

Prevalence of diarrhea in dogs of Kumaon Tarai of Uttarakhand

Sheeba Hussain and A. K. Upadhyay*

College of Veterinary & Animal sciences, G. B. Pant University of Agri. & Tech. Pantnagar, India.

Corresponding author: *A. K. Upadhyay, College of Veterinary & Animal sciences, G. B. Pant University of Agri. & Tech. Pantnagar, India.

Abstract

Diarrhea is a major global public and veterinary health concern and widespread among dogs. The objective of this study was to establish the prevalence of diarrhea in dogs presented to Veterinary Hospital, Pantnagar. From January 2011 to December 2016, 1848 dogs were presented of those feces samples were collected and examined. Overall, about 830 (44.91%) dogs were found positive for diarrhea of different etiology. Season effect exhibits that 47.11% (391) dogs were found suffering with diarrhea during rainy season, while 34.10% (283) during summer and 156 (18.79%) during winter. Maximum 468 (56.39%) pups below 6 months age experienced diarrhea followed by 13-60 months age (20.96%), however, older dogs above 61 months age were found to be least (4.34%) affected. Preliminary etiological examinations revealed that most (33.01%) cases were of bacterial origin followed by unspecified causes (29.64%) and parasitic (23.25%) infestation.

Keywords: Prevalence, Diarrhea, Dogs

Introduction

Diarrhea in dogs may be influenced by numerous factors, including stress, change in diet, primary gastrointestinal pathogens, opportunistic infections, and predisposing disease conditions (Foley and Bannasch, 2004). Primary and opportunistic gastrointestinal pathogens affecting domestic dogs include bacteria, viruses, protozoa, and helminthes (Munoz, *et al.* 2017). Many gastrointestinal pathogens in dogs pose a zoonotic risk to humans, including *Campylobacter* spp, *Salmonella enterica*, *Trichuris vulpis* (whipworm), *Strongyloides stercoralis*, *Clostridium difficile*, *Cryptosporidium* spp, and *Escherichia coli* strain O157H7. Therefore,

managing diarrhea in dogs decreases risk of exposure to zoonotic gastrointestinal pathogens for dogs' owners. The purpose of the study under hand was to determine associations among different variables and diarrhea in dogs.

Materials and methods

All the dogs reported to small animal clinics of College of Veterinary and Animal Sciences during 2011 to 2016 were included for this study. Dogs having symptoms pertaining to any kind of diarrhea were carefully examined and as per requirement confirmed by standard fecal examination, culture and identification of organisms.

Results and discussion

A total of 1848 dogs were reported during 2011 to 2016 and 830 (44.91%) confirmed to have some or other kind of diarrhea concomitant with Day *et al.*, (2012). Season wise examination (Table 1) revealed that maximum (47.11%) cases recorded during rainy season followed by summer (34.10%) and winter (18.79%) as also observed by Fares., (2013) probably due to stressful hot and humid environment making dogs susceptible for gastrointestinal ailments (Mirjam, *et al.*, 2016).

Table 1: Occurrence of diarrhea in dogs of Kumaon Tarai of Utrakhand during 2011-2016 as per season.

Sl. No.	Season	Cases
1	Rainy	391 (47.11)
2	Summer	283 (34.10)
3	Winter	156 (18.79)
Total		830

Figures in parenthesis shows percent presence

Table 2: Occurrence of diarrhea in dogs of Kumaon Tarai of Utrakhand during 2011-2016 as per age.

Sl. No.	Age	Cases
1	0-6 Months	468 (56.39)
2	7-12 Months	152 (18.31)
3	13-60 Months	174 (20.96)
4	61 Months and above	36 (4.34)
Total		830

Figures in parenthesis shows percent presence

Table 2 depicts that dogs between 0 to 6 months age group were found to be most affected (56.39%) because of decreasing maternal immunity (Luo *et al.*, 2014) followed by 13-60 months age (20.96%) because they seek less attention by owner compared to pups, who are darling for children of the house (Rebecca *et al.*, 2005).

Dogs from 7-12 months age are comparatively less infested as everyone take care of them and they get vaccination (Mateus *et al.*, 2014)

According to table 3 majorities of dogs (33.01%) suffered with bacterial followed by unspecified (29.64%), parasitic (32.25%) and mixed (14.01%) causes of diarrhea as also observed by Zhao *et al.* (2016) due to seasonal effect.

Table 3: Occurrence of diarrhea in dogs of Kumaon Tarai of Utrakhand during 2011-2016 as per etiology.

Sl. No.	Etiology	Cases
1	Bacteria	274 (33.01)
2	Parasite	193 (23.25)
3	Mixed	117 (14.01)
4	Unspecified	246 (29.64)
Total		830

Figures in parenthesis shows percent presence

Conclusion

It can be concluded that more number of diarrhea among dogs were recorded during rainy season (47.11%) followed by summer (34.10%) due to hot and humid environment. Moreover, maximum (47.11%) cases evidenced during rainy season followed by summer (34.10%) and winter (18.79%). Dogs between 0 to 6 months age were most affected (56.39%) followed by 13-60 months (20.96%) and 7-12 months old were comparatively less affected (18.31%). Comparatively more dogs (33.01%) suffered with bacterial followed by unspecified (29.64%), parasitic (32.25%) and mixed (14.01%) infection to cause diarrhea.

Acknowledgement

Authors are thankful to in-charge Veterinary Hospital, Pantnagar for the support rendered.

References

1. Day JM, Breitschwerdt E, Cleaveland S, Karkare U, Khanna C, *et al.* 2012. Surveillance of zoonotic infectious disease transmitted by small companion animals. *Emerg Infect Dis* 18 2-10.
2. Fares A. Global patterns of seasonal variation in gastrointestinal diseases. *J Postgrad Med* 2013; 59:203–207.
3. Foley, J. and Bannasch, M. (2004). Infectious diseases of dogs and cats in animal shelters. In: Miller L, ed. *Shelter medicine for veterinarians and staff*. Ames, Iowa: Blackwell Publishing Professional; pp. 235–284.
4. Luo HQ, Song XZ, Wang QY, Duan LC. (2014). Epidemiological investigation of canine parvovirus disease in small animal hospital in Wenzhou area. *Acta Agriculturae Zhejiangensis*. 26(4):887–91.
5. Mateus, T. L., Castro, A, Reibero, J. N. and Vieira-Pintp, M. (2014). Multiple zoonotic parasites identified in dog feces collected in Ponte de Lima, Portugal- A potential threat to human health. *Int J Environ Res Public Health*. 11(9): 9050-9067.
6. Mirjam Duijvestijn, Lapo Mughini-Gras, Nancy Schuurman, Wim Schijf, Jaap A. Wagenaar, and Herman Egberink. (2016). Enteropathogen infections in canine puppies: (Co-) occurrence, clinical relevance and risk factors. *Vet. Microbiology*. 195: 115-122.
7. Munoz, E. T., Gilberto L. V., Centenob, P. A., Sergio A., Cueto, G., Francisco J. M. N., Luis T. G., Karla, N. C., Paulina, P. O., Gerardo, E. Medina, B., Alma, R. T. S., Daniel and Gómez. G. (2017). Prevalence and distribution of intestinal parasites in stray dogs in the northwest area of Mexico. *Austral J Vet Sci*. 49:105-111.
8. Rebecca, J. T., Robertson, I. D., Irwin, P. J., Mencke, N. and Thompson, R. P. A. (2005). Canine gastro-intestinal parasitic zoonoses in India. *Trends in Parasitology*. 21 (1): 42-48.
9. Zhao, Z., Liu, H., Ding, K., Peng, C. Xue, Q. Yu Z. and Xue Y. (2016). Occurrence of canine parvovirus in dogs from Henan province of China in 2009–2014. *BMC Veterinary Research*. 12: 138-150.