Gastrointestinal Motility Problems in Critically Ill Patients

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KEYWORDS

• Gastrointestinal motility • Gastroparesis • Ileus • Toxic megacolon • Critical care • Nursing care

KEY POINTS

- Gastrointestinal motility problems contribute to an increased risk of mortality and impacts the length of hospitalization and medical care costs.
- Various causes impact normal gastrointestinal motility in critically ill patients.
- The high incidence of gastrointestinal complications in critically ill patients requires an awareness of the causation, signs and symptoms, and treatment of various gastrointestinal motility disorders, including gastroparesis, ileus, and toxic megacolon.
- Gastric residual volume is widely used in critical care settings to assess gastric motility.
- Toxic megacolon is a type of acquired megacolon categorized as a medical emergency and includes severe inflammation affecting all layers of the colon wall.

In critically ill patients, gastrointestinal (GI) motility problems are common and can involve the whole GI tract (GIT). GI complications occur in 50% or more of patients in a critical care setting and are prevalent in mechanically ventilated patients.[1,2] Furthermore, GI motility problems in critically ill patients contribute to an increased risk of mortality, duration of hospital stay, and increased medical costs.[1–3] Surgery, electrolyte disturbances, head and spinal injuries, sepsis, shock, burn injury, hyperglycemia, cardiac injury, respiratory failure, hypoxia, immobility, infections, and certain medications (catecholamines, opioids, sedatives) are some of the various factors that precipitate abnormal GI motility.[1,4,5] Some motility disorders in critically ill patients may lead to aspiration of gastric contents and, later, aspiration pneumonia. This review presents 2 GI motility problems, gastroparesis and ileus, which are common in

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critically ill patients, and discusses toxic megacolon, a severe and potentially life-threatening complication of pseudomembranous colitis.

GASTROPARESIS

Gastroparesis is a disorder characterized by delayed gastric emptying of solids and liquids in the absence of mechanical obstruction.[6] Delayed gastric emptying occurs in 38% to 57% of patients who are critically ill.[1] Although the exact cause of gastroparesis is unknown, disruption of nerve signals to the stomach may be a factor. The commonly reported causes of gastroparesis are diabetes (30%) and postsurgical (19%), but 36% are classified as idiopathic in nature (**Box 1**).[7]

Clinical Manifestations

Gastroparesis presents with a range of signs and symptoms, which include nausea (most predominate symptom), vomiting, pain (burning, shearing, or gnawing), early satiety, postprandial fullness, and abdominal distention or bloating.[1,3,7] The pain associated with gastroparesis is located mainly in the upper abdominal region (epigastric) and is described as constant or nocturnal (occurring at night). Lastly, pain is often reported following a meal (meal induced).[3] In critical care settings, these patients may also be intolerant to enteral feeding.[9]

Diagnosis and Testing

The diagnosis of gastroparesis is based on symptoms and demonstration of gastric emptying delay. The assessment of gastric emptying includes a variety of methods,

Box 1
Factors contributing to risk of gastroparesis

- Diabetes
- Surgery
- Head injury
- Sepsis
- Burns
- Shock
- Increased intracranial pressure
- Cardiac injury
- Respiratory failure
- Chronic pancreatitis
- Liver cirrhosis
- Gastric cancer
- Parkinson disease
- Electrolyte disturbances
- Medications
- Obesity

Data from Refs.[1,4,6,8]