

# FACTORS ASSOCIATED WITH OCCURRENCE OF HEPATIC DYSFUNCTION LINKED TO HYPO-ALBUMINAEMIA IN DOGS - AN EPIDEMIOLOGICAL STUDIES

Manshi<sup>1</sup> and Chandan Lodh<sup>2</sup>

<sup>1</sup>M.V.Sc. Student, <sup>2</sup>Professor, Department of Veterinary Medicine, Ethics and Jurisprudence  
Faculty of Veterinary and Animal Sciences, West Bengal University of Animal and Fishery Sciences,  
37 & 68, Kshudiram Bose Sarani, Kolkata-700037, West Bengal.

[Received: 27.01.2023; Accepted: 16.05.2023]

{DOI 10.29005/IJCP.2023.15.1.87-90}

The study was conducted at the Veterinary Clinical Complex, WBUAFS in Belgachia, where a total of 67 dogs were examined, with 18 of them being diagnosed for hepatic dysfunction linked to hypoalbuminemia. The study included pure breed and mongrel dogs of all ages, ranging from one to eight years old of both genders where 12 dogs were males and 6 were females. Hepatic dysfunction linked with hypoalbuminemia was found to be predominant in the age group of 3-7 years (44.5%) and Labrador retriever (27.8%) were the most affected breed. Gender wise occurrence revealed that out of 18 dogs, 12 (66.6%) were males and 6 (33.7%) were females indicating that males were more prone to hepatic disorder related with hypoalbuminemia compared to females.

**Keywords:** Hypoalbuminemia, Canine, Hepatic disorders, Risk factors.

Hepatic disease is one of the top five non-accidental causes of death in dogs. The dogs affected are typically younger, middle-aged adults of any sex, with varying degrees of hepatitis symptoms. Lethargy, depression, weight loss, vomiting, and jaundice were among the symptoms. Female dogs showing indications of anorexia, depression, weakness, polyuria/polydipsia, ascites, jaundice, weight loss, and vomiting were appeared to be more likely to have idiopathic chronic hepatitis (Watson and Bunch, 2009). Breed predisposition which occurs in hepato-biliary disease are most frequently encountered in pure breeds particularly Irish wolf-hound, Australian cattle dogs, Maltese terriers, Cairn terriers, Miniature schnauzers, Yorkshire terriers, Dachshund, Labrador retrievers and Golden retrievers (Ettinger and Feldman, 2005). Hypoalbuminemia results from an underlying disease and is not a disease in itself. Hypoalbuminemia is a common problem found in critically ill dogs and cats and is caused by a serum albumin content of less than 3.0 g/dl (30 g/l), (Gatta *et al.* 2012).

## Materials and Methods

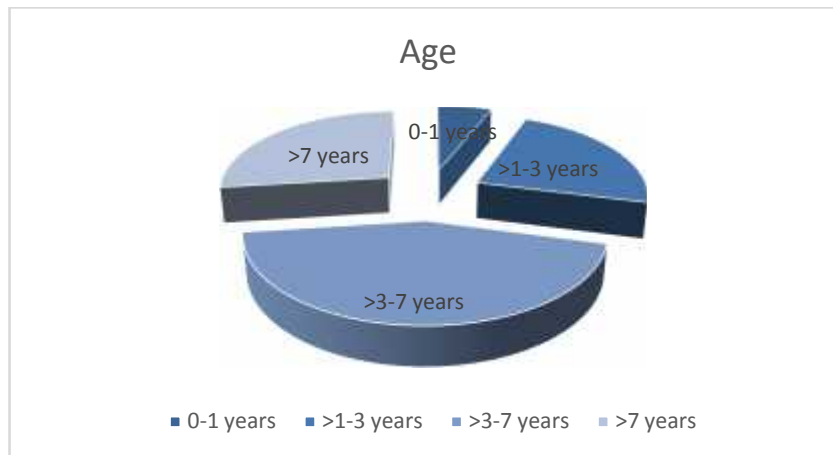
The investigation was carried out

at the Department of Veterinary Medicine, Ethics and Jurisprudence; Veterinary Teaching Complex, F/O-Veterinary Sciences, West Bengal University of Animal and Fishery Sciences, Kolkata, during the period December 2020 to May 2021. Eighteen dogs with hepatic dysfunction linked with hypoalbuminaemia were separated and incorporated in the study. The owners were interviewed in detail about the animals' age, gender, breed, body weight, and clinical signs. Haemato-biochemical investigations were carried out to ascertain hypoalbuminemia related with hepatic disorder.

## Results and Discussion

### *Age-wise occurrence of hepatic disorders associated with hypoalbuminemia in dogs:*

A total number of 18 dogs with hepatic dysfunction due to hypoalbuminemia in dogs were considered for the study. Out of which, 8 dogs (44.5%) were of 3-7 years age group followed by five dogs aged above 7 years (27.3%). Four were young adults of 3 years (22.6%), and least effected were puppies (0-1 year) with 1 dog affected, comprising of 5.6%. These findings were in accordance to the findings of Pradeep (2016).

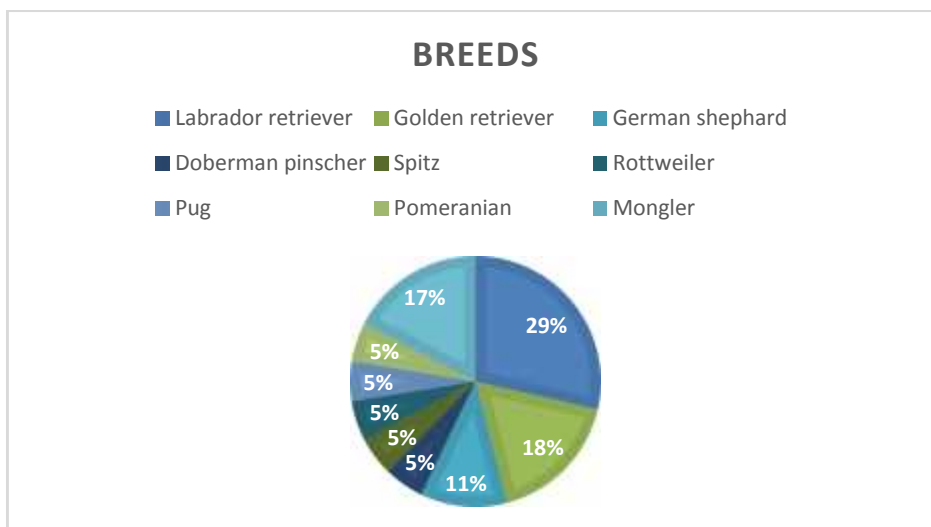


**Fig.1 Age wise distribution of cases with hepatic disorder associated with hypoalbuminemia.**

***Breed wise occurrence of hepatic disorder associated with hypoalbuminemia in dogs:***

This study included pure breeds and mongrel dogs with hepatic dysfunction associated with hypoalbuminemia. Among them, Labrador retrievers had the most cases (52.78%), followed by Mongrel and Golden retrievers with 3 (16.7%) each, German Shepherd with 2 (11.3%) cases and Pug, Doberman pinscher, spitz, Rottweiler and

Pomeranian each with 1 (5.5%) cases, similar findings were made by Das (2012) which showed that Labrador retrievers were the most affected when compared with other breeds. The study conducted by Saravanan *et al.* (2013) found that ascites due to hepatic disorder was observed in higher rates in Pomeranians followed by Labrador retrievers, Boxers, Doberman pinschers, mongrels and Alsatians.

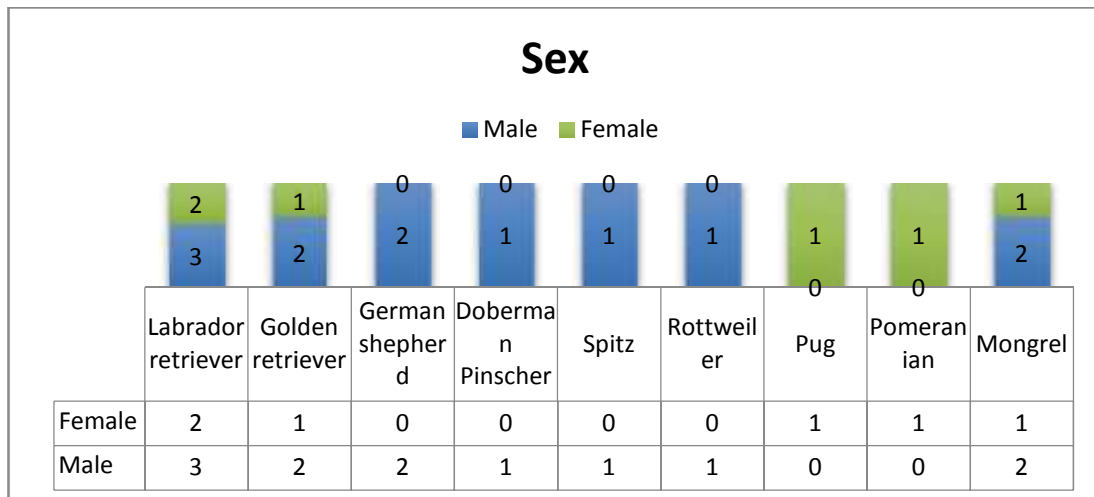


**Fig. 2 Breed wise distribution of cases with hepatic disorder associated with hypoalbuminemia**

***Gender wise distribution of hepatic disorder associated with hypoalbuminemia in dogs:***

Gender wise distribution of hepatic disorder associated with hypoalbuminemia in the present study was found that out of 18 dogs, 12 (66.6%) were

males and 6 (33.7%) were females. It was concluded from the study that male dogs were more prone to hepatic disorder associated with hypoalbuminemia as compared to that of females which was similar to the findings of Saurabh (2010).



**Fig.3 Sex wise distribution of various hepatic disorders related to hypoalbuminemia**

### Conclusions

Hepatic dysfunction linked with hypoalbuminemia was found to be predominant in the age group of 3-7 years (44.5%) followed by >7 years (27.3%), 1-3 years (22.6%) and less than one year (5.6%). The results of a breed analysis found that Labrador retriever (27.8%) were the most affected breed in this study followed by golden retriever and mongrel each with (16.7%), German shepherd (11.3%) and rest Doberman pinscher, Spitz, Rottweiler, pug and Pomeranian with (5.5%) each. Gender wise occurrence revealed that out of 18 dogs 12 (66.6%) were males and 6 (33.7%) were females, indicating that males were more prone to hepatic disorder related with hypoalbuminemia compared to females.

### References

- Das, B.R. (2012). Clinico-biochemical studies on ascites in dogs with special reference to hepatic insufficiency and its therapeutic management, M.V.Sc. Thesis submitted to Odisha University of Agriculture and Technology, Bhubaneswar (Odisha), India.
- Ettinger, S.J. and Feldman, E.C. (2005). Textbook of Veterinary Internal Medicine. *Diseases of the Dog and Cat*, 6<sup>th</sup> edn., Elsevier WB Saunders, Philadelphia, U.S.A. Pp.1299.
- Gatta, A., Verardo, A. and Bolognesi, M. (2012). Hypoalbuminemia. *Internal and Emergency Medicine*, 7(3): 193-199.
- Pradeep, K. (2016). To evaluate hetastarch and amino acid infusion in management of hypoalbuminemia in dogs with hepatic disorders. M.V.Sc. Thesis Submitted to Karnataka Veterinary, Animal And Fisheries Sciences University, Bidar (Karnataka), India.
- Saravanan, M., Sarma, K., Kumar, M., Mahendran, K. and Mondal, D.B. (2013). Therapeutic management of ascites in dogs. *The Indian Veterinary Journal*, 90 (2): 110-111.
- Saurabh, S. (2010). Investigations on Hepatic Dysfunctions in Canine. M.V.Sc. Thesis submitted to Chaudhary Sarwan Kumar Himachal Pradesh Krishivishvavidyalaya, Palampur (H.P.), India
- Watson, P.J. and Bunch, S.E. (2009). Diagnostic tests for the hepatobiliary system. *Small Animal Internal Medicine*. 4<sup>th</sup> edn., Elsevier Mosby, St. Louis, Missouri, U.S.A. Pp.496-519.