

## CESTODES (TAPEWORM)

Cestodes is ribbon- shaped worms live in the gut of the human it has no alimentary system it has scolex which contain suckers attach to gut and absorb nutrients from human gut, from scolex arise segments called proglottides contains large numbers of ova ,fertilization occur through segments , when proglottides shed through stool it contaminating foods if taken by human or animal it cause cysticercus liberated from ova and invade tissues .Taenia result from consumption of cysticercus from infected animals like Taenia saginata (beef tapeworm) result from consumption of undercooked beef meat infected with cysticercus bovis , Taenia solium from undercooked meat of infected pork with cysticercus , Diphylobothrium latum result from eating undercooked fresh water fish infected with larva .

Human eat ova will develop cysticercus .Human eat cysticercus will develop tapeworm like taeniasis .

### Taenia saginata

It is common worldwide live in the human intestine it reach few meters in length it cause no intestinal symptoms ,noticed by segments in the stool or the distress patients in his cloths .

### Taenia solium

It is common in countries consumes pork meat its length less than Taenia saginata .

### Taenia asiatica

Eating uncooked meats of pigs . Similar to T. solium .

Diagnosed by general stool exam (GSE) to diagnose ova which is difficult to differentiate microscopically between T. saginata and T. solium .

Treatment : By praziquantel tablets 5-10 mg as single dose or Niclosamide 2 gm as single dose or nitazoxanide tab. 500 mg twice daily for 3 days is alternative drug followed after 2 hours by laxatives to prevent retrograde intestinal infection .

Prevention : Good cooking of the meat .

### Cysticercosis

It infect human when ingest eggs of Taenia either by finger contamination or through contaminated diet ,the larva librated from eggs in the stomach it penetrate the stomach or intestine reaching human tissues cause cysticercarci which is cyst about 0.5- 1 cm contain head of young worm it not migrate nor enlarge ,main sites in human are the skin ,skeletal muscles and brain .

## Cysticercosis

**Clinical features :** When the cyst stable it can be palpable under the skin as pea – shaped ovoid bodies painless cause less symptoms the larva may die and calcify later. If heavy infection of brain in children it is similar to encephalitis . brain cyst after 5-20 years may cause epilepsy ,focal neurological signs or hydrocephalus .

**Investigations :**

Skin or subcutaneous nodules is excised for histopathological study . Larva calcification in body and less calcification in the brain can be visualized by plain X-ray . larva in the brain can be diagnosed by brain CT-scan or brain MRI . Serological study for detection of antibodies .

**Management**

Albendazole 15mg daily for minimum 8 days or praziquantel 50mg |kg in divided doses for 10 days , in neurocysticercosis prednisolon tablets 10 mg 3 times daily one day prior albendazole or praziquantel is used and for 14 days to prevent reaction in the brain , antiepileptic drug is used if there is risk of fit , surgery is used for hydrocephalus .

## ECHINOCOCCUS GRANULOSUS (TAENIA ECHINOCOCCUS ) AND HYDATID CYST DISEASE

Taenia echinococcus tapeworm infect the dogs ,excrete ova with stool contaminate grass or water . Cows, lamb ,sheep ,camels and other cattle . consumes contaminated grass in stomach the larva liberated from egg penetrate the small intestine then it develop cysts (hydatid cyst ) in liver ,lung or other tissue when human consume contaminated grass or undercooked infected meet of cattle the larva liberated penetrate the small intestine to reach the liver ,lungs or any other organ in the body ,. Hydatid cyst forms of three layers (ectocyst ,pericyst and endocyst ) surround cavity contain fluid and scolices which secreted by endocyst the germinal layer ,these scolices if get chance to reach tissues like in rupture hydatid cyst it will develop to hundreds of new hydatid cyst in the body or hydatid cyst continue to grow slowly or intermittently to reach big size, or scolices die and hydatid cyst collapse and calcify .

## Clinical features

Usually the first organ affected is right lobe of the liver in 75% then lungs 20 % then muscle 4% , any other organ in lower percent rate . In the liver may be asymptomatic diagnosed accidentally by abdominal ultrasound or it cause hepatomegally and palpable cyst or it cause pressure symptoms on other organs like pressure on the lower lobe of lung and cause recurrent chest infection . It may rupture and hydatid fluid cause anaphylaxis (anaphylactic shock ) and this lead to metastatic hydatid cyst of the body . In other organs it may cause pressure symptoms accordingly .

## Investigations

Diagnosis is made by ultrasound of the liver which is sensitive to diagnosis , small cyst in the lung or CNS may need CT-Scan of that organ . Conventional X-ray may showed calcify hydatid cyst although can be diagnosed by abdominal ultrasound . Serology by complement fixation test and ELISA is positive in 70-90 % .

## Management

Treatment of hydatid cyst is surgical excision once diagnosed to prevent its complications . Medical treatment by albendazole tablets 400 mg 12 hourly for 3 months it is indicated in rupture hydatid cyst but the period is longer ,to eradicated new scolices to prevent growth of hydatid cyst and in inoperable cases . Praziquantel 20 mg /kg 12 hourly kill protoscolices per operatively .

## Prevention

Eradicate straw dogs .Good cooking of meet to kill cysts and good cleaning of vegetables to get rid of infective eggs .