

ileus  
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### diagnosis

- ileus is suggested by the presence of the following signs and symptoms:
  - abdominal distention
  - nausea
  - vomiting
  - high NG output
  - high gastric residual volumes during enteral feeding
  - abdominal pain
  - absent bowel sounds
  - constipation
- radiological findings suggestive of ileus are increase air in the small intestine, bowel distention & the presence of air-fluid levels

### general

- ileus is defined as the absence of physiological motility of the bowel leading to a disturbance in the progression of bowel contents through the gastrointestinal tract; it must be distinguished from mechanical obstruction
- no standardised definition exists

### normal gastrointestinal motility

- when a food bolus is introduced into the intestine, organised migrating motor complexes that exist at rest disappear and digested food is propelled through the GI tract by spikes of contraction of smooth muscle in the the wall of the gut
- PSNS increases GI motility while SNS decreases it
- nitric oxide produces smooth muscle relaxation and decreases gastrointestinal motility
- some endocrine substances increase GI motility including:
  - motilin
  - gastrin
  - cholecystokinin
- some endocrine substances decrease GI motility including:
  - somatostatin
  - glucagon

### treatment

- general measures:
  - adequate resuscitation is important if at all possible to ensure that organ blood flow is optimised; exogenous catecholamines promote the development of ileus and should be limited where possible
  - avoid excessive iv hydration as bowel oedema worsens ileus
  - avoid narcotics where able
  - correct electrolyte disturbances (hypokalaemia in particular inhibits normal muscle contraction)
- neostigmine:
  - dramatic effect for treatment of colonic pseudoobstruction has been demonstrated with 2mg iv of neostigmine (N Engl J Med 1999; 341: 137-41)
- metoclopramide:
  - widely used but has not been shown to be beneficial
- NSAIDs:
  - systemic ketorolac is associated with early bowel movements and increased tolerance to oral diet; it also causes GI bleeding and renal impairment which limits its utility in critical care
- erythromycin:
  - used because of its molecular similarity to motilin
- feeding:
  - avoid prolonged starvation as prolonged starvation is associated with mucosal atrophy; early use of GI tract is associated with achieving caloric goals earlier, earlier bowel movements and shorter length of hospital stay (10-20ml/hr is all that is required for this)
  - do not assume that a patient with ileus should not be fed enterally; passage of flatus and bowel sounds are not reliable indicators of normal gastrointestinal motility and virtually all haemodynamically stable patients should be enterally fed
  - TPN is not a substitute for enteral nutrition and there are no data to support indiscriminate use of TPN in patients with ileus
- newer agents:
  - agents being investigated include narcotic antagonists, nitric oxide synthase inhibitors and protein tyrosine kinase inhibitors

### pathogenesis

- three types of clinical ileus are observed:
  - adynamic ileus
  - spastic ileus (observed rarely in diseases such as porphyria or lead poisoning)
  - ischaemic ileus (identified in haemodynamically stable patients with low flow states)

### clinical consequences

- ileus results in inability to tolerate enteral feeding, nausea, vomiting & constipation
- accumulation of fluid and air in the bowel results in abdominal distention
- serious consequences of ileus include intestinal ischaemia, intestinal perforation and abdominal compartment syndrome
- intolerance of enteral feeding compromises the ability to provide adequate nutrition to critically ill patients