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FACULTY OF NURSING

MALABSORPTION SYNDROME



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Definition:

- It is a state arising from abnormality in absorption of food nutrients across the gastrointestinal tract(GIT).
- Impairment can be of single or multiple nutrients depending on the abnormality.
- This may lead to malnutrition and a variety of anaemias.

- Malabsorption constitutes the pathological interference with the normal physiological sequence of body such as:
 - Digestion (intraluminal process),
- Absorption (mucosal process) and
 - Transport (postmucosal events)

Causes of malabsorption:

- Intestinal malabsorption can be due to:
 1. digestive failure caused by enzyme deficiencies
 2. structural defects
 3. mucosal abnormality
 4. infective agents
 5. systemic diseases affecting GIT

1. Due to digestive failure:

- **Pancreatic insufficiencies:**
 - cystic fibrosis
 - chronic pancreatitis
 - carcinoma of pancreas
- **Bile salt insufficiency:**
 - obstructive jaundice
 - bacterial overgrowth

2. Due to structural defects

- Inflammatory bowel diseases commonly: Crohn's Disease
- Gastrectomy and gastro-jejunostomy
- Fistulae, diverticulae and strictures.
- Infiltrative conditions such as amyloidosis, lymphoma.
- Short bowel syndrome.
- Eosinophilic gastroenteropathy etc.

3. Due to mucosal abnormality:

- Coeliac disease

4. Due to enzyme deficiencies:

- Lactase deficiency inducing lactose intolerance
- Disaccharidase deficiency
- Enteropeptidase deficiency

Symptoms of malabsorption

- Symptoms can be
 1. Extraintestinal
 2. Intraintestinal
- Diarrhoea, often steatorrhoea is the most common feature. It is due to impaired water, carbohydrate and electrolyte absorption.
- Other symptoms include:
 - Weight loss
 - Growth retardation
 - Swelling or edema
 - Anaemias
 - Muscle cramps and bleeding tendencies.

SPECIFIC DISEASE ENTITIES CAUSING MALABSORPTION

1.Celiac sprue

- common cause of malabsorption
- **Age:** ranging from first year of life through the eighth decade.

Etiology: not known.

But three factors can contribute:

1. environmental.
2. immunologic.
3. genetic factors.

- **1. Environmental factor:**
- - There is association of the disease with gliadin, a component of gluten that is present in wheat.
- **2. Immunologic factor:**
- - Serum antibodies are detected such as anti- gliadin.
- **3. Genetic factor:**
- - Almost all patients express the HLA-DQ2 allele

Diagnosis:

- A small-intestinal biopsy should be done for suspected patients.
- The hallmark of celiac sprue is the presence of an abnormal small-intestinal biopsy.

2. Tropical Sprue

- Caused by infectious agents including *Giardia lamblia*, *Yersinia enterocolitica*, *Clostridium difficile*.
- it tends to involve the distal small bowel.
- total villous atrophy is uncommon.

3. Crohn's Disease

- It is an inflammatory bowel disease
Marked by patchy areas of inflammation
anywhere in GIT
from mouth to anus .
- Body's immune system attacks GIT
leading to chronic inflammation.

4. Short Bowel Syndrome

- Following resection, diarrhea and/or steatorrhea can appear due to decrease in the area of the absorptive surface area.
- Other symptoms include cramping, bloating and heartburn.

5. Bacterial Overgrowth Syndrome

- There is proliferation of colonic-type bacteria within the small intestine.
- Due to stasis caused by impaired peristalsis . This lead to diarrhea and malabsorption.

Pathophysiology:

* Bacterial over growth leads to:

1. Metabolize bile salt resulting in deconjugation of bile salts;

→ ↓ Bile Salt and malabsorption of fat.

2. Damage of the intestinal villi by:

- Bacterial invasion
- Toxin/.
- Metabolic products

→ Damaged villi → cause total villous atrophy.

6. Whipple's Disease

- **Cause**: by the bacteria *Tropheryma whipplei*.
- **Effect**:
 - Chronic multisystem disease associated with diarrhea, steatorrhea, weight loss, arthralgia, and central nervous system (CNS) and cardiac problems .
- **Diagnosis**:
 - - identification of *T. whipplei* by polymerase chain reaction (PCR).
 - - PAS-positive macrophages in the small intestine and

Management of malabsorption Syndrome

- Replacement of nutrients, electrolytes and fluid may be necessary.
- In severe deficiency, hospital admission may be required for parenteral administration.
- Pancreatic enzymes are supplemented orally in pancreatic insufficiency.
- Dietary modification is important in some conditions:
 - Gluten-free diet in coeliac disease.
 - Lactose avoidance in lactose intolerance.
- Antibiotic therapy will treat Small Bowel Bacterial overgrowth.

THANK YOU