Symptoms:
- Decreased Appetite, Fever, Malaise
- Nausea and Vomiting
  - Vomitus often contains bile and/or looks and smells like
    __________________________________________________
- Diffuse Visceral Pain, _________________________________ Distention
- Signs & Symptoms of _________________________________
Treatment
- Follow general treatment guidelines.

Accessory Organ Diseases
- GI Accessory Organs
  - Gallbladder
  - Pancreas
  - Vermiform _________________________________

Appendicitis
Pathophysiology:
- Inflammation of the vermiform appendix.
- Frequently affects _________________________________ children and young adults.
- Lack of treatment can cause rupture and subsequent _________________________________.

Appendicitis
Signs & Symptoms:
- Nausea, vomiting, and _________________________________-grade fever.
- Pain localizes to RLQ (_______________________________ point).
Treatment
- Follow general treatment guidelines.

Appendicitis

Cholecystitis
Pathophysiology:
- Inflammation of the _________________________________
- Cholelithiasis (gall stones)
- Chronic Cholecystitis
  - _________________________________ infection
- Acalculus Cholecystitis
  - Burns, _________________________________, diabetes
  - Multiple organ failure

Cholecystitis

Cholecystitis
Signs & Symptoms:
URQ Abdominal Pain
- ________________________________ sign (pain caused when an inflamed gallbladder is palpated by pressing under the right costal margin)
- Often refers to right shoulder
Nausea, Vomiting
History of ________________________________
Treatment:
Follow general treatment guidelines.

Pancreatitis
Pathophysiology:
Inflammation of the ________________________________
- Classified as metabolic, mechanical, ________________________________ , or infectious based on cause.
- Common causes include alcohol abuse, ________________________________, elevated serum lipids, or drugs.

Pancreatitis
Signs & Symptoms
- ________________________________ Pancreatitis
  - Epigastric Pain, Abdominal Distention, Nausea/Vomiting
- ________________________________ Pancreatitis
  - Refractory Hypotensive Shock and Blood Loss
  - Respiratory Failure
  - Treatment: Follow general treatment guidelines

Hepatitis
Pathophysiology:
Injury to ________________________________ Cells
- Typically due to inflammation or infection.
Types of Hepatitis
- Viral hepatitis (A, B, C, D, and E)
  - ________________________________ hepatitis
  - Trauma and other causes

Hepatitis
- Hepatitis A (HAV): ________________________________ hepatitis
  - Spread by oral, fecal route
- Hepatitis B (HBV): Serum hepatitis
  - Bloodborne pathogen
- Hepatitis C (HCV):
  - Blood to ________________________________

Hepatitis
- Hepatitis D (HDV): less common
  - Pathogen is ________________________________ until activated by HBV
- Hepatitis E (HEV): ________________________________ infection
  - Caused epidemics in Africa, Mexico and other 3rd world countries

Hepatitis
Signs & Symptoms:
• S/S relative to severity of disease
• URQ abdominal tenderness
• Loss of ____________________________, weight loss, malaise
• Clay-colored stool, ____________________________, scleral icterus
  (yellowish color in whites of the eyes)
• Nausea/vomiting

Treatment
• Follow general treatment guidelines.
  - Use ____________________________ and follow BSI precautions

Important Points
• GI pain may be of ____________________________ origin. Always apply the
  heart monitor and do a 12-lead!
• N/V can lead to profound ____________________________ (hypovolemic
  shock). Do tilt test and give fluids if positive!
• ____________________________ the abdomen
• Don’t blow GI problems off