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Primasubulura alata: The total serum protein changes in infected *Perdicula asiatica*

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Abstract

Helminth infections bring about pathological changes in the organs of infected hosts. To repair the tissue damage, proteins are utilized and source of such proteins are the food materials of animals. They are not only responsible for tissue repair, but also play a major role in protecting the body from pathogens. The total serum protein level has estimated biochemically.

Keywords: Primsubulara alata, Perdicula asiatica, helminth infection, serum, protein

Introduction

It is a well-known fact that helminth infections bring about pathological changes in the organs of infected host. To repair the tissue damage, proteins are utilised and a source of such proteins are the food materials of animals. They are not only responsible for tissue repair but also play a major role in protecting the body from pathogens. During any invasion, tissue damage occurs and this in turn increases the body protein requirement. Further, in the post helminth infection period, Considerable increase occurs in the antibodies to protect the body from invading organisms. All these physiological changes are well reflected in the blood and, therefore the study of serum proteins is of much help in understanding the degree of helminth pathogenicity. Such study has been carried out by a number of workers like Khatnoon, H., Ansari, J.A. 1980^[9], Sharma, 1967^[14]; Ratliff and brown, 1968; ^[13] Awwad *et al.*, 1973^[3]; Cohen, 1976^[5]; Anderson *et al.*, 1977^[11], dessouky and moustafa, 1978^[1]; Joshi 1979^[8]; Atta *et al.*, 1981^[2]; Mohan Reddy 1985^[12]; Stewart *et al.*, 1978^[15]. Krishnayya, 1988 and Dharma goud, 1991^[6].

In the present investigation, the author had made an attempt to study the serum total protein changes in *Perdicula asiatica* due to *Primasubulara alata* infection.

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 for 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 on the blood was allowed to clot at the room temperature.

The blood clot was separated from the wall of 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 the collection of blood they were decapitated and cut open. The sex of the host was recorded on the digestive system was isolated and physiological saline. The intestine was a screened for *Primasubulara alata* infection when this nematode was present, host and the serum were taken as infected ones and in their absence hosts and the serum were treated as controls.

For biochemical parametres the serum from normal and infected male and female hosts were used. The total protein contents were estimated by the method of Reinhold, Steward and Gilman (1946)^[13].

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Results

The results obtained on the serum total protein content changes in *Perdicula asiatica* in the post helminth infection period are shown in the tabular Column. They suggest that serum total protein content of male and female host was 8.68 ± 0.24 and 9.41 ± 0.134 mg/100ml of serum respectively. Due to helminth infection the serum protein content was decreased by 55.5% in males and 63.8% in females respectively. These changes are statistically significant.

Table 1: Serum total proteins content in *Perdicula asiatica*

Type	Control	Infected	Change	% Change	'P' Value
Male	8.68	3.858	-4.822	-55.2	>0.001
S.D.	± 0.24	± 0.26			
Female	9.41	3.41	-6.00	-63.8	>0.001
S.D.	± 0.134	± 0.29			

Values expressed are as mg/100 ml serum

Discussion

The investigation of total protein that occurs in the blood of any organism was generally fixed. However, this quantity was not unique in itself to each species but differs in different individuals of each species depending on its

physiological make up. This was an arbitrary portion and prone to change due to a number of factors. One factor was that pathological condition in which it is quite possible that this consistency was altered. Helminths were the known pathogens and they are in the post Helminth infection period to alter the protein content. This fact have been amply being demonstrated by Bhoonsle, 1981^[4]; and Sulochana, 1982^[12]. These changes that are induced in the tissues are manifested in the serum total protein levels. In the present study, these variations in the serum of *Perdicula asiatica* have been assayed. The total serum protein level have been shown a considerable decrease in both the normal infected hosts.

Such decrease can be attributed to the rapid utilisation of nutrient proteins by the parasite for the energy purpose. Sulochana 1982^[12] had showed an increase of total proteins in the infected organs and so also Mohan Reddy, 1985^[12] in the serum of infected host. The decrease of protein in helminth infected organ was justified. It was the reason that excess of connective tissue was laid to repair the mechanical damage caused by the parasites and it may also be due to the accumulation of phagocytes and antibodies. In the present investigations in the serum levels of protein content changes in *Perdicula asiatica* was compared to the observations of Krishnayya 1988 and Dharma goud 1991^[6].

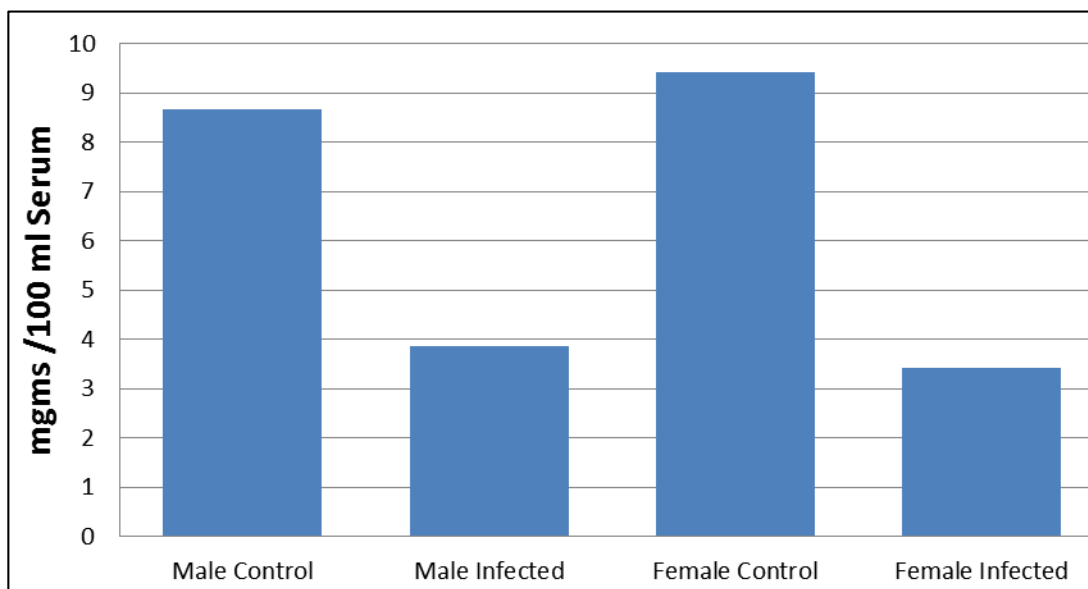


Fig 1: Total protein

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References

1. Anderson PR, Berret S, Brush PJ, Herbert GN, Parfitt JW, Patterns on DSP. Biochemical Indicators of Liver Injury Is Calves With Experimental Facioliasis, Veterinary Record. 1977; 100(3):43-45.
2. Atta AM, Magalshesh A, Aranjjo, Rangel HDE. Schlstosoma Mansonii Infection It Changes In Serum Protein Levels And Electrophoretic Profiles Deteriment By Quantiative Immune Electropheresis, Revista De Saude Pubiica 1981; 15(2):194-204.
3. Awwad S, Nour AM, Khalifa AS, Shafa AL, Tolba KA. Changes in the Blood *Volume* Serum Proteins and Lipo

- Proteins in Common Prasitic Infections in Egyptian Children, J Tro. Med. Hyg. 1973; 76(7):163-168
4. Bhonsle HR, Narasimha Rao L, Anythili Dh I Mahi. Host-Parasite Relationship and Carbohydrates Of. - Tanqua Tiara, Lins Tow, 1879, Proc. Aca. Sci. (Animalsci) 1981; 90(5):585-591.
5. Cohen. Comparative Pathology of Fish and Human Laboratory Investigation. 1976; 34(3):343,
6. Dharma Goud K. Studies On Certain Aspect Of A Poultry Parasite Raillietina Cesticillus (Cestoda), Ph.D. Thesis. Osmania University, Hyderabad, (A.P.) India, 1991.
7. Dessouky MI, Moustafa H. Some Haematological and Biochemical Studies on Fasciola Infected Buffaloes Assicit Veterniary Med. J Pul. 1978; 3(5):177-187.
8. Joshi BO. Biochemical Changes In The Liver And Blood Of A Fresh Water Fish Rita Rib Infected With A

- Trematode Opisthorchis Pedicellata, Folia Parasctologica. 1979; 26(2):143-144.
9. Khatnoon H, Ansari JA. Biochemcial Studies on Blood Alteration in Experimental Setaria Cervi Infection Helminthologia. 1980; 17(3):197-206.
 10. Krishnayya D. On Some Aspects Of Serum Bio Chemical Changes _ In · 1:Rop Idonotus P Iscator Due To Tanqua Tiara (Linstow, 1879) Infection, Ph.D. Thesis, Osmania University, Hyderabad, 1991.
 11. Krishnayya D. On Some Aspects of Serum Biochemical Changes in Tropicodonotus Piscator Due to Tanqua Tiara (Linstow, 1879) Infection. Ph.D. Thesis. Osmania University, Hyderabad, 1991.
 12. Mohan Reddy P. Host-Parasite Relationship, Some Biochemicai Aspects Of Carbohydrate And Protein - Metabolism In Calotes Vesicolor Ph.D. Thesis, Kakatiya University, Warangai, Reinhold, Steward, 1985.
 13. Gilman. Am. J. Clin. Pathol. Tech. Sec, 10, 40 Quoted In Hawk's Physiological Chemistry, Ed. Oser, B. L, 1954. Mc. Gram Hill Book Company, New York, 1946.
 14. Raltiff CR, Brown MO. Some Host Responses to Nematode Infections. Amer. J of Gastroenterology, 1968; 50:442-448.
 15. Sharma KML. Observations Made on Haematological and Electrophoretic Analysis of Serum Proteins From Heifer Naturally Infected with Lungg Worm, Dictyo Caulus Viviparus Lndi. Veter. 1967; 44(6):489-493.
 16. Stewart GL, Fischer FM, Ribelles, Chiapetta V, La Brum R. Trichinella Spiralis. Alterations of Blood Chemistry in the Mouse Expt. Parasitol. 1978; 45(2):287-292.
 17. Sulochana T. Studies On Some Post Helminth Infection Histochemicai and Histopathologicai Changes in the Intestine of Few Vertebrates Ph.D. Thesis, Kakatiya Kuniversity, Warangai, 1982.