

HEMATOLOGICAL MANIFESTATIONS DUE TO HELMINTHIC INFECTION IN THE COLUMBIA LIVIA

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Abstract

The preset study deals on the observation of hematological manifestation in Columbia livia due to mixed helminthic infection with cestode and nematode parasites. Out of 145 host birds examined, 85 were found infected with either singly or mixed infection. For study of effect on blood parameters only 41 (17 males and 24 females) birds were taken. The significant increase was observed in the size of RBC and number of WBC, MCV & MCH and however, reduction in the count of RBC, Hb, PCV in infected Gallus as compared with normal host bird. Thus, the haematological manifestations of the infected host bird Gallus gallus domesticus show that high infection (mixed ones) cause macrocytic anaemia, lymphocytosis, etc due to deficiency of related factors.

Keywords: Helminthic infections, Columbia livia, Manifestations due.

INTRODUCTION

The parameters of haematological are important in diagnosing the structural and functional status of the host's body. In last few years many of the works on haematological parameters of vertebrates have been found related with toxicology but only few works have been reported in relation to haematological aspect of vertebrates related with parasitic infection. Infection due to helminth parasites has been a major health problem and may be considered an instance of physiological stress and only little information is

available so far available from literature on the haematological parameters of birds and fishes related with tapeworm and nematode infection in the domestic pigeon, *Columbia livia*.

Therefore, in the present communication attempts have been made to analyze and correlate the haematological parameters of normal and infected domestic pigeon, *Columbia livia*.

MATERIALS AND METHODES:

Blood sample were collected aseptically by using sterile and needle either directly from the heart and wing vein the freshly slawghtered pigeon in the laboratory or the market shop. Immediately, the collected blood sample was transferred to sterile glass bottles containing EDTA as anticoagulant. For estimation of Hb, PCV, MCV and determination of WBC and RBC counts the routine methods were used.

S.No.	Blood Parameters	Normal Host		Infected Host	
		Male (n ₁ =18)	(female n ₂ =25)	Male (n ₁ - 18)	Female (n ₂ =25)
1	RBC (x10 ⁶ /mm ³)	26.2±2.3	25.4±1.8	24.2±1.2	20.0±1.5
2	WBC (x10 ³ /mm ³)	2.3±0.27	1.99±0.33	2.96±0.32	2.56±0.25
3	Hb%	14.2±0.81	13.5±0.6	10.2±0.6	10.2±0.9
4	PCV%	41.0±1.8	38.5±1.2	32.5±3.2	31.2±2.1
5	MCV%	134.25±2.21	131.4±1.7	162.7±4.5	159.45±4.6
6	MCH%	45.82±1.16	43.83±1.16	49.25±2.5	48.32±1.7

Table: Showing blood parameters of normal and injected *Columbia livia*

RESULTS AND DISCUSSION:

The data on the blood parameters of *Columbia livia domesticus* both normal and infected, sexwise, carrying mixed infection are presented in Table.

The present study indicates a very interesting feature that accounts for infected birds show restlessness and different types of helminth parasites produce different types of

changes in the haematological parameters in birds, such as which are more-or-less comparable to those in mammals including man. The much similar results such as decrease in RBC Count and increase in WBC count in the infected host when compared to normal host. The physiological significance of leucoeytes such as their phagocytic actions, releasing toxin globulins from the lymphocytes must be stressed. For instance, the role of golbulins in tissue repair and blood clotting seem obvious and thereby increase in no of lymphocytes during parasite infection can be explained.

CONCLUSION:

Due to helminthic infection whether tapeworm or nematode or even mixed ones there in change in the blood parameters of *Columbia livia domesticus*. For instance, decrease in RBC count but increases in RBC size may be due to deficiency of Vit B₁₂ a maturation factor for RBC as leading to anaemia, macrocyfosis, anisocytosis and poikilocytosis accompanied by reduction in Hb and PCV-Values.

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