HISTOPATHOLOGICAL EFFECT ON THE HEPATOPANCREAS OF *LYMNEA LUTEOLA* (GASTOPODA) INFECTED WITH CERTAIN LARVAL TREMATODES.

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ABSTRACT:

Histopathological observations were made on infected and non-infected hepatopancreas of snail, *Lymnea luteola.* Infected hepatopancreas either with rediae of cercaria microcaeca (Distome) revealed basically histopathological abnormalities showing the presence of reduced amount of acid mucopolysaccharide. Alteration either histological or histochemical in infected hepatopancreas are associated with the type of size of trematode larvae and degree of parasitism and these were greater in hepotopancreas infected with rediae than in sporocysts.

Keywords:_Histopathology, hepatopancreas, *Lymnea luteola*, cercaria, microcaeca.

INTRODUCTION:

The study of parasites and their relationship to the host requires a multidimensional approach in order to understand the nature of parasitism and the to pathological effect on the hosts, resulting in tissue damages and the pathological changes in the snails *Lymnea luteola* becomes thin and ballooning, gigahtism of the hosts thick shell (wesenberg-Lund, (1934); Rothschild 1936;Wilson and Dension, 1980; Bedse,1986)

Histopathological changes in mollusks associated with larval trematode infections have been described by several worker. (cheng and snyder1962; Porter 1967;southgate 1970; Moore and Halton

1973; Mohandas 1974;karyakarte and Yadav 1976. Manohar and rao 1977.) Further histochemical changes in parasitized digestive glands have also been investigated (James and Bowers 1967; southgate 1970;Reder, 1971;Dennis et. el 1974; Anteson and William, 1975;Bedse, 1986;Hyalij 1988;Basch, 1991;Huxham et.al1995.Gorbushin and Levakin ,1999,Snyder, 2004; Khalil, 2002; Johnson and clayton, 2003; Criscione and Bloun, 2004; and Pough et.al., 2005).

In the present study, besides histopathology of the snail tissues, the histochemical result for are more in non-infected snails, are present in acid mucopolysaccharide large quantities. The amount is fairly less in lightly infected hepatopancreas.

MATERIALS AND METHOD:

The snails, *Lymnea luteola* were collected from freshwater habitats of chankapur dam in Nashik district, Maharahstra. For histopathological localization of the acid mucopolysaccharide methods were by Axmanner (1947) and Bonhag, 1955 for histopathogical protein, were those by Bensley and Gersh, (1933) localization paraffin sections were cut at 7 µm while frozen sections were cut at 10µm.

RESULT AND DISCUSSION:

Of 922 *Lymnea luteola*, 207 species were infected with cercaria microcaeca. The reduction in the quantities of acid mucopolysaccharide is noted by various authors in different snails. krishna and Simha (1977) reported that the degree of depletion of is direct correlated with the degree of infection in *Lymnea luteola* with furcocercous cercaria. Depletion of host , there w acid mucopolysaccharide as an increase of the same in the developing parasites. The histochemical results for acid mucopolysaccharide are more or less same in the hepatopancraes of the snail. In non-infected snails, acid mucopolysaccharide are present in large quantities. The amount is fairly less in lightly infected hepatopancreas. when the infection is at its maximum only traces of acid mucopolysaccharide are observed. It is noted here that the developing stages of cercariae and also the cercariae show the presence of considerable quantity of acid mucopolysaccharide.

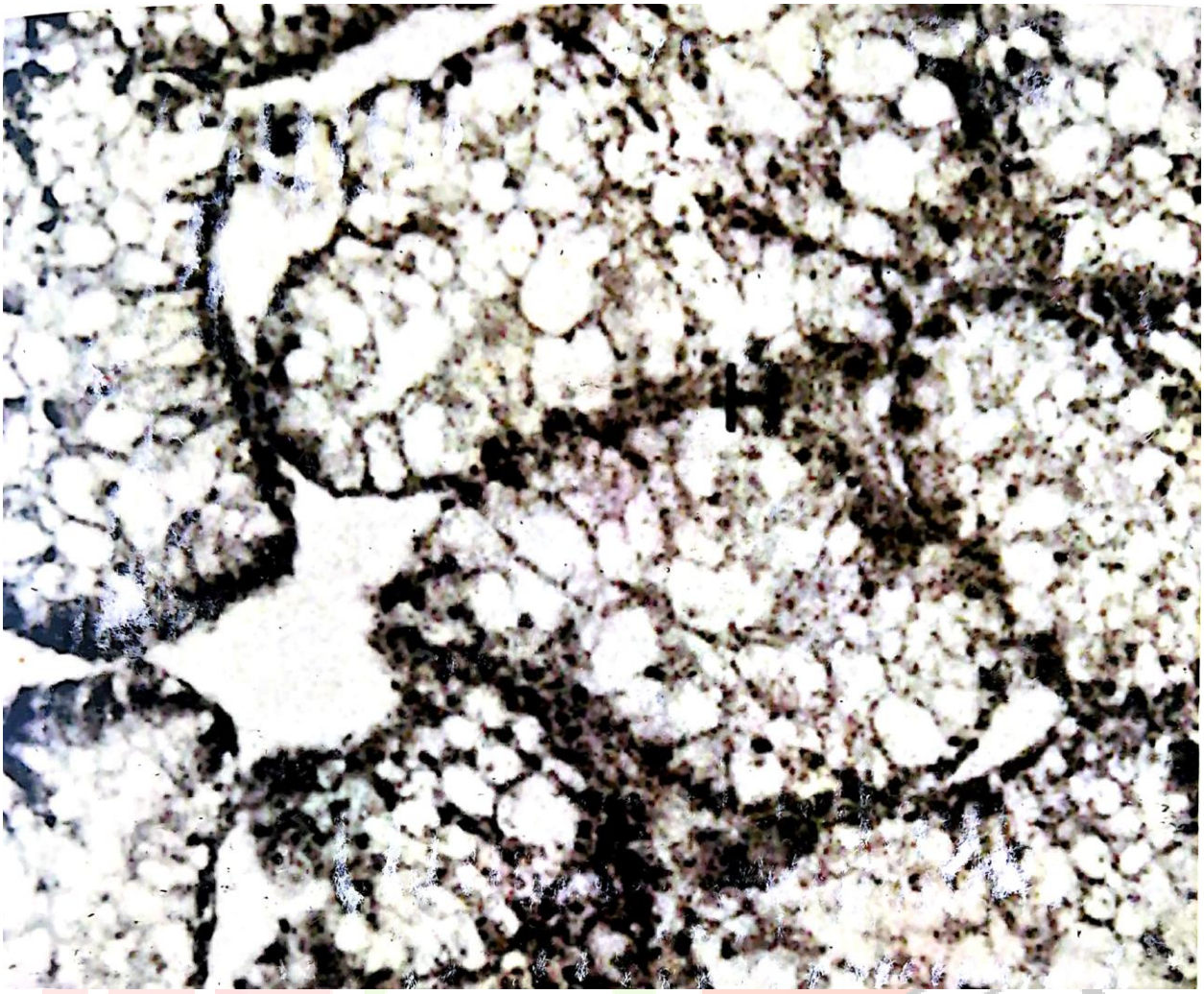

Figure 1.1 Section of non-infected hepatopancreas of *Lymnea luteola* showing the presence of acid Mucopolysaccharide (Alcian blue) X 400.

Figure 1.2 Section of hepatopancreas of *Lymnea luteola* infected with *Cercaria Microcaeca* n.sp. showing the presence of reduced amount of acid Mucopolysaccharide (Alcian blue) X 400

H: Hepatopancreas

S: Sporocyst

CONCLUSION:

The present study has shown histochemical observation in *Lymnea luteola* infected with crecaria, microcaeca that the presence of acid mucopolysaccharide ,the Alcian blue test and Millions reaction was strongly positive in hepatopancreas of non-infected snails fig-1.2 &1.2. The intensity of the staining reaction showed the presence of large quantities of acid mucopolysaccharide .The lightly infected hepatopancreas of snail with cercaria microcaeca were slightly positive for and moderately positive for Alcian blue indicating presence of only traces of acid mucopolysaccharide fig: 1.1& 1.2. It is noted that depletion of host acid mucopolysaccharide , there was an increase of the same in the developing parasites. Germ balls developing within the sporocyst have acid mucopolysaccharide in their bodies. Fully developed cercariae had large deposits of acid mucopolysaccharide in there suckers, in the tail and in the parenchyma. acid mucopolysaccharide granules were also seen associated with the body wall of sporocysts. stored protein in the body wall of sporocyst have been reported by Ginetsinskaya (1960) and Gilbertsen, D.E. (1967)James and Bowers(1967)Krishna(1979).

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