DIARRHEA

Diarrhoea

- Diarrhoea is not a disease or disorder, but is a symptom of underlying etiology. It is an abnormal frequent passage of watery stool relative to the usual bowel habits.
- Diarrhoea here could be more than 3 bowel movement / day. Major factor contribute diarrhea is excretion of excess water that normally reabsorbed from the gut. The ultimate result is dehydration due to electrolyte & acid base imbalance.
- **Acute diarrhea**
- Most cases of acute diarrhea is short lived. The bowel being normal before & after. It is rarely life threatening. It is characterized by sudden onset of abnormally frequent watery stools accompanied by weakness, abdominal pain, flatulence, fever & vomiting.
- It could be less than 7 bowel movement / day, usually self-limiting and subside within 48-72 hrs. generally being managed with **fluid & electrolyte replacement, dietary intervention & nonprescription medication.**

- Acute diarrhoea also known as **infective diarrhoea** , or **gastroenterities**. It has many etiological factors; the most important are infectious diarrhea **(viral, bacterial** & **protozoal**).
- It could also be **drug induced** or **food induced** diarrhea.

- **Viral** : *Rotavirus* is the most common cause of diarrhoea in children under the age 2 years. Vomiting often precedes diarrhoea. Spread is by fecal-oral route. In the majority, the infection is usually not too sever , but may cause death in infants already malnourished & who have not breastfed.

- **Bacterial**: A food- borne infections . Several type of bacteria can cause such infections; *Salmonella*, *Shegella, pathogenic Escherchia coli,----etc.* Typical symptoms include sever diarrhoea & /or vomiting, with or without abdominal pain.

  AB are generally unnecessary as most food- borne infections resolve spontaneously. Only in sever Salmonilla, Ciprofloxacin can be used by prescription.

- **Protzoan** *:* Example include *Entamoeba histolitica* (amoebic dysentery) and *Giardia lamblia* (giardiasis) . Diagnosis by stool samples in lab.

Drug-induced diarrhea

It is adverse out come of some drug therapy for example AB that has broad spectra activity against aerobic and anaerobic organism e.g.: Ampicllin, pencillin, lincomycin, clindamycin & cephalosporin.

The frequency of occurrence varies between agents. It is largely depend on the extent to which the drug disrupts the normal intestinal micro flora.

Diarrhoea can begin during or several days or weeks after treatment & may be self limiting with discontinuation of AB.

If diarrhoea occurs after first or second dose of therapy, it means that diarrhoea attributed to mild irritant properties of the drug itself. So the drug should be changed due to patient sensitivity to the drug.

If diarrhoea occurs (2-3 days) after initiating therapy, it may be attributed to disturbance of normal flora of intestine, so give antidiarrhoeal drug to correct the problem like oral vancomycin that is widely used for AB associated pseudomembranous colitis.

In absence of vancomycin, metronedazole can also used for 10-14 days.

Rifampicin can be used if the previous treatment is failed.

Other drugs cause diarrhoea are:

Magnesium containing antacids, NSAID, digoxin at high dose, excessive alcohol, some diuretic and cathartic.

A miss use of laxatives, especially those causing retention of electrolytes and water in the intestinal lumen, like Mannitol, Sorbitol, and Lactulose can produce osmotic diarrhoea.

A cytotoxic agents used in chemotherapy may also induce diarrhoea, though suppression of the normal GI flora which enable the microbial overgrowth and colonization of intestines with pathogenic bacteria and fungi.

Food induced diarrhoea

Either food allergy like banana or foods that are excessively fatty or spicy or contain high amount of many seeds.

Chronic diarrhoea

Defined as persistent or recurrent passages of uniformed watery stools lasting more than 2 weeks, accompanied by weight loss, fever, anxiety, depression, N & V.

It is usually the result of different etiology like:

- Disease of the bowel.
- Secondary manifestation of systemic disease.
- Cancer of the stomach, colon and endocrine.
- Psychogenic factors

The last one is a frequent cause of chronic diarrhoea characterized by small frequent stools and abdominal pain. The stool may be watery and may follow normal bowel movement and may appear shortly after eating.

Usually related to emotional stress that increases parasympathetic nervous system impulse to the GIT.

Patient with chronic diarrhoea should referred for best diagnosis and treatment.

Irritable bowel syndrome (IBS):

Patient with lower abdominal pain and a history of alternative diarrhoea and constipation may have IBS which is charecterized by frequent passages of small volume of stool rather than true diarrhoea; it may associate with stress and anxiety.

Inflemmatory bowel disease example Ulcerative colitis Characterized by chronic inflammation at various sites in the GIT. It can affect any age group.

Patient may have urgency, nocturnal diarrhoea, bloody stool, and malaise.

Malabsobition syndrome:

Lactose intolerance in **infant under one year old**, characterized by a frequent loose bowel movements that may associate with fever, vomiting, and failure to gain weight.

Colorectal cancer

Any middle aged patient presenting with a long standing change of bowel habit, weight loss, persistent diarrhoea and a feeling that the bowel has not been emptied, may be a suggestion of neoplasm.

Patient assesment:

- **Age**: Patient under 1 years & elderly are especially at risk of becoming dehydrated. Excess fluid loss may cause circulatory collapse & renal failure.

2- Duration:

- Diahorea of> 1 days duration in < 1 year require referal
- Diahorea of> 2 days duration in children < 3years require referal.
- Diahorea of> 3 days duration in older children & adults require Referral.
- Diahorea of more than 24 hrs in people with DM require referral.

- **Associated symptoms**
- The presence of blood or mucus in stools require referral
- Diarrhoea with sever vomiting or high fever require referral .
- Diarrhoea with sever abdominal pain also require referral
- Sign of dehydration: like dry mucus membrane , loss of skin turgor, dry mouth & decrease urine output, require referral.

Trigger points indication for referral:

1. Change in bowel habit in patient over 50
2. Diarrhoea following recent travel to tropical climate or area of poor sanitation.
3. Duration longer than 2-3 day in child
4. Patient unable to drink fluids.
5. Presence of blood or mucus in stool.
6. Rectal bleeding.
7. Signs of dehydration.
8. Sever abdominal pain.
9. Diarrhoea with sever vomiting and fever.
10. Suspected drug –induced reaction.
11. A history of change in bowel habit.
12. A history of recurrent diarrhoea of unknown cause.
13. A history of chronic diarrhoea

Complication of diarrhoea

Fluid and electrolyte imbalance. Risky groups are infants, young children, and older people (60 years old).

Acute diarrhoea is life threatening, especially in infant which may require hospitalization.

Certain medical condition can increase the risk of dehydration like D.M., sever cardiovascular or renal disease or multiple chronic medical condition, all these require referral.

Self care medication is inappropriate for diarrhoea during pregnancy, (referral).

Symptoms of dehydration

• Symptoms of mild dehydration are vague and include tiredness, anorexia, nausea, and light headiness.

• Symptoms of moderate dehydration are dry mucus membrane, sunken eyes, and thirst along with tiredness, dizziness, and postural hypotension.

• In sever dehydration the above symptoms are more marked and may include hypovolemic shock, oliguria, cool extremities, a rapid pulse, and a low BP.

- **Management of diarrhoea:**
- A mild-moderate acute diarrhoea is usually self limiting and in such cases proper dietary measures can help replacement of lost fluids and electrolytes.

- Oral rehydration therapy is a standard therapy for acute diarrhoea in babies and young children, but it may be used with antidiarrhoeal in older children and adults. Rehydration should initiate even if referral is advised.

- A premixed solutions or sachets of powder of oral rehydration solution (ORS) for reconstitution contain: sodium, potassium, bicarbonate, chloride & glucose. Children and adult should take between 200-400 ml after each loose motion.

- In sever cases of diarrhoea fluid deficit must replaced intravenously and also if ORS used for 2 days but with no improvement a referral is necessary.

Drug treatment:

I- Antimotility:

In acute diarrhoea, antimotility agents such as **opiates, diphenoxylate** & **loperamide** are useful for symptomatic control and to relief the associated abdominal cramps. All have comparable efficacy but Loperamide have low incidence of CNS effects.

It is considered as OTC only for patient of > 12 years old .

Some references recommended it in pregnancy.

* Opiates (codeine and morphine):

Adult doses 15-20 mg, child dose 5-10 mg, opiate in these subtheraputic doses are benefit, effective and safe with no tolerance and dependence.

A chronic use as in ulcerative colitis or acute overdose may increase the risk of physical dependence.

It should be given for 2 days, if diarrhoea persist the patient should then referred. Opiate should avoid in patient taking CNS depressant drugs.

* Diphenoxylate and lopermide

Effective in relieving cramps and stool frequency,

its act by binding to opiate receptors in the gut wall reducing peristalsis & enhancing the resorption of water & electrolytes

They may worsen the effect of invasive bacterial infection which produce toxins, they tend to trap the toxin and bacteria inside the body (delay time of occurrence in body) and elongate sign and symptoms of diarrhoea

Diarrhoea in such cases is defense mechanism, Such cases require AB, fluid and electrolyte replacement.

Both loperamicde and diphenoxylate shouldn’t give for AB induces diarrhoea.

Adsorbents:

these are non specific adsorbent that adsorb any thing like nutrients, digestive enzymes, toxin, bacteria, drug, metals, vitamins and others.

When used for patient with chronic therapy, a judgment must be made either alteration of the dosage from or dosage regimen, for example give other drugs by paranteral rout until diarrhoeal episode is over and the absorbent drugs are discontinued.

Among these there are: activated charcoal, aluminum hydroxide, bismuth salts (subsalicylate), magnesium trisilicate, kaolin and pectin.

The bismuth subsalicylate is effective in treating travelers diarrhoea, main SE are black stool coloration.

Polycarbophil another adsorbent that usually adsorb 60 times its original weight water. It is safe and effective, used is acute and chronic diarrhoea, present as chewable tablet, not recommended for children.

Probiotics: Lactobacillus preparation

Probiotics, are live microbial mixtures of bacteria (several lactobacillus speciese & yeasts used to restore the normal intestinal flora, thereby reducing intestinal colonization with pathogenic organisims.

It acts as a seed for growth of normal flora of intestine. The flora of GIT plays significant role in maintaining bowel function.

The AB therapy often disrupts the balance of intestinal M.O, resulting in abnormal intestinal and bowel function.

An alternative is yoghurt which also acts as a seed to re-establish the normal intestinal flora