

**ACUTE Intestinal obstruction**  
**aETIOLOGY AND EMERGENCY**  
**MANAGEMENT**

**DR.PRADHAN**  
**EMERGENCY MEDICINE AND**  
**TRAUMA**



## HISTORY



- On June 8, 1956 **President of the United States Eisenhower** developed vague, ill-defined discomfort in the lower abdomen at 12:30 am.
- His physician arrived at the White House 30 minutes later and found moderate distention of abdomen but no particular point of abdominal tenderness
- Tap water enemas in the morning gave no relief. The pain became colicky and centered on the umbilicus and right lower quadrant.
- At operation, the terminal 30 to 40 cm of the ileum had the typical appearance of chronic **Crohn's Disease**.




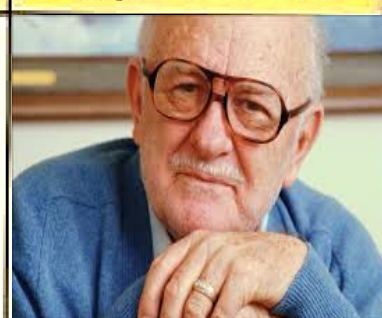

# INTRODUCTION



❖ Acute Intestinal Obstruction accounts for 5% of all acute surgical admissions.

## **Intestinal obstruction**

It is a mechanical or functional obstruction of the intestines, preventing the normal transit of the products of digestion

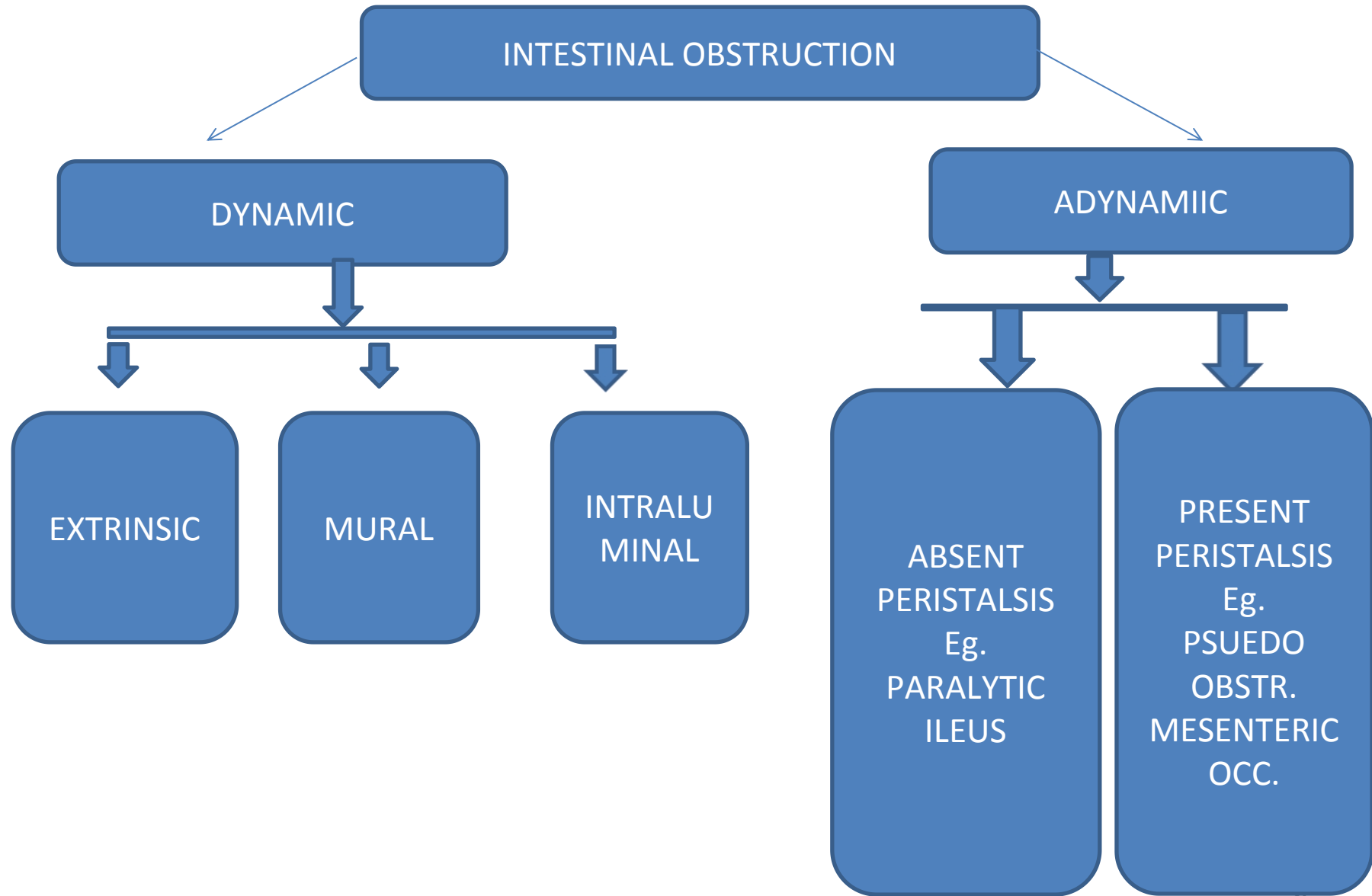
# Common causes of intestinal obstruction according to age

Neonate 0-6 months	Child 6 months - 15 years	Young adult 15-40 years	Middle age 40-65 years	Elderly 65 years and over
Congenital atresia Volvulus neonatorum Meconium ileus Imperforate anus Hirschsprung's disease	 Intussusception			
	Meckel's diverticulum			
	Bolus			
	Iatrogenic adhesions			
	Groin hernia			
	Crohn's disease			
	Small bowel tumour			
	Colonic tumour			
	Mesenteric vascular occlusions			
	Sigmoid volvulus			
	Pseudo-obstruction			
	Gallstone ileus			

 Large bowel obstruction  
 Small bowel obstruction

CA COLON

# CLASSIFICATION



# CAUSES OF INTESTINAL OBSTRUCTION (DYNAMIC)

## Intraluminal

- Foreign bodies
- Bezoars
- Gallstone

## Intraluminal

- Congenital atresia
- Stricture
- Malignancy(15%)

## Extraluminal

- Bands/ adhesions
- Hernia (12%)
- Volvulus
- Intussusception
- Tumor-  
benign/malignant



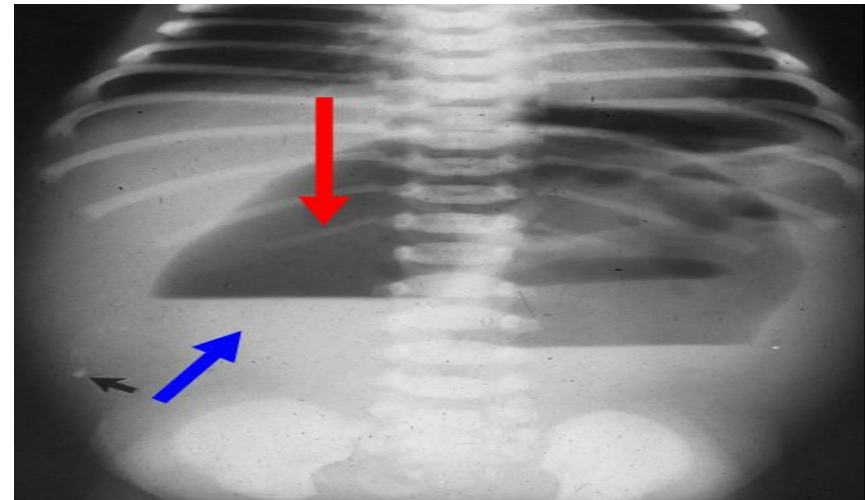
# Congenital atresia/stenosis

- **Investigations**- Plain X-ray

- **DUODENAL OBSTRUCTION** Each & proximal duodenum are distended- “double bubble”

- **JEJUNAL AND ILEAL OBSTRUCTION**

levels present



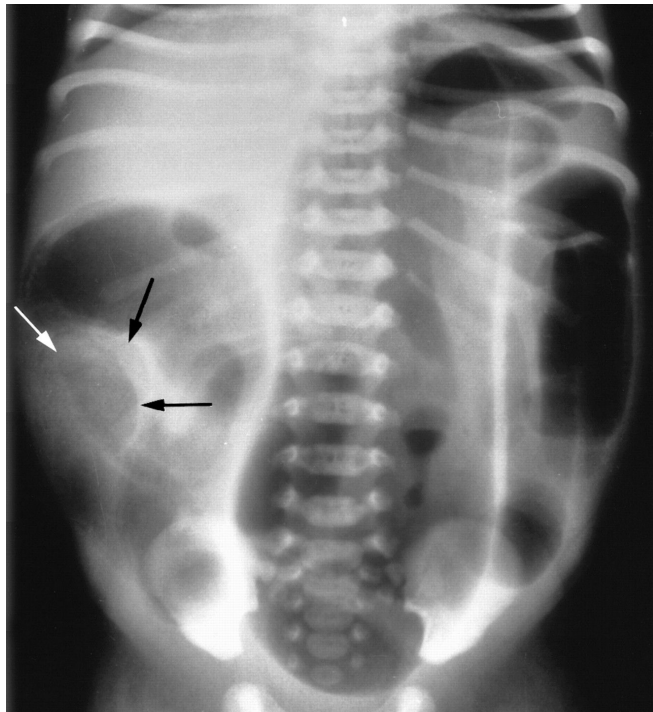
X-ray of a newborn with jejunoileal atresia. Note the huge portion of the intestines with air (red arrow) and fluid (blue arrow).



# MECONIUM ILEUS

## ➤ Plain x-ray

- Shows small dilated bowel loops
- Gastrograffin enema shows up the meconium



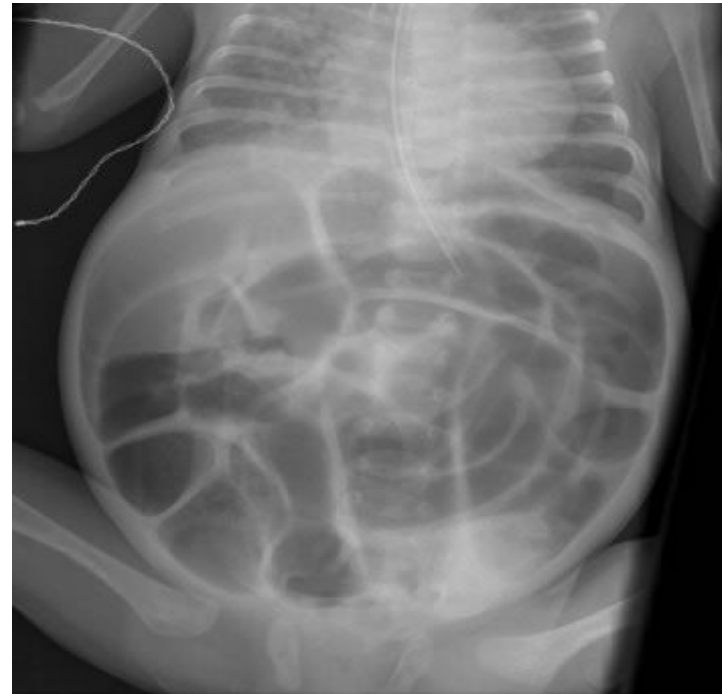
A



B

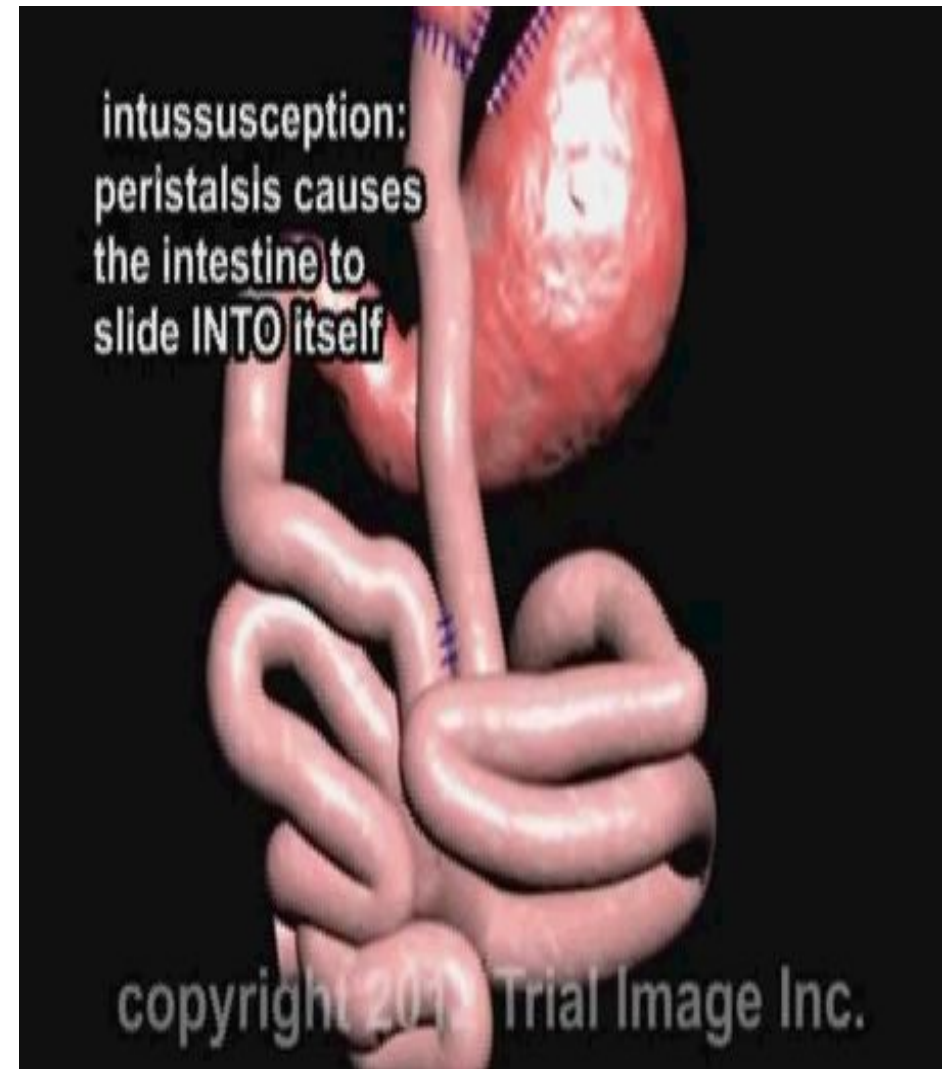
# MALROTATION AND NEONATAL VOLVULUS

- **Investigation:**
- Plain x-ray of the small bowel gas shows malrotation & level of obstruction.



# Acute intussusception

- Occurs when one portion of the gut becomes invaginated within an immediately adjacent segment.
- Common in 1<sup>st</sup> year of life
- Common after viral illness → enlargement of Peyer's patches
- Ileocolic is the commonest variety in child.
- Colocolic intussusception commonest in adult



# Obstruction by Adhesions

## Ischemic areas

- Sites of anastomoses
- Trauma
- VaSC.ocC

## Foreign material

- Talc, starch, gauze, silk

## Infection

- Peritonitis, TB

## Inflammatory disease

CROHNS DISEASE

## Radiation enteritis

- Peritoneal irritation → local fibrin production → produces adhesions between apposed surfaces

# Hernia

- Accounts for 20% of SMALL BOWEL OBSTRUCTION.
- Commonest
  1. Femoral hernia
  2. INDIRECT inguinal
  3. Umbilical
  4. Others: incisional
- The site of obstruction is the neck of hernia
- The compromised viscus is within the sac.
- Ischaemia occurs initially by venous occlusion, followed by oedema and arterial compromise.
  - Strangulation is noted by: Persistent pain  
Discolouration  
TENDERNESS

# Large Bowel Obstruction

## Aetiology:

### 1. *Carcinoma:*

**THE COMMONEST CAUSE**, 18% of colonic ca. present with obstruction

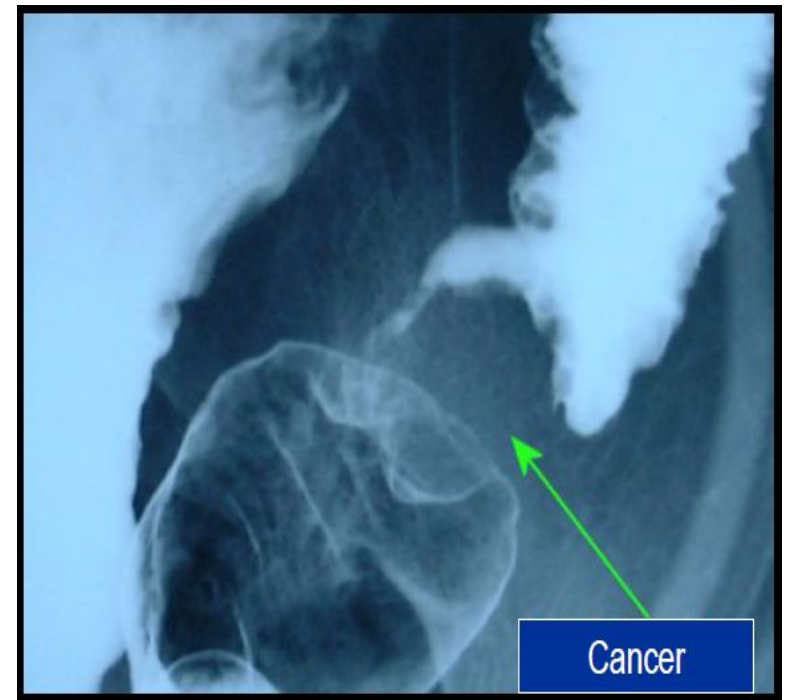
### 2. *Benign stricture:*

Due to Diverticular disease, Ischemia, Inflammatory bowel disease.

### 3. *Volvulus:*

-Sigmoid Volvulus/ Caecal Volvulus

### 4. *Hernia.*



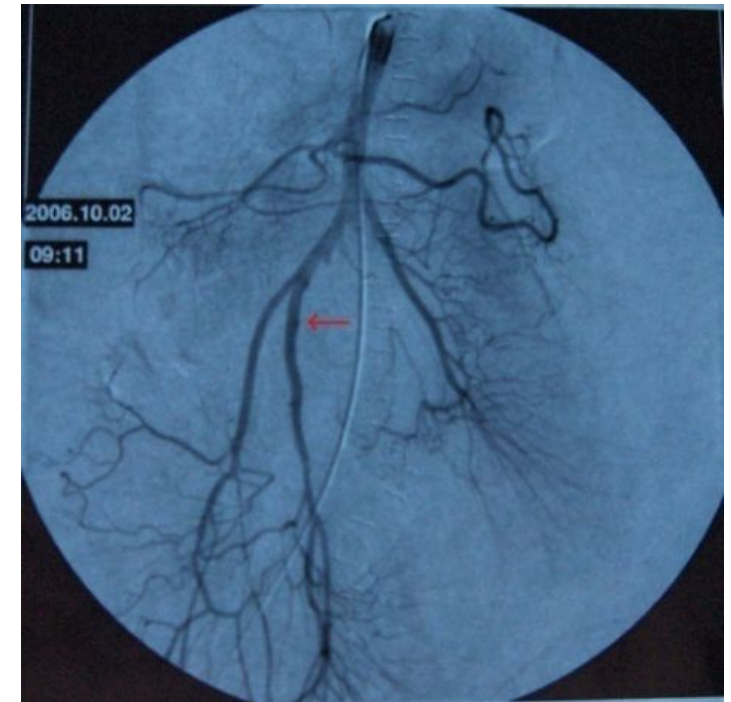
# Acute MESENTERIC ischaemia

## ➤ Investigations:

- White cell count:  $>20 \times 10^9 /L$
- Serum amylase: slightly raised ( $>200IU$ )

**CECT- ABDOMEN**

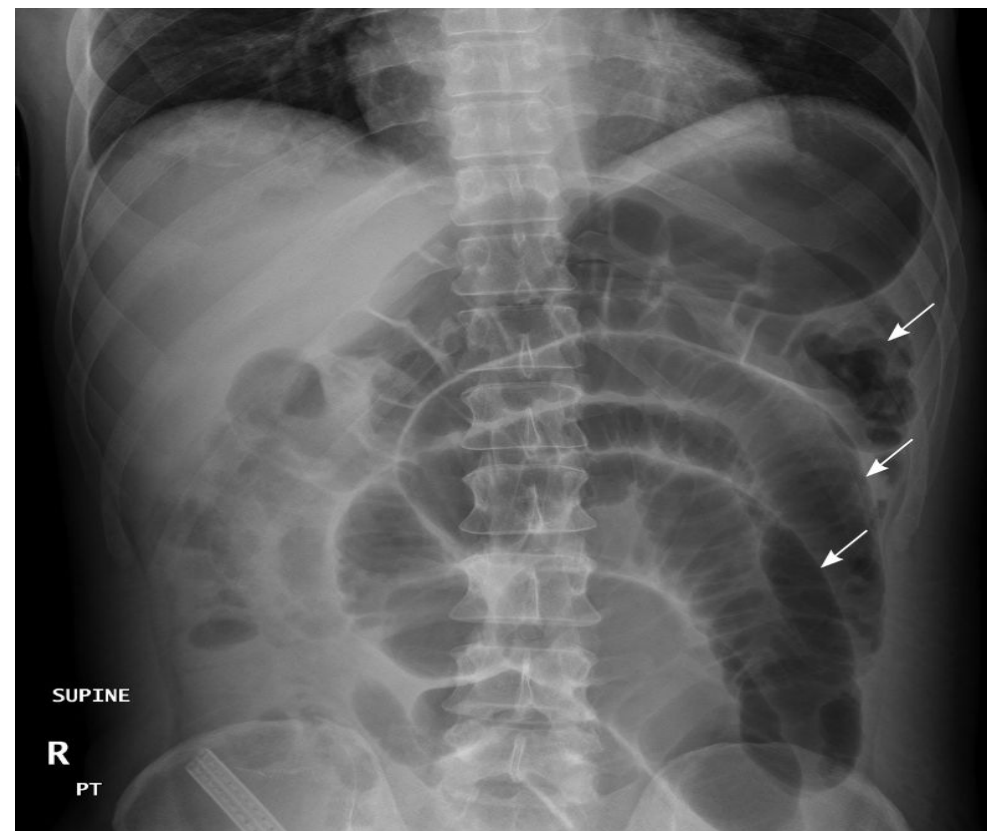
**MESENTERIC ANGIOGRAPHY**







Source: ACS Surgery © 2004 WebMD Inc.



SUPINE

R  
PT



L  
LATERAL DECUB

# Medical causes of small & Large bowel obstruction

## ❖ Metabolic:

1. Hypokalemia.
2. Hypomagnesemia.
3. Hyponatremia.
4. Ketoacidosis.
5. Uremia.
6. Porphyria.
7. Heavy metal poisoning.

## ❖ Medications:

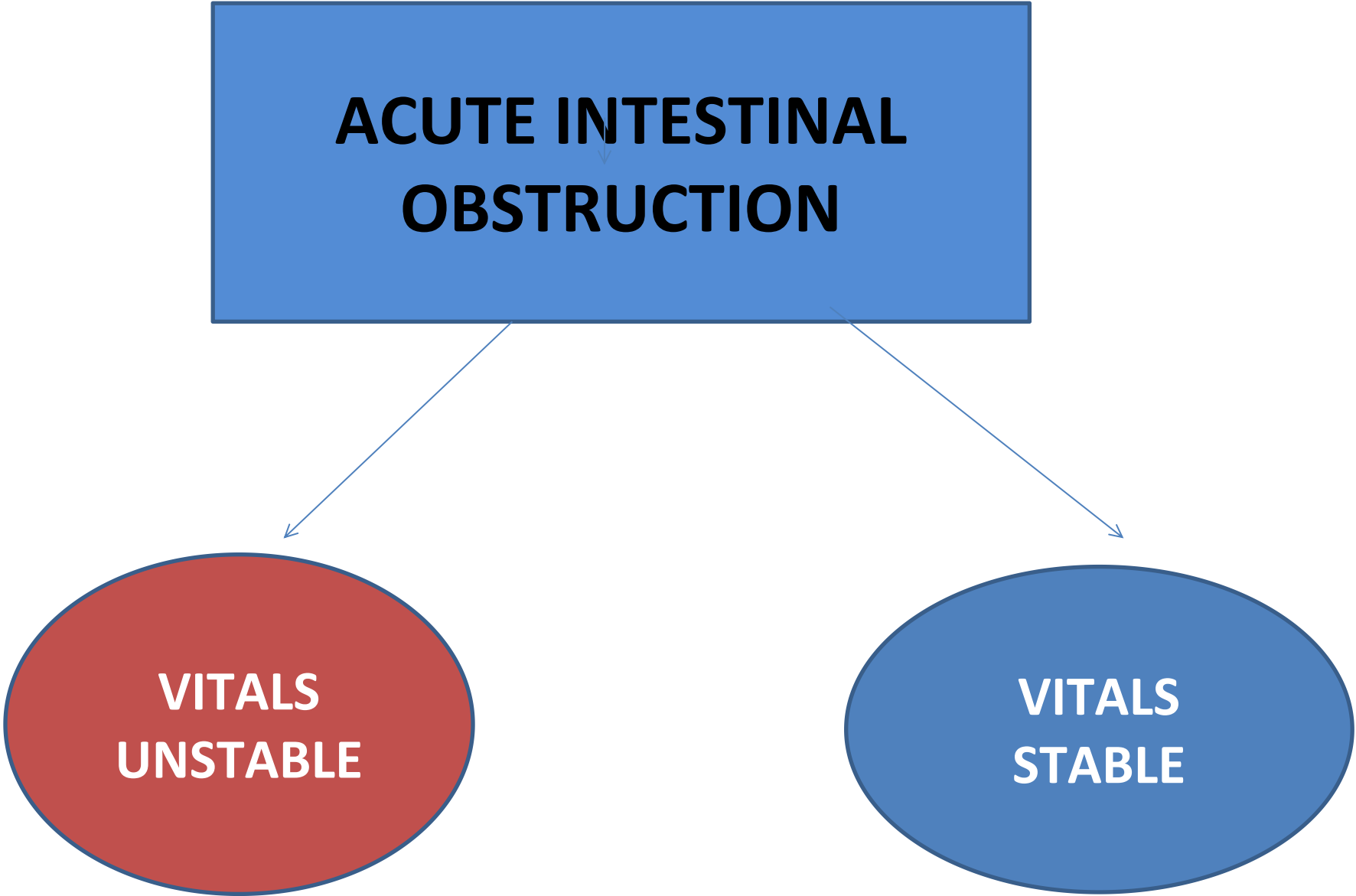
1. Narcotics.
2. Antipsychotics.
3. Anticholinergics.
4. Ganglionic blockers.
5. Agents used to treat Parkinson's disease.

# EMERGENCY Management of Acute intestinal Obstruction

***“NEVER LET THE SUN RISE OR FALL  
ON A PATIENT WITH BOWEL  
OBSTRUCTION.”***



# **ACUTE INTESTINAL OBSTRUCTION**

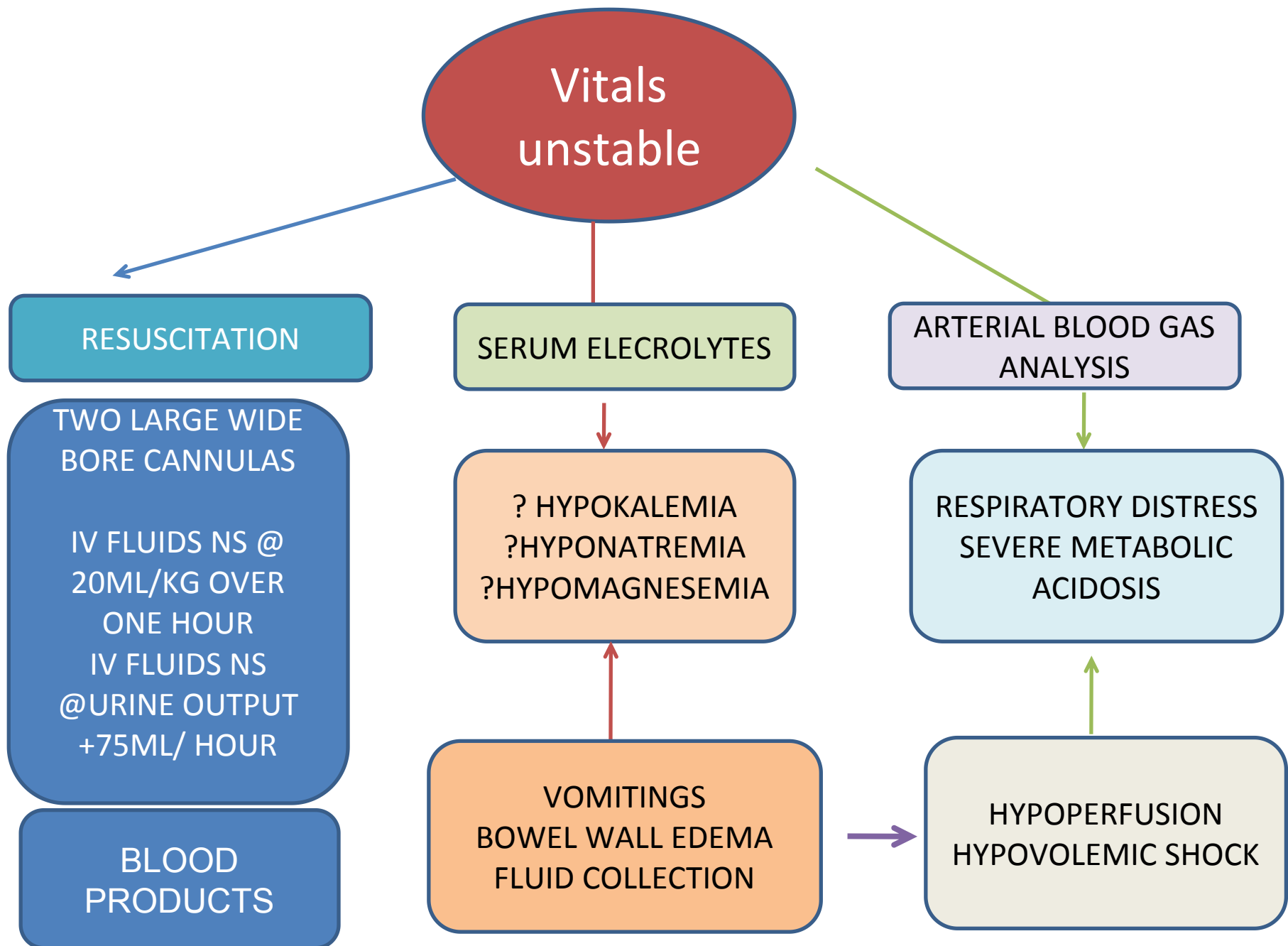


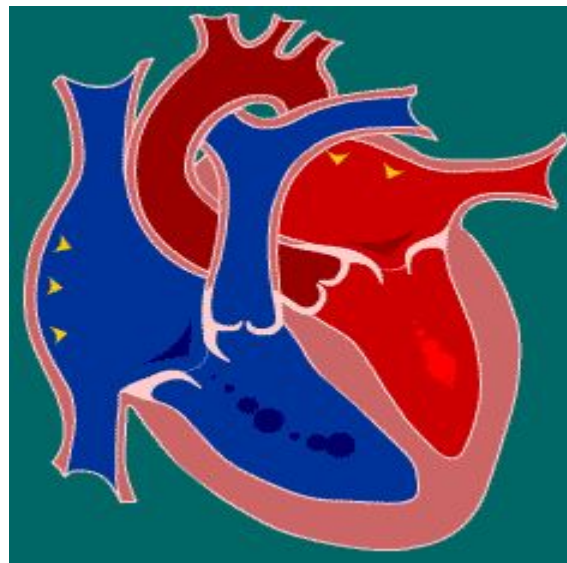
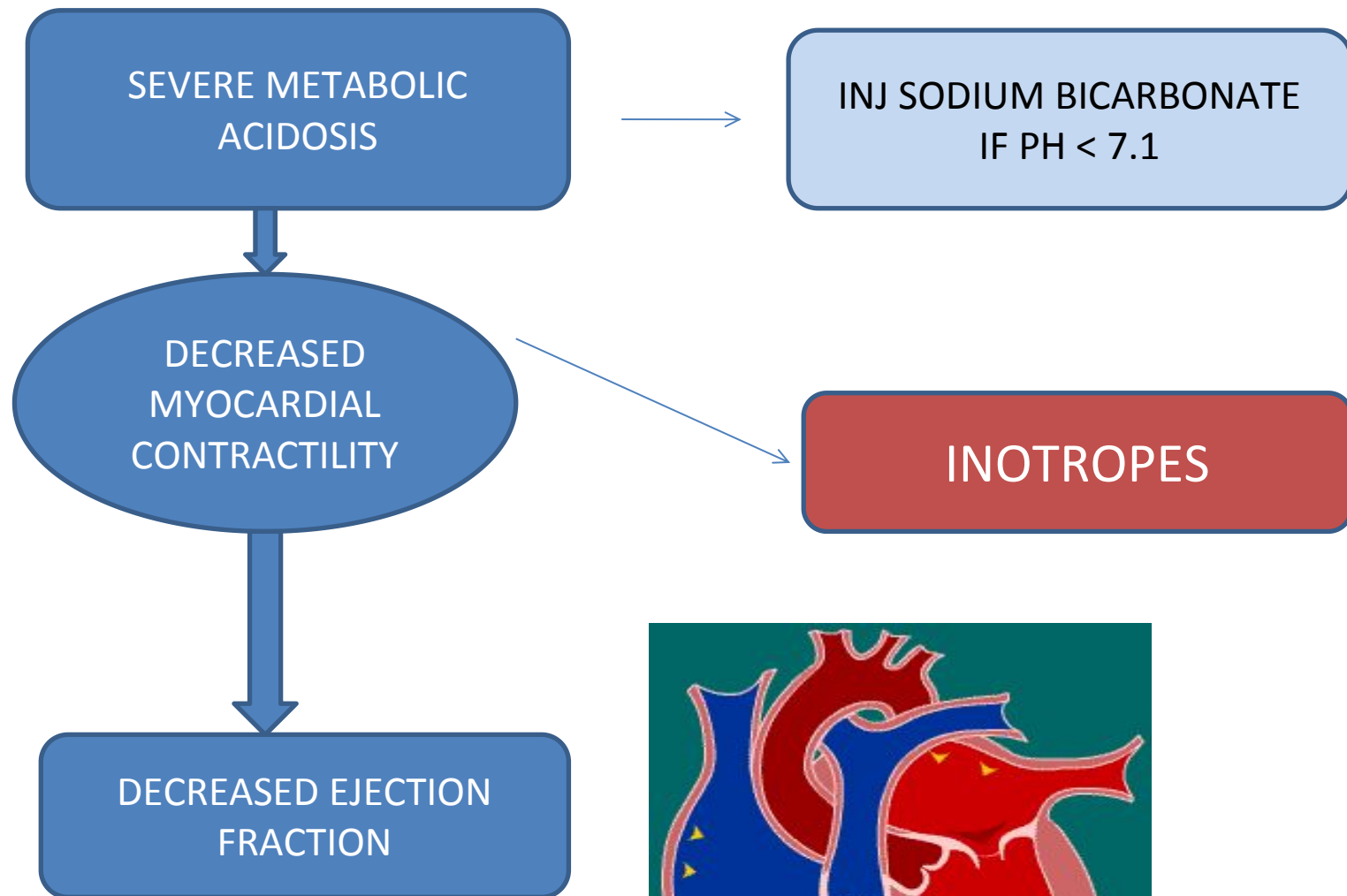
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graph TD; A[ACUTE INTESTINAL OBSTRUCTION] --> B(VITALS UNSTABLE); A --> C(VITALS STABLE)
```

A flowchart starting with a blue rectangular box at the top containing the text 'ACUTE INTESTINAL OBSTRUCTION'. Two arrows point downwards from this box to two ovals below. The left oval is red and contains the text 'VITALS UNSTABLE'. The right oval is blue and contains the text 'VITALS STABLE'.

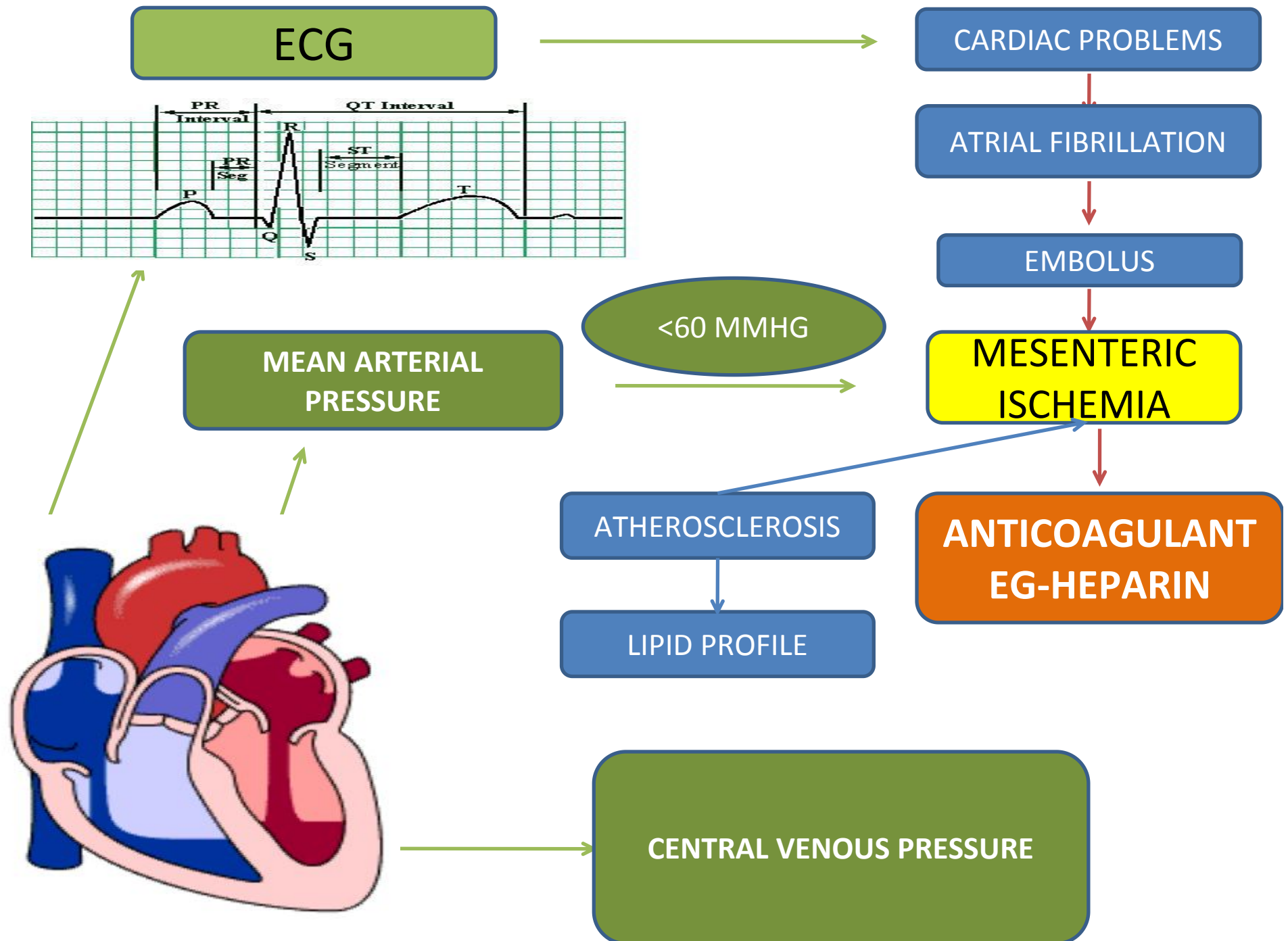
**VITALS  
UNSTABLE**

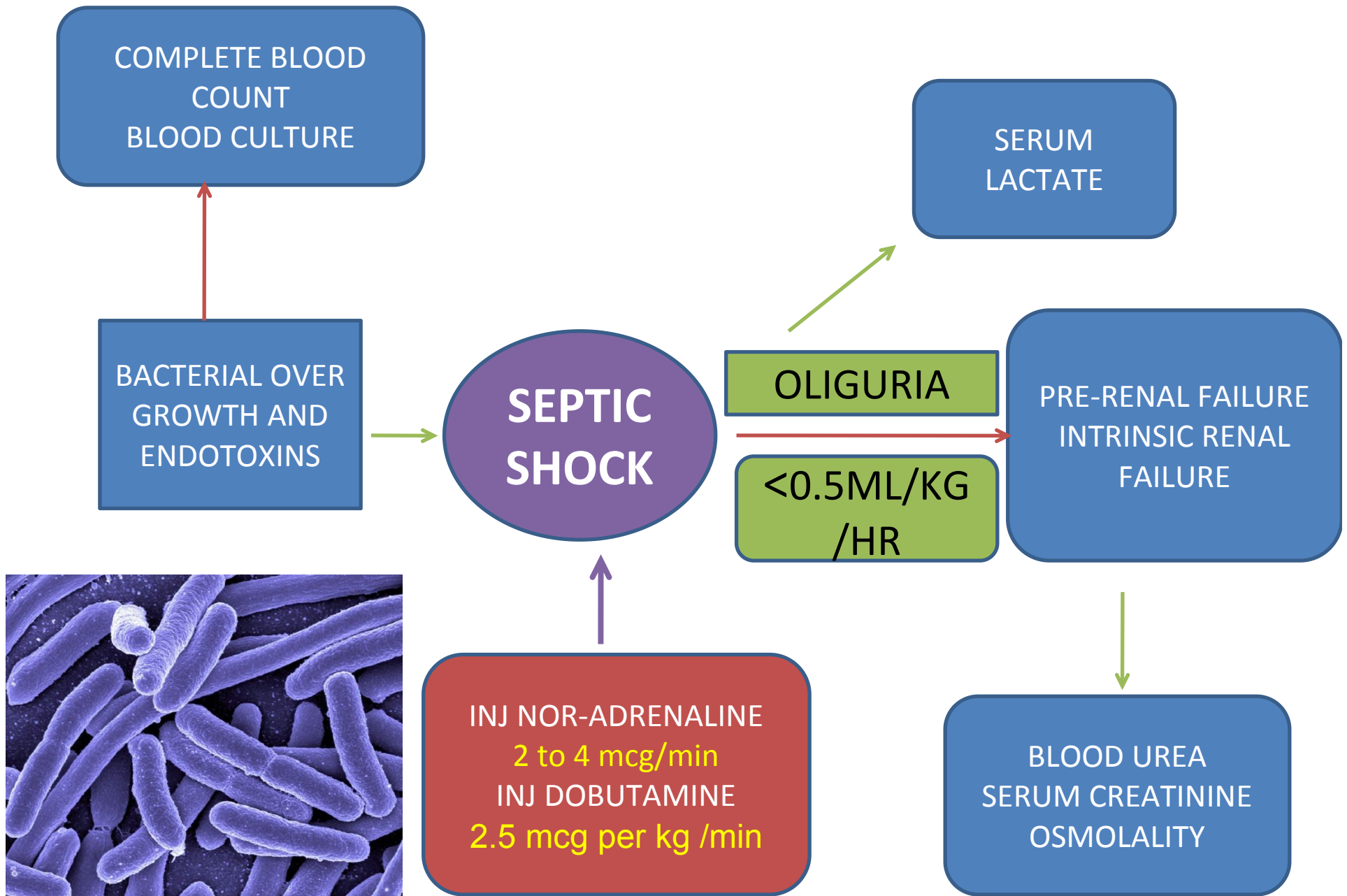
**VITALS  
STABLE**

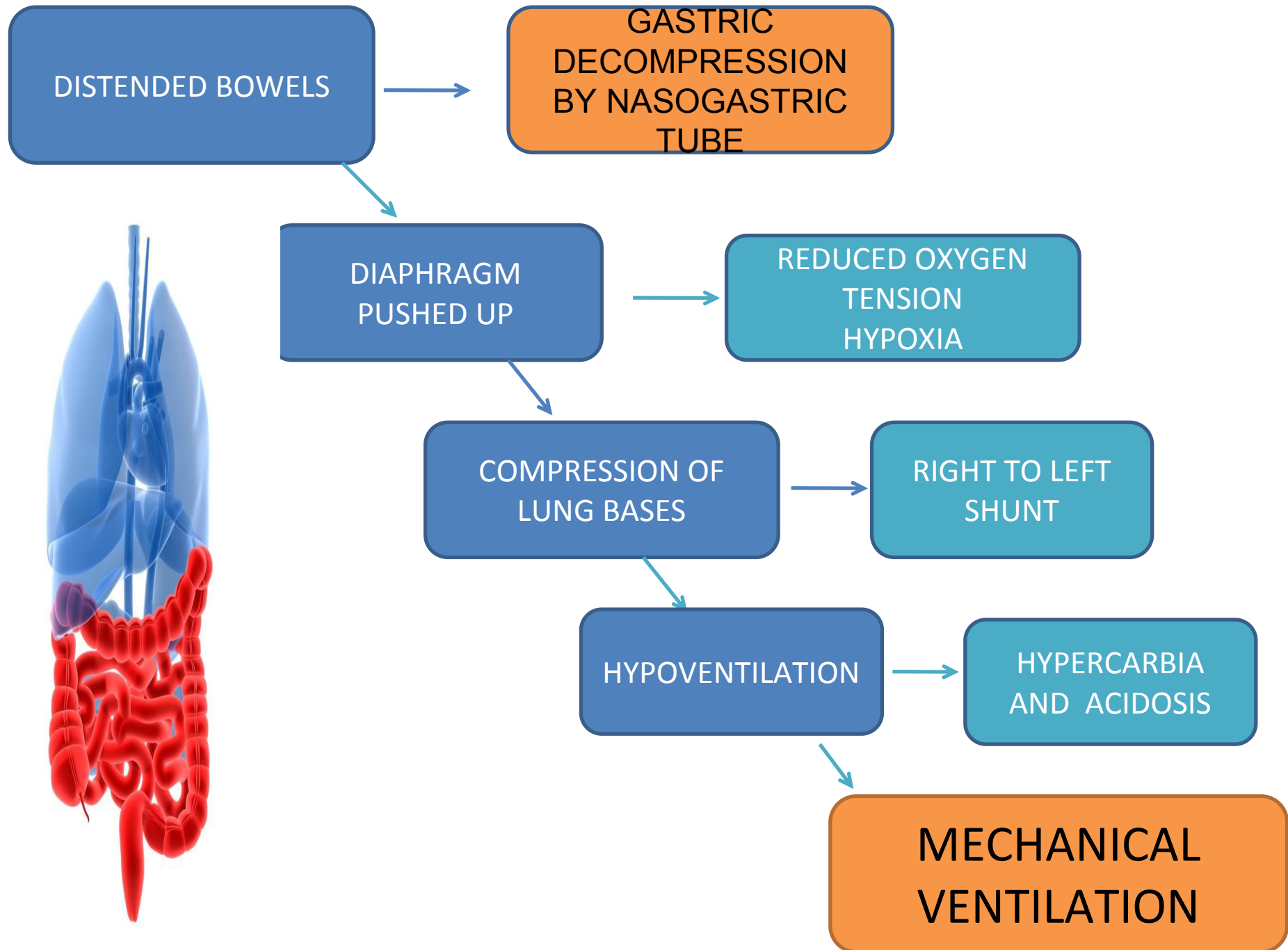












# COUNSELLING

STABILIZE THE PATIENT AND ATTENDERS???



Infections caused  
by anaerobic  
bacteria and  
parasitic  
infestations

Metronidazole  
-7.5 mg/kg q6-  
8h

Infections caused  
by Gram-negative  
bacteria, such as  
*Escherichia coli* and  
*Klebsiella*

Aminoglycosides  
eg- gentamycin

Cephalosporins-  
Third generation

Bactericidal for both  
Gram-positive and  
Gram-negative  
organisms

Carbapenems

Typhus, cholera.  
Gram-negative,  
Gram-positive,  
anaerobes

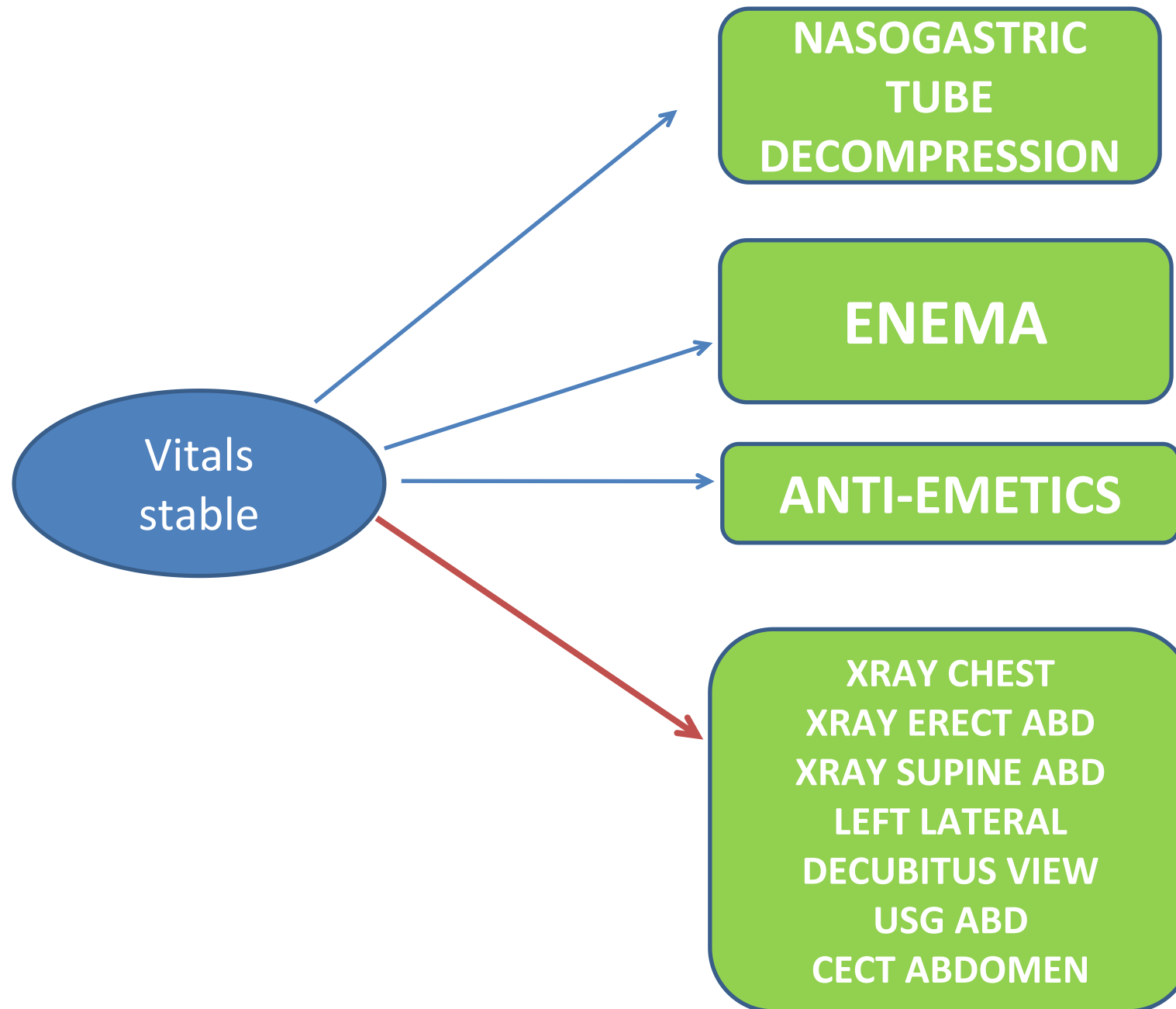
Chloramphenicol

fluoroquinolones

In penicillin-allergic  
patients and  
anaerobic  
infections

Clindamycin  
7mg/kg





## PARALYTIC ILEUS



NASOGASTRIC SUCTION  
PARENTERAL NUTRITION  
STOP ANTI CHOLINERGICS  
OPIOID MEDICATIONS

## PSEUDOOBSTRUCTION



NASOGASTRIC SUCTION  
COLONOSCOPIC  
DECOMPRESSION



# TAKE HOME MESSAGE

EARLY IDENTIFICATION

EARLY STABILISATION

EARLY INTERVENTION

# CONCLUSION



