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The serum cholesterol changes in infected *Perdicula asiatica*

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Abstract

The cholesterol was the probable source from which body synthesizes other steroids. Under normal conditions, acetyl-coa which was the precursor for the synthesis of cholesterol. But in pathological conditions, most of the Acetyl-coa was utilized in the Kreb's cycle to release extra energy needed for the host as well as the parasite. Therefore, cholesterol precursor molecules may not be available for syntheses of cholesterol. Hence this may lead to a decrease in the cholesterol content.

Keywords: serum cholesterol, infected, *Perdicula asiatica*

Introduction

It is common sterol of wider distribution in almost all the animal tissues. It also occurs in the blood but the blood cholesterol occurs in two forms namely the free and the esterified cholesterol. The latter occurs in association with α and β globulins to form lipoprotein complex. In the plasma, both forms of the cholesterol occur whereas in red blood corpuscles only the free cholesterol occurs.

It is synthesized in the liver, skin, gonads and adrenal glands. However a lesser degree of synthesis occurs in almost all organs. The main function of cholesterol is to act as a precursor for the synthesis of steroid hormones, bile salts and vitamin 'D'. High quantities of it may be pathogenic in causing artero-sclerosis but the absence of cholesterol is also pathogenic. Therefore a constant serum cholesterol has to be maintained in almost all the animals especially vertebrates. But such type of maintenance shall not be possible in pathological condition. It is a well known fact that helminths do cause pathogenicity due to which the blood cholesterol content may be altered. Such alteration of cholesterol has been worked out by few workers like Petriello and Hardy, 1975 [9], Kameswari 1978 [3], Krishnayya, 1988 [4]. As the host of the present study *Perdicula asiatica* is left unscreened with regard to post-helminth infection serum cholesterol changes due to *Primasubulura alata* infection, as an attempt was made.

Materials and Methods

The experimental material of the present study viz, *Perdicula asiatica* were collected from different areas of Hyderabad. They were brought to the laboratory and maintained 24 hours to acclimatize to laboratory condition. The blood was collected directly from the cardiac puncture into a dry and clean test tube without adding any anticoagulant.

It was left in dark for 30 minutes and the blood was allowed to clot at the room temperature. The blood clot was separated from the wall of the test tube and it was centrifuged at 2000 rpm for 30 minutes. The serum was collected and stored in a refrigerator for the experimental assay. After collection of blood, they were decapitated and cut open. The sex of the host was recorded and the digestive system was isolated in physiological saline. The intestine was screened for *Primasubulura alata* infection when this nematode was present, host and the serum were taken as infected ones and in their absence host and the serum were treated as controls.

For biochemical parameters the serum from normal and infected male and female hosts were used. The cholesterol content, were estimated by the method of Abell *et al.*, (1952) [1].

Results

The results obtained on the serum cholesterol changes in male and female host *Perdicula*

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asiatica due to the nematode infection. *Primasubura alata* are shown in the tabular column. They suggest that the serum cholesterol content in the normal male and female hosts is 213.42 ± 31.4 and 264.68 ± 34.24 g/100 ml respectively. Upon helminth infection, it has been decreased by about 146.9 per cent in males and 173.3 per cent in females. These results are highly statistically significant.

Table 1: Cholesterol content in the *perdicula asiatica*

Type	Control	Infected	Change	% Change	'P' Value
Male	213.42	86.42	-127	-146.9	>0.001
S.D.	± 31.4	± 21.4			
Female	264.68	96.84	-167.8	-173.3	>0.001
S.D.	± 34.24	± 19.42			

Values expressed as μ gms/100 ml serum

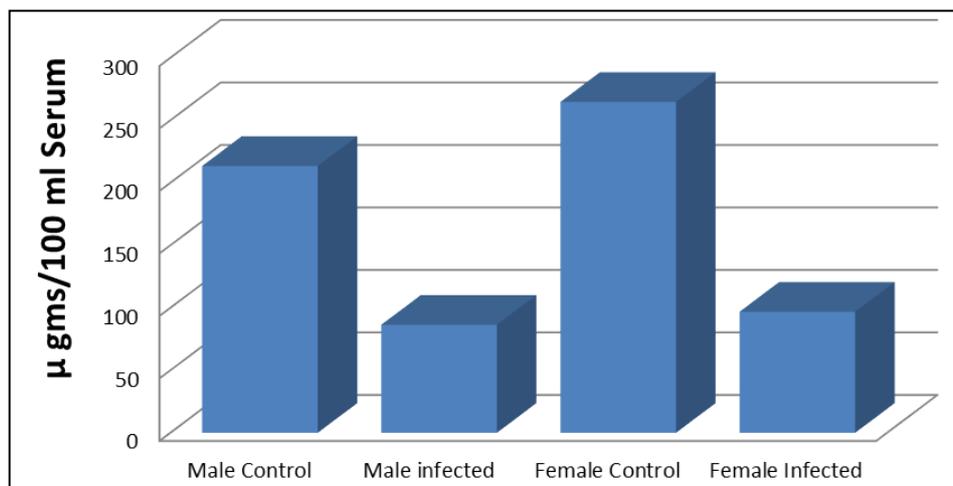


Fig 1: Cholesterol male female control and infected

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