Anthelmintic drugs

\*Worms that infect humans (Nematodes (roundworms) / Trematodes (flukes)- leaf-shaped / Cestodes (tapeworms) )

\* target to Eliminate the organisms from host and control the sread of infection.

 Nematodes treatment:

\*nematodes infects (Intestine /Blood / Tissues) /(Alb,Me,Thia)-bendazole and Ivermectin are contradicated in pregnancy

\*have a complete digestive tract.

 Mebendazole (inhibit the assembly of microtubules) (irreversibly block glucose uptake) (parasites are expelled in feces)

\*adverse abdominal pain and diarrhea /\*cotradicated in pregnant women )

 Pyrantel pamoate ( poorly absorbed orally / effects in intestinal tract /neuromuscular-blocking agent-release of acetylcholine and inhibition of cholinesterase leading to paralysis of the worm / paralyzed worm releases its hold on the intestinal tract and is expelled / nausea, vomiting, and diarrhea)

 Ivermectin (target glutamate-gated chloride channel receptors >Chloride influx >hyperpolarization >paralysis and death /

Orally / contradicatedin pregnancy / killing of the microfilaria in onchocerciasis > Mazzotti reaction(hypotension, headache,fever)-

severity of Mazzotti reaction is related to parasite load - Antihistamines or steroids to reduce symptoms )

Diethylcarbamazine ( treatment of filariasis / kills microfilariae , against adult worms / rapidly absorbed after oralll /

Excreted in urine /adverse ( arthralgia, accelerate blindness , severe Mazzotti reactions in patients with onchocerciasis)/

Contradicated in patients with onchocerciasis )

\*treatment of Onchocerciasis (river blindness) -caused by onchocerca volvulus by –Ivermectin-

\*treatment of Enterobiasis (pinworm disease)white worm in stool- caused by enteroblus vormicularis by –mebendazole or pyrantel pamoate-

\*treatment of Ascariasis (roundworm disease)- caused by ascaris lumbricoides by - mebendazole or pyrantel pamoate-

\*treatment of filariasis(causes elephantiasis in years)-caused by wuchereria , brugla malayl – by diethylcarbamazine and albendazole

\*treatment of Trichinosis - caused by trichinella spiralis - by albendazole or mebendazole

\*treatment of Strongyloidiasis (threadworm disease)-caused by strongyloids stercoralis- by Ivermectin

\*treatment of Hookworm disease(causes anemia) – caused by ancylostoma duodeniae(old) and necator americanus (new) – by mebendazole or pyrantel pamoate

\*treatment of Trichuriasis (whipworm disease) – caused by trichuris trichiura – by Menbendazole.

Trematodes treatment:

\*Infects ( intestine / blood / lung,liver) / \* lack a mouth and a digestive tract

 Parziquantel (treatment of all forms of schistosomiasis , other trematode infections, and Cestode infections such as taeniasis /

Permeability to calcium is increased - contracture and paralysis / taken with food , bitter taste(not chewed) / rapidly absorbed after oral / CSF / extensively metabolized-excreted in the urine / malaise, gastrointestinal upset and all common /

contraindicated for the treatment of ocular cysticercosis -destruction of the organism in the eye may cause irreversible damage

\*treatment of Paragonimiasis(eggs in sputum and stool)crab meat – caused by paragonimus westerman(lung fluke) – by praziquantel

\*treatment of clonorchiasis(eggs in stool)freshwater fish –caused by clonorchis sinensis(liver fluke) –by praziquantel

\*treatment of schistosomiasis (new world)-schistosoma (mansoni,japonicum)(liver damage,GI bleeding)(eggs in stool)- praziquantel

\*treatment of schistosomiasis (old world)- schistosoma haematobium(eggs in urine or bladder wall) – praziquantel

 Cestodes treatment:

\*attach to intestine /\* lack a mouth and a digestive tract

Niclosamide (inhibits the mitochondrial phosphorylation of ADP >lethal./ Anaerobic metabolism may also be inhibited

laxative is administered prior to oral administration to purge the bowel of all dead segments and to enhance digestion and liberation of the ova)

\*treatment of Echinococcosis(CT scan or biopsy) –caused by Enchicoccus granulosus(dog tapeworm)-by Albendazole

\*treatment of taeniasis(proglottids in stool) –caused by taenia solium(pork tapeworm) -by praziquantel

\*treatment of Cysticercosis(Ct scan or biopsy) - caused by taenia solium - by praziquantel , albendazole ,surgery

\*treatment of taeniasis(proglottids in stool) \_caused by taenia saginata(beef tapeworm) –by praziquantel

\*treatment of Diphyllobothriasis(eggs in stool) - caused by diphyllobothrium latum(fish tapeworm)- by praziquantel or niclosamide

Albendazole (inhibits microtubule synthesis and glucose uptake in nematodes, cestodal infestations(cysticercosis and hydatid)

Oral / Absorption is enhanced by a high-fat meal. / distributes widely, including the CSF / extensive first-pass metabolism, including formation of an active sulfoxide)