

RRST- Zoology

Haematological Observations of *Gallus gallus domesticus* Infected with *Cotugnia digonopora*

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Article Info	Abstract
*Corresponding Author	The study focused on the observation of haematological parameters in <i>Gallus gallus domesticus</i> which is naturally infected with cestode parasites <i>Cotugnia digonopora</i> . Out of 43 <i>Gallus gallus domesticus</i> , 28 are infected with cestode parasite. The significant increase in size of RBC and number of WBC; however reduction in the count of RBC, Hb, PCV, MCV in infected <i>Gallus gallus domesticus</i> as compared with normal one. The haematological parameters of the infected bird <i>Gallus gallus domesticus</i> shows high infection cause macrocytic anaemia, lymphocytosis due to deficiency of related factors.
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©ScholarJournals, SSR	Key Words: <i>Cotugnia digonopora</i> , <i>Gallus gallus domesticus</i> , Haematological parameters

Introduction

Haematological studies are important in diagnosing the structural and functional status of the body. Haematology is the study of blood, and its different components. The vertebrates are inevitable subjected to various kinds of stresses that may lead to down regulation of immunity. Hence, to start the development of infection and diseases may occur. In last few years many authors are working on haematological parameters of vertebrates in related with toxicology but not much work done on haematological aspect of vertebrates which related with parasitic infection. Tapeworm infection is a major health problem in *Gallus gallus domesticus* because it affects the normal blood parameters and produces anemia, lymphocytosis etc. The study of haematological Parameters is very important in recent era. Only little information is available to the haematological parameters of birds and fishes. Occurrence of pernicious anaemia due to cestode parasite *Diphyllobothrium carriers* [1] infected to fishes. Various workers studied haematological investigation of some animals due to parasitic infection. i.e. on pigeon[2], on Great tit [3], on local duck[4] of

Assam, of normal and infected *Capra hircus*[5] by nematode infection and on normal and infected *Columba livia* [6] parasitized by helminthic infection.

In the present communication, attempts have been made to analyze and correlate the haematological parameters of normal and infected *Gallus gallus domesticus*.

Materials and Methods

Blood sample were collected aseptically with sterile syringe and needle either from heart and wing vein. Immediately after collection the blood was transferred to sterile glass bottles containing Ethylenediamine tetra acetic acid (EDTA) as anticoagulant. Estimation of Hb, PCV, MCV and determination of WBC, RBC using the routine methods [7].

Results and Discussion

The data on the hematological values of *Gallus gallus domesticus* both uninfected and infected with cestode parasites are presented in tables 1.

Table I - Showing haematological status *Gallus gallus domesticus* for normal and infected with *Cotugnia digonopora* (Pasquale, 1890) Diamare, 1893

Sr.No.	Blood Parameters	Normal Host	Infected Host
1	RBC 10 ⁶ /cumm	27.5 ± 2.7	19 ± 1.2
2	WBC 10 ³ /cumm	2.25 ± 0.28	2.9 ± 0.22
3	Hb %	13.5 ± 0.7	9 ± 0.9
4	PCV %	40 ± 2.4	31 ± 3.2
5	MCV %	133.48 ± 2.28	162.7 ± 7.7
6	MCH %	44.93 ± 1.16	47.2 ± 2.6

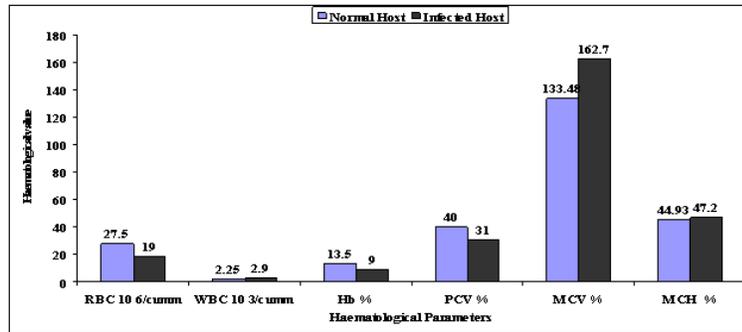


Figure 1- Graphical representation showing haematological status *Gallus gallus domesticus* for normal and infected with *Cotugnia diagnopora* (Pasquale, 1890) Diamare, 1893

The present study indicates a very interesting feature that accounts for infected birds show restlessness and different types to helminths produce different types of changes in haematological parameters in birds [8] which is quite comparable to those in mammals including man. The similar results i.e. decrease in RBC count and increase in WBC count in infected host as compare to normal host also reported [9] from albino rats infected with Plasmodium parasites. The erythrocyte count of 6.4 million/cu in normal, while decrease to 4.6 million/cu during acute infection. As well as he suggests the physiological significance of leukocyte like their phagocytic action, release toxin globins from lymphocytes. The role of globins in tissue repair and blood clotting, result in their increase during parasitic infection. The similar finding also recorded of blood parameters from *Capra hircus* infected with nematode infection [5]. Increase in WBC count, MCV while decrease in RBC count from normal and infected *Columba livia* [6].

Conclusion

Due to the cestode infection the occurrence of deficiency of Vitamin B12, may result in formation of large but few RBC. This type of results shows formation of anaemia i.e. macrocytosis, anisocytosis, and poikilocytosis.

Conclusively it can be said that due to tapeworm infection there is change in blood parameters of *Gallus gallus domesticus*.

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