

Nutritional Management in Enterocutaneous fistula



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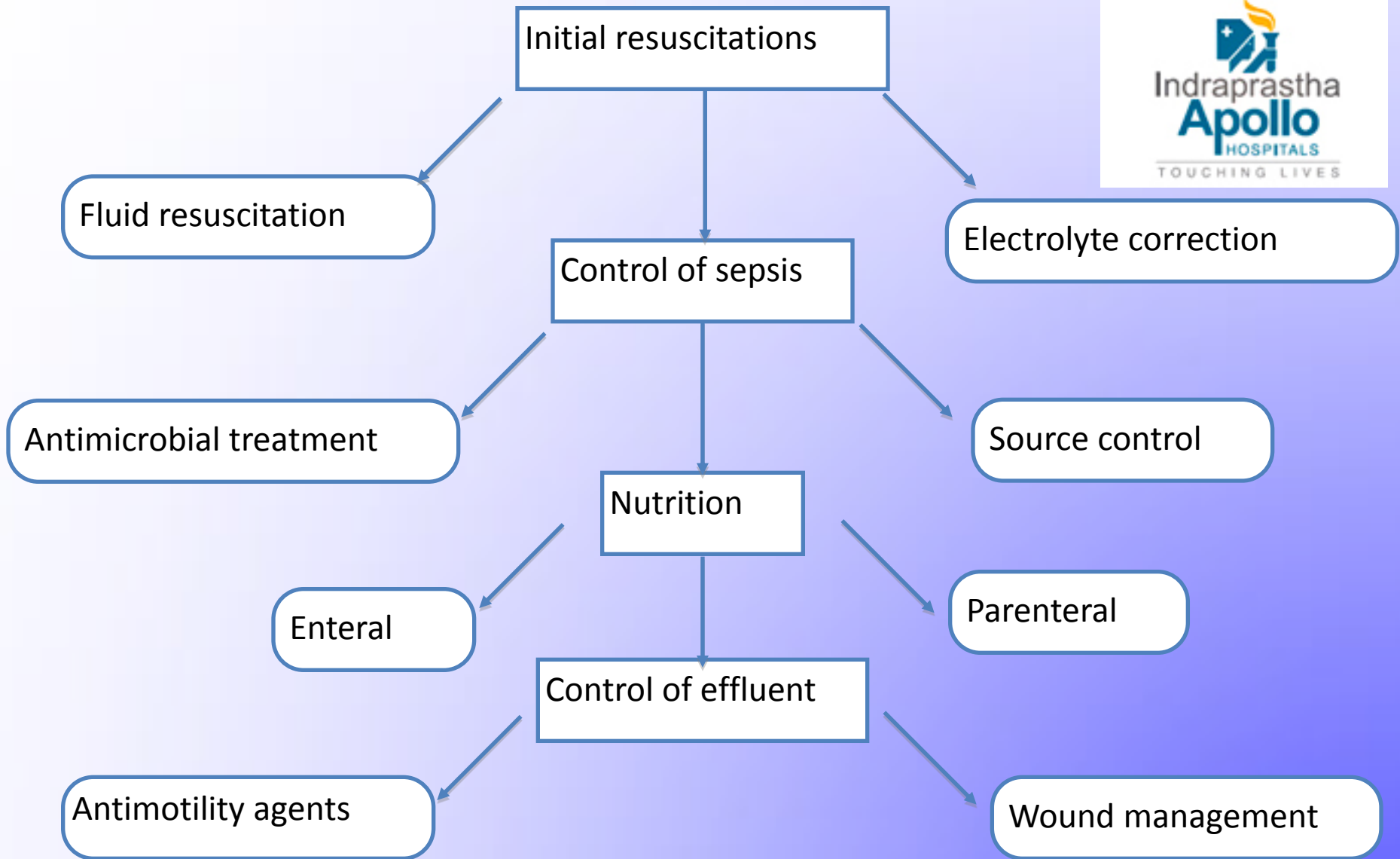
- What is enterocutaneous fistula
- Factors important in management of ECF
 - Etiology
 - Site
 - High or low
 - Favourable or unfavourable
- Nutritional Management
 - How much and what is required
 - How to give
 - Practical problems & their Management
 - cases

Entero cutaneous fistula A Disaster !!!



- Surgeon
- Patient
- Hospital

- **Phase I – acute – sepsis**
- **Phase II - Supportive treatment**
- **Phase III - Definitive treatment**



Causes

Causes	Frequency (%)
• Postoperative	• 85
• Spontaneous	• 15
• Crohn disease and TB	• 39
• Ulcerative colitis	• 13
• Malignancy	• 9
• Radiation	• 6
• Diverticular disease	• 5
• others	• 27

Anatomic location



- Gastric
- Duodenal
- Small bowel (proximal vs distal)
- Large bowel

Proximal vs distal



- **Proximal fistulas (stomach, duodenal, jejunal)**

- high output and loss of large quantities of important body fluids
- Refeeding

- **Distal fistulas (distal ileum and colon)**

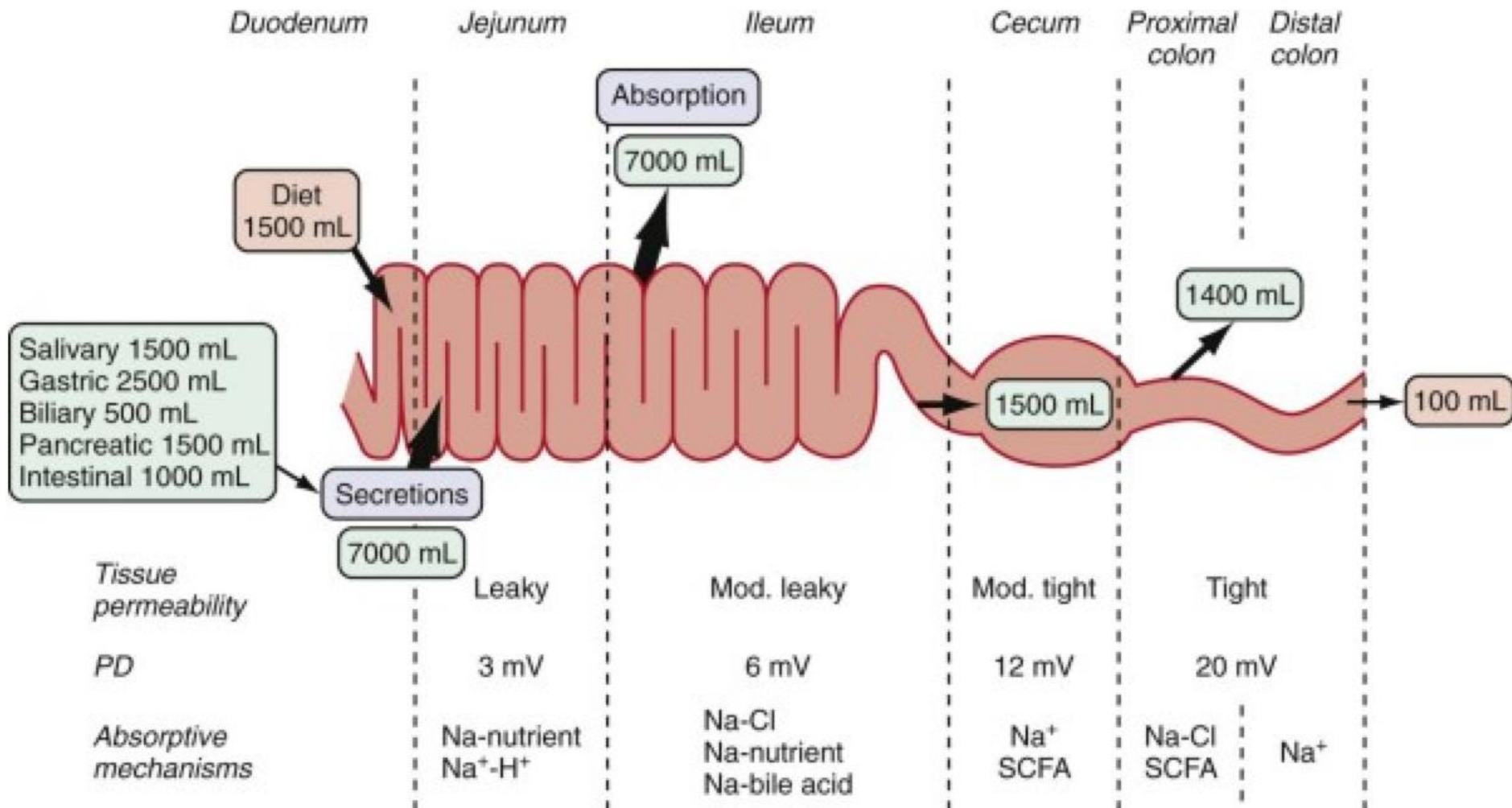
- easier to manage

High or Low output



- Low output : <200 ml/day
- Moderate output : 200 - 500 ml/day
- High output : >500 ml/day

Losses at each site



Favourable Factors



- No distal obstruction
- No intraabdominal collection
- No malignancy
- No Foreign body
- No radiation
- Long tract (>2.5cms)
- Small size of the opening
- Absence of inflammation

Route of nutrition administration



- Location of the fistula
- Output from fistula
- Nutritional status of the patient
- Long term vs short term requirement
- Enteral access (oral route, gastrostomy , jejunostomy)

- **optimal nutrition (>3000 kcal/d)**
 - mortality rate of 12%,
 - fistula closure rate 90%.

- **unable to maintain this intake**
 - mortality rate 55%
 - fistula closure rate 37%

Enteral Route



- **Gastric route** : oral feeding, orogastric tubes, nasogastric tubes, percutaneous endoscopic, percutaneous radiological, or surgical tube insertion.
- **Post pyloric feeding** : nasojejunal & feeding jejunostomy tube.

Benefits of enteral nutrition



- Natural
- Stimulates the gut function
- Enhances mucosal blood supply and improves its absorptive capacity
- Reduces the chances of bacterial translocation and thus minimises the chances of infection

Post-pyloric feeding



- prolonged inability to tolerate gastric feedings
- gastric outlet obstruction
- duodenal obstruction
- gastric or duodenal fistula
- severe gastroesophageal reflux
- inability to have a gastric enteral access tube due to altered anatomy

When we cannot use enteral route



- Insufficient bowel length
- Bowel incapable of absorbing nutrients (radiation enteritis ,etc.)
- Progressive paralytic ileus
- Severe diarrhoea
- Severe malabsorption

Parenteral nutrition



- central or a peripheral
- Peripheral route the osmolality of the fluid < 900 mosl/l
- Central < 1400 mosl/l

Side effects of Parenteral Nutrition



- Endocrine & metabolic: Fluid overload, hypercapnia, hyperglycemia, hyper-/hypokalemia, hyper-/hypophosphatemia, metabolic bone disease, nonanion gap metabolic acidosis, refeeding syndrome
- Hepatic: Cholestasis, cirrhosis (<1%), gallstones, liver function tests increased, pancreatitis, steatosis, triglycerides increased
- Renal: Azotemia, BUN increased
- Miscellaneous: Bacteremia, catheter-induced infection, exit-site infections, DVT

Practical Problems



- Tubes placement
- Blockage and regurgitation
- Leakage around the tubes
- Refeeding
- **PATIENCE**

- Issues : To prevent formation of more enterocutaneous fistulas through the exposed bowel.
- Building up nutrition, to make the patient fit to tolerate second procedure.
- Care of stoma
- Maintaining of jejunal feeding for long term.
- Refeeding of the jejunostomy output through jejunostomy tube.

- Necrosed esophagus, stomach, duodenum and jejunum.
- Pancreatico and duodeno cutaneous fistula formed.
- Extremely difficult to manage technically and nutritionally
- Nutrition being managed by feeding jejunostomy.
- ?? Refeeding of biliopancreatic collections

Multi disciplinary treatment



- Surgeon
- Wound management
- **Nutritional care**
- Fluid and electrolyte management

Conclusions



- Disaster
- Control of sepsis
- Proximal, high output worse
- Distal, low output better to manage
- Enteral better than parenteral
- Multidisciplinary approach

Thank You