STUDY ON FATAL HEPATIC COCCIDIOSIS IN RABBITS OF KASHMIR VALLEY

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Hepatic coccidiosis occurred in rabbits belonging to different ages, sexes and breeds during the years from March -2004 to February- 2006. The clinical signs were anorexia, loss of weight, pallor of mucous membrane, debilitation, list-diarrhoea, icterus and rough hair coat. Impression smears from the liver nodules revealed the presence of numerous developmental stages of *Eimeria stiedai*. At necropsy, an enlarged liver with multifocal whitish nodules of 1 mm to 1 cm size on the surface and throughout the parenchyma was seen. The epithelia of the bile ducts were also hyperplastic. Histopathology of the liver showed periportal fibrosis with marked thickening of the bile ductules and infiltration of their walls by mononuclear cells mainly lymphocytes and plasma cells.

Coccidiosis is a protozoan disease which affects domestic animals and birds with trophism especially for epithelial cells. This disease constitutes a major obstacle to successful rabbit production in the tropics. Hepatic coccidiosis or "White liver" of rabbit is common in almost all countries and is due to *Eimeria stiedai*. In traditionally reared domestic rabbits, coccidiosis may cause diarrhoea with mortality, whereas, in commercially reared rabbits the disease occurs sub-clinically with growth retardation and altered feed efficiency. Thus, in heavy infections, especially in young rabbits, the disease may become fatal and cause high mortality. Infected adults become carriers of the disease and act as a source of infection. This paper describes the fatal natural hepatic coccidiosis caused by *Eimeria stiedai* in rabbits of Kashmir valley.

MATERIALS AND METHODS

Ten soviet chinchilla Weaners rabbits were found dead following the clinical signs of loss of appetite, weight loss weakness, pale mucous membranes, distended abdomen and slight diarrhoea for some days before death. At post mortem, a small portion of the tissue from the liver showing gross lesions were collected from dead rabbits of 6-8 wks old and preserved in 10% buffered formalin. Later kept in properly labeled screw caped specimen vials. Standard procedure was followed for the preparation of histopathological slides.

RESULTS AND DISCUSSION

Clinically, the severely affected rabbits showed decreased growth rate, anorexia, debilitation, listlessness, diarrhoea, icterus and rough hair coat. Postmortem examinations revealed increased dirty dull straw colored peritoneal fluid. Hepatomegaly, with presence of discrete yellowish-white nodules of 1 mm to 1 cm size on the surface and throughout the parenchyma, was seen. Smears from peritoneal fluid showed rafts of mesothelial cells. Impression smears from the liver nodules revealed presence of numerous developmental stages of *Eimeria stiedai* corresponding with the stage of the liver lesion.

There was an increase in the thickness of basement membrane with the advanced stage of the lesion. The basement membrane was up to 1-2 µm in thickness forming loop like structures over which resided hyperplastic...
biliary cells containing different stages of the parasite. Some thickened basement membranes were devoid of overlying cells which had desquamated and were present in the ductal lumens suggesting that the basement might have the local defensive role in warding of the coccidial infection. The basement membrane was positive for neutral mucopolysaccharides while as the inflammatory zones and biliary epithelia along with the gametogonic stages of the coccidium reacted positively to the increased acid mucopolysaccharides qualitatively.

The age groups of the rabbits in this study agrees with the observation of earlier authors. These authors reported that young animals are more susceptible to coccidia infection than older animals. The clinical signs of weight loss resulting from anorexia and liver damage are similar to those as reported earlier. The gross and histopathological findings of enlarged liver with whitish nodules, hyperplasia of the bile duct epithelia with infiltration of mononuclear cells were also similar as has been reported by earlier workers. The thickness of basement membrane might have a defensive role in warding off the coccidial infection. This study is in agreement with Darzi et al. It is therefore concluded that natural hepatic coccidiosis due to *E. stiedai* is present in rabbits of Kashmir valley. It is very pathogenic leading to high mortality in rabbits at young age.

Fig. 1 Rabbit liver spotted with coccidian

Fig. 2 Section of rabbit liver showing the presence of Eimeria Spices in the ducts
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REFERENCES