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## Quantitative estimation of serum albumin changes in infected *Perdicula asiatica*

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### Abstract

Albumins are the nutrient and carbohydrate free proteins. The important functions are for maintenance of acid base balance, Osmotic pressure of the blood and detoxification. There is a decrease in the albumin content of the Serum more in females. This may be its utilization by the parasite as nutrient molecules.

**Keywords:** quantitative estimation, serum albumin, perdicula asiatica

### Introduction

Albumins are the nutrient and Carbohydrate Free proteins. They constitute slightly more than 50% of the serum proteins. They are produced in the liver and transported into the blood. From the blood, they get circulated throughout the body providing a nutrient protein molecules. They also occur in association with other macro molecules like hormones, lipids, bilirubins. They Possess high affinity for free fatty acids and negatively charged ions, They endowed with property of binding to anions very effectively. This property makes them to act as carrier proteins. Therefore, they have a very important function to perform in the body, i.e., detoxification. They bind to fatty acids that are insoluble, toxic and haemolytic and transport to the liver as soluble and insoluble non-toxic fatty acids.

They also have another important function to play i.e. the maintenance of acid base balance and osmotic pressure of the blood. Due to their smaller molecular size and larger quantity they occur widely distributed and impart the capacity of water retention. Their absence, therefore, leads to the accumulation of fluids in the tissues and cause edema.

Albumins thus have a greater role to play in the maintenance of homeostatic condition of the body and a study of its content helps in understanding the biochemical nature of the tissue. In helminth infection, there is every possibility that albumin content may *get altered* in the infected hosts. A study of the albumin alteration helps to understand the degree of helminth pathogenicity. Some of the pertinent references in this regard are those of Dessousky and Moustafa, 1978 [4] Anderson, 1977 [1]; Stewart, 1978 [12]; Khatnoon and Ansari, 1980 [6]; Baiburiev and Kushchenko, 1978 [3]; Rama Hanumantha Rao, 1985 [10], Mohan Reddy, 1985 [8] and Pathak and Gaur, 1981 [9]. Krishnayya, Dessousky and Moustafa, 1978 [4], 1988 and Dharma Goud, 1991 [5].

### 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 anti coagulant. 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 hosts and the serum were treated as controls.

For biochemical parameters the serum from normal and infected male and female hosts were used. The albumins contents were estimated by the method of Reinhold Stewart and Gilman (1946) [11].

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## Results

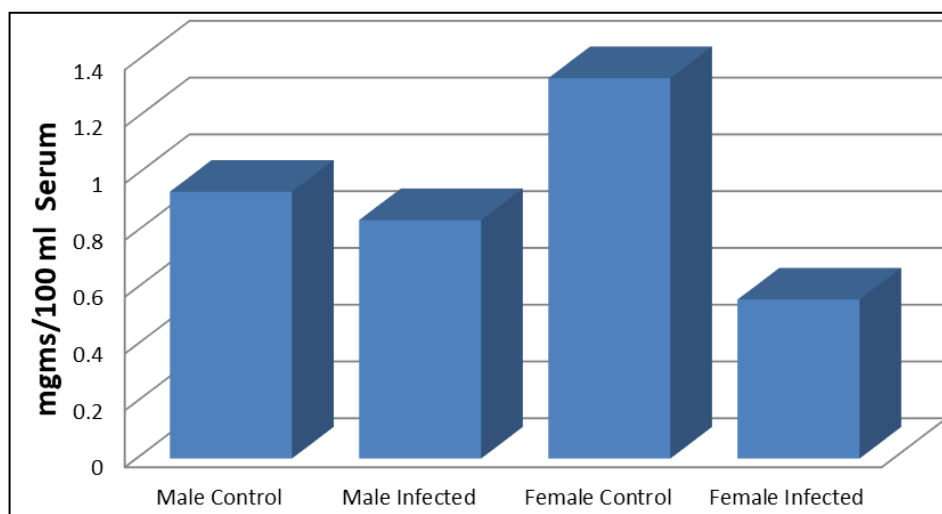
Results obtained on serum albumin content changes in *Perdicula asiatica* are shown in the tabular column. They indicate that normal albumin level in male and female hosts was  $0.94 \pm 0.16$  and  $1.34 \pm 0.32$  mg/100 ml serum respectively.

The worm infection have been decreased its content by 10.6% in males and 57.3% in females, The decrease only in the latter was statistically significant.

**Table 1:** Albumin content in *Perdicula asiatica*

Type	Control	Infected	Change	% Change	'P' Value
Male	0.94	0.84	-0.10	-10.6	N.s.
S.D.	$\pm 0.16$	$\pm 0.21$			
Female	1.34	0.56	-0.78	-57.3	>0.001
S.D.	$\pm 0.32$	$\pm 0.03$			

Values are expressed as mg/100 ml Serum



**Fig 1:** Albumins male female control and infected

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