Antitrematodes:-

Antitrematodees:-A ntitrematodal drugs affecting adult flukes.

1-Carbone tetrachloride .
2-Benzimidazole.
3-Clorsulon.
4-Oxyclozanide.
5-Rafoxanide.
6-Nitroxinil.
7-diamfenetide.

1-Carbon Tetrachloride(CC14):

It is the first effective drug for hepatica introduced in 1920s.

Antitrematodal Efficacy:

Carbon tetrachloride is very effective for the treatment of Fasciola hepatica in sheep. It is a cheap antitrematodal drug and is effective against adult flukes. It is effective against ascarid infections in chickens and dogs.

It has activity against blood-sucking nematodes including Ancylostoma in dogs and cats, Haemonchus and Bunostomum in cattle and sheep. Strongyles of horses are also susceptible to carbon tetrachloride. However, other more effective drugs are available in market against nematodal infection in animals and carbon tetrachloride is not preferred.

Toxicity:

Liver damage, hyperaesthesia, convulsion followed by coma is evident in some animals. Death may occurs due to hepatic failure. The toxicity produced due to carbon tetrachloride is treated by calcium and dextrose administration by i.v. route. Protein feed is withheld to animals suffering from toxicity.

Oxyclozanide:

It is marketed under the name of Zanil. This compound was introduced in 1966. The chemical name of oxyclozanide is 3, 3′, 5, 5′, 6-pentachloro-2′-hydroxysalicylanilide. It is a white crystalline substance insoluble in water.

Mechanism of Action:

It is un-coupler of oxidative phosphorylation. It has been found that this interference by oxyclozanide is detrimental to F.hepatica.

Efficacy:

It is effective against adult flukes and does not possess efficacy against immature flukes. It has poor action against rumen flukes (paramphistomum). It is used in Duck farms for elimination of flukes (Notocotylus attenuatus).

Dose:

15 mg/kg orally for cattle and sheep. The same dose is given in duck by oral route.

Toxicity:

The therapeutic index of oxyclozanide is rise and therefore, it is a safer compound.

3- Rafoxanide:

It is a halogenated salicylanilide which is chemically 3′-chloro-4′- (P-chloro- phenoxy)-3, 5 diodosalicylanilide. The chemical structure of rafoxanide is depicted in Fig. 35.16. It is white crystalline powder available in market as a bolus and suspension for clinical use.

Efficacy:

It is principally used and effective against adult F. hepatica and F. gigantica in sheep and cattle. The efficacy is low against the immature

flukes. It is also effective in haemonchosis, bunostomiasis and nasal bots of sheep.

Mechanisms of Action: Not clear.

Toxicity:

The therapeutic index of rafoxanide approaches to 5 indicating a good margin of safety in all animals. No untoward effects are observed at recommended therapeutic doses. However, in-appetence and diarrhoea may occur in cattle after a high dose of rafoxanide. It may produce blindness and optic nerve degeneration in some animals.

Contraindications of Rafoxanide:-

Lactating animals should not be treated with rafoxanide whose milk and milk products are consumed by human within 28 days.

Antitrematodals used Against Immature Flukes:

Diamfenetide:-

It posses high efficacy against the immature F.hepatica.As the flukes start aging .the activity of diamfenetide decreases.It is mainly used prophylactically against liver flukes in sheep .It also possess good efficacy for Dicrocoelium Lanceolatum.

Mode of action:-

Diamfenetide acts by deacylases present in liver and is metabolized to an amine by de-acylation process.The metabolite amine is active against the liver flukes .The rise of amine concentration in liver parenchyma causes rapid death of immature flukes.

Effiacy:-

It is used clinically for the treatment of acute facioliasis due to immature flukes especially of F.hepatica in sheep.It is 100%effective against flukes of form 1 to 9 weeks of age. It is not active for adult flukes located in bile ducts because the quantity of active amine reaching at this site is reduced due to dilution in blood of the affected animals.

Dose:-Sheep and goat :100mg lKg ,orally.

Toxicity :- Temporary impairment of vision and loss of wool is evident at 4 times higher therapeutic dose.