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Course Name : D. Pharm

Year : First Year

Subject Name : Pharmaceutical Chemistry

Topic Name : Cathartics

Definition: Cathartics, also known as laxatives or purgatives, are substances that promote bowel movements and relieve constipation by increasing the frequency or ease of defecation.

Reason for Constipation: Constipation can occur due to various factors, including inadequate dietary fiber, insufficient fluid intake, lack of physical activity, certain medications, and underlying medical conditions.

Classification:

- 1. Bulk-forming Laxatives: e.g.** psyllium husk, methylcellulose, and wheat dextrin. These substances absorb water in the intestines, forming a bulky mass that stimulates bowel movements.
- 2. Stimulant Laxatives: e.g.** bisacodyl, senna, and cascara sagrada. These laxatives promote bowel movements by directly stimulating the nerves in the colon, leading to increased muscle contractions.
- 3. Osmotic Laxatives: e.g.** magnesium hydroxide, lactulose, and polyethylene glycol. These agents work by drawing water into the intestines, softening the stool and increasing its volume, which stimulates bowel movements.
- 4. Stool Softeners: e.g.** docusate sodium and docusate calcium. These agents increase the water content of the stool, making it softer and easier to pass.

Mode of Action: Cathartics exert their effects through various mechanisms, including increasing intestinal motility, altering stool consistency, and facilitating the passage of fecal matter.

Uses:

- 1.** Relief of occasional constipation
- 2.** Preparation for certain medical procedures or surgeries (e.g., colonoscopy)
- 3.** Management of constipation associated with certain medical conditions (e.g., irritable bowel syndrome, opioid use)
- 4.** Prevention of straining during bowel movements, especially in individuals with hemorrhoids or anal fissures

Side Effects:

- 1.** Dehydration: Excessive use of cathartics can lead to dehydration, especially with osmotic laxatives that draw water into the intestines.
- 2.** Electrolyte Imbalance: Some laxatives, particularly those containing magnesium, may lead to electrolyte imbalances, such as hypokalemia or hypermagnesemia.
- 3.** Abdominal Discomfort: Side effects may include cramping, bloating, gas, and

abdominal pain.

4. Dependence: Prolonged or excessive use of stimulant laxatives may lead to laxative dependence, where the colon becomes reliant on laxatives to produce bowel movements.

Dosage Forms: Cathartics are available in various dosage forms, including:

1. Tablets
2. Capsules
3. Liquid suspensions
4. Powders for reconstitution
5. Suppositories