

# PREVALENCE OF ANAEMIA IN DOGS FROM JAMMU REGION

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Anaemia is defined as the decreased ability of blood to supply tissues with adequate oxygen for proper metabolic functions (Hoff brand and Pettit, 1993). It is characterized by reduction in the haemoglobin (Hb), haematocrit (PCV) or total erythrocytic count (TEC) per unit volume of blood in a normally hydrated animal (Aiello 1997). The common signs associated with anaemia are; paler mucous membranes, cyanosis, weakness, tachypnoea, dyspnoea and sometimes icterus in acute cases of anemia. Lethargy, splenomegaly and heart murmurs are seen in chronic cases. Physiological compensation for decreased RBC mass occurs by decreased Hb affinity, redistribution of blood flow and increased cardiac output.

## Materials and methods

The present study was conducted on the Dogs irrespective of sex and breed, presented to Teaching Veterinary Clinical Complex, R. S. Pura, Jammu. The dogs were screened for the presence of anemia. The dogs with Hb less than 12 gm/dl were considered as anemic. A total of 137 dogs were screened for the prevalence of anaemia and 10 dogs were kept as control. The physiological parameters viz a viz rectal temperature, heart rate and

respiratory rate were recorded in both healthy as well as study group.

## Results and discussion

Out of these 137 screened, 65 dogs were having Hb value less than 12 g/dl indicating 47.44 per cent incidence of anemia. A higher prevalence of 68 per cent has been reported in state of Punjab by Moninder (2003) and a lower incidence of 37.97 per cent was recorded in dogs of Palampur valley of Himachal Pradesh. The variations in the incidence among different states could be due to various reasons like nutritional and managerial practices.

Out of 65 anemic dogs, 7 (5.10%) were having severe anaemia as Hb level was less than or equal to 4 g/dl, 14 dogs (10.21%) were having less severe anaemia as Hb level was more than 4 g/dl, but less than 7 g/dl and 44 dogs (32.13%) were having moderate anaemia as Hb level was more than 7 g/dl but less than 12 g /dl (Table 1). Anaemia occurs more in young pups because young ones are more susceptible to internal and external parasites which results in blood loss. Iron deficiency anaemia is common in young animals due to only milk feeding and small iron reserve (Cotter 2003).

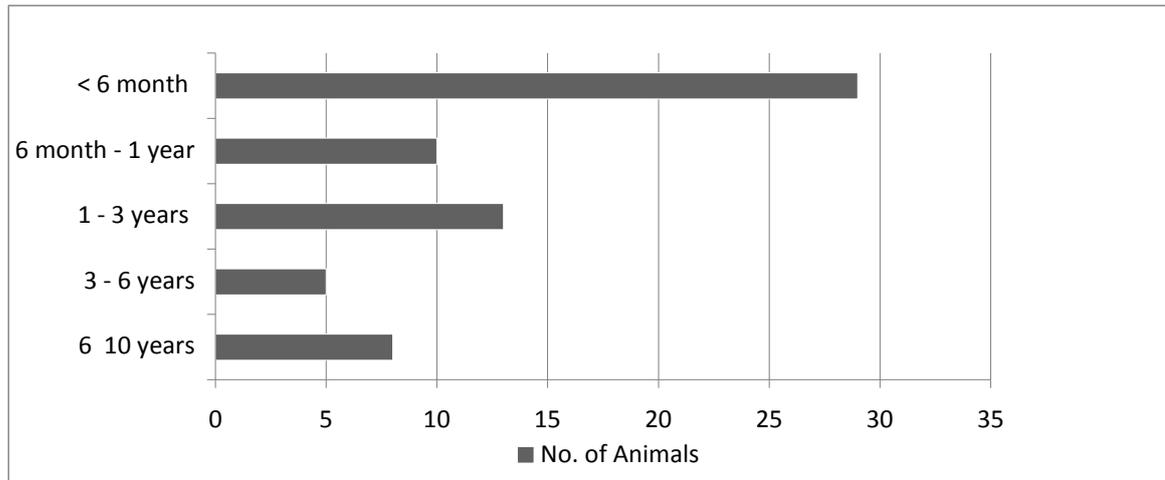
**Table 1. Prevalence of anaemia in dogs.**

S. no.	Hemoglobin Range	No. of Dogs	Type	Prevalence (%)
1	4.00 g%	7	Severe	5.10
2	>4 – 7g%	14	Less severe	10.21
3	>7 – 12g%	44	Moderate	32.13
	<b>Total</b>	<b>65</b>		<b>47.44</b>

Age wise prevalence of anaemia was found to be highest in dogs below 6 months (44.61 %), followed by 15.38% in 6 month to 1 year, 20.00 % between 1 to 3 year and 12.32 %

between 6 to 10 year age groups. Lowest prevalence was found in dogs in the age group 3 to 6 years (7.69 %) (Fig 1).

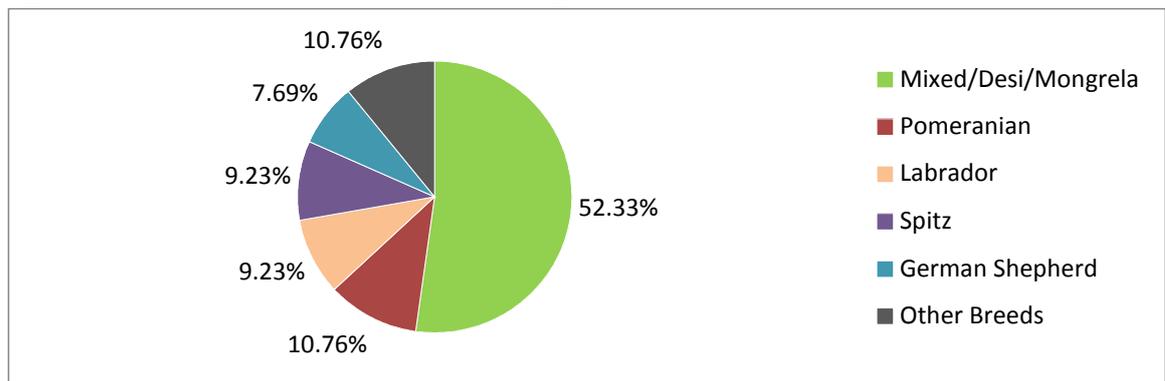
**Fig 1. Age wise incidence of anaemia in dogs**



Breed wise incidence was maximum in mixed/desi/mongrels i.e. 52.33 per cent, followed by Pomeranian i.e. 10.76 per cent, Labrador and Spitz i.e. 9.23 per cent, German shepherd i.e. 7.69 per cent and followed by other breeds (Saint bernard, Bull dog, Boxer

and Pointer) i.e. 10.76 per cent (Fig 2). The difference in the hematological parameters does exist between different species (Jain 1993) and certain breeds are more prone and susceptible to anaemia (Cotter 2003).

**Fig 2. Breed wise incidence of anaemia in dogs**



Out of these 137 screened, 20 (30.76%) were observed to be due to digestive disorders viz. gastritis, enteritis and gastro-entritis and helminth infections viz *Dipylidium caninum*, *Ancylostoma caninum* and *Toxacara canis*. Ectoparasitic infestations were responsible for anaemia in 9.23%, hepatic insufficiency in 9.23%, haemoprotozoan infection (babesiosis) in 7.69%, and renal failure (chronic renal failure) in 1.57% dogs. Other causes like viral infection, Diabetes mellitus, calcium deficiency, intestinal obstruction were responsible for anaemia in 10.76% of cases (Table 2) . Our finding collaborated with the findings of Uppal *et al.* (2009) who reported gastro infection as the leading cause of anaemia in dogs (40%) followed by hepatic insufficiency,

renal infection, diabetes and hook worm infection..

The animals with anaemia showed partial to complete loss of appetite, dehydration varied from mild to severe degree and the conjunctival mucous membrane was slight pale to extreme pale. There was a significant (**P 0.05**) change in the in the mean respiration and heart rate between the healthy control and anemic dogs, however no significant change was observed in mean rectal temperature. The respective mean values of rectal temperature, respiration rate, and heart rate in healthy control were 102.02± 00.18 ° F, 29.16± 0.87/min, and 86.83± 1.19/min, respectively and 101.91± 0.29° F, 41.33± 2.02/min and 111.66±

**Table 2 Etiologies of anaemia in dogs**

S. no.	Causes of aneamia	Number of dogs
1	Helimintic infection (Dipylidum , Ancylostoma and Toxacara )	20 (30.76%)
2	Digestive disorders (gastritis/enteritis/gastro-enteritis)	20 (30.76%)
3	Hepatic insufficiency	6 (9.23%)
4	Ectoparasitic infection (Ticks, Fleas, Lice)	6 (9.23%)
5	Haemoprotozoan infection (Babesiosis)	5 (7.69%)
6	Renal failure (Chronic renal infection)	1 (1.57%)
7	Miscellaneous causes ( Daibetes mellitus, viral infection, G.I.T obstruction and calcium deficiency)	7 (10.76%)
	<b>Total</b>	<b>65</b>

5.36 /min, respectively in healthy dogs. Our findings collaborate with Gear (2009) who reported significant increase in heart rate and respiration rates in anemic dogs without any significant effect on body temperature.

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