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PHARMACOLOGY - III

UNIT 3

TOPIC :

- **g. Antiamoebic agent**



Antiamoebic Agents

- Antiamoebic agents are the drugs used for the treatment and prevention of amoebiasis, an infection caused mainly by *Entamoeba histolytica*.
- These drugs kill amoebae or inhibit their growth in the intestine, liver, and other tissues.

Introduction to Amoebiasis

Amoebiasis is a protozoal infection caused by:

- *Entamoeba histolytica*

It commonly affects:

- Intestine
- Liver
- Sometimes lungs and brain

Mode of Transmission

- Contaminated food and water
- Poor sanitation
- Fecal-oral route

Symptoms of Amoebiasis

- Abdominal pain
- Diarrhea
- Bloody stools
- Fever
- Liver abscess

Classification of Antiamoebic Drugs

1. Luminal Amoebicides

Act mainly in intestinal lumen.

Examples

- Diloxanide furoate
- Iodoquinol
- Paromomycin

2. Tissue Amoebicides

Act mainly in tissues and liver.

Examples

- Emetine
- Chloroquine

3. Mixed Amoebicides

Act both in intestine and tissues.

Examples

- Metronidazole
- Tinidazole
- Ornidazole

Antiamoebic Drugs

1. Metronidazole

→ Metronidazole is the most commonly used mixed amoebicide effective against intestinal and extraintestinal amoebiasis.

Mechanism of Action

- Inside anaerobic organisms, metronidazole forms toxic free radicals that damage DNA and cause cell death.

Pharmacokinetics

- Well absorbed orally
- Widely distributed
- Metabolized in liver
- Excreted through urine

Uses

- Intestinal amoebiasis
- Amoebic liver abscess
- Giardiasis
- Trichomoniasis
- Anaerobic bacterial infections

Adverse Effects

- Nausea
- Metallic taste
- Headache
- Dark urine

2. Tinidazole

→ Tinidazole is a nitroimidazole derivative similar to metronidazole but with longer duration of action.

Mechanism of Action

- Damages protozoal DNA through free radical formation.

Uses

- Amoebiasis
- Giardiasis
- Trichomoniasis

Adverse Effects

- Nausea
- Bitter taste
- Dizziness

3. Diloxanide Furoate

→ Diloxanide furoate is a luminal amoebicide used mainly for intestinal amoebiasis.

Mechanism of Action

- Acts directly on amoebae present in intestinal lumen.

Uses

- Asymptomatic intestinal amoebiasis
- Carrier state

Adverse Effects

- Flatulence
- Nausea
- Skin rash

4. Emetine

→ Emetine is a tissue amoebicide obtained from ipecac root.

Mechanism of Action

- Inhibits protein synthesis in amoebae.

Uses

- Severe amoebic liver abscess
- Severe invasive amoebiasis

Adverse Effects

- Cardiotoxicity
- Muscle weakness
- Hypotension

5. Chloroquine

→ Chloroquine is an antimalarial drug also used as a tissue amoebicide.

Mechanism of Action

- Concentrates in liver and destroys amoebae in hepatic tissue.

Uses

- Amoebic liver abscess

Adverse Effects

- Headache
- Itching
- Visual disturbances