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Research Article

PREVALENCE OF INTESTINAL PARASITES IN DOGS OF KUMAON TARAI OF UTTARAKHAND

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ABSTRACT

Worm infestations in dogs' poses a major menace to pet owners as of them are also related with numerous zoonoses. The present study was conducted to determine the prevalence of intestinal parasitic infections in descript dogs and non-descript dogs breeds being reared by owner's of Kumaon Tarai of Uttarakhand between April 2011 to March 2016. A total of 342 faecal samples from were examined by parasitological concentration techniques. The overall prevalence of gastrointestinal parasites was 46.49% (159). *Ancylostoma caninum* (22.13%), *Trichuris vulpis* (15.09%), *Giardia duodenlis* (22.03%) and 32 cases were of different other intestinal parasites identified in canine faecal samples presented to Veterinary Hospital, Pantnagar; indicating an important faecal contamination of the investigated area. There was a significant difference observed between the prevalence of gastrointestinal parasites and the kind of dog breed. However, non-descript dogs were associated with a higher risk of infection as well as those between age group of 1-5 years age. The findings may be a bench mark in the formulating effective prevention and control. Appropriate public health education for dog's owners is necessary to reduce the risks of zoonoses.

INTRODUCTION

Parasitic infections in dogs are commonly recognized as a cause of gastrointestinal disorders (Puebla, *et al.*, 2015). *Toxocara canis* represents the major concern among intestinal helminthes of dogs as it can cause severe infection in humans (Nijsse, *et al.*, 2015). Zoonotic helminths like *Ancylostoma caninum* and *A. braziliensi* are mainly responsible for cutaneous, visceral, ocular larva migrans and eosinophilic enteritis (Lee, *et al.* 2010). Fecal contamination by infected dogs is mostly act as a source of infection for humans and other animals. Parasitic elements, like eggs, larvae, cysts, and oocysts excreted may survive for a long period and remain infective in the environment at different condition necessitate epidemiological studies to obtain data that can contribute in preventing zoonotic transmission (Lee, *et al.* 2010). In India there are approximately 10 million dogs in 2011, mostly stray one. Lack of knowledge about the prevalence of intestinal parasites in canine population and there harmful effect among most of the populace. We aimed this study to identify the prevalence of intestinal helminthes among dogs of Kumaon Tarai of Uttarakhand.

MATERIAL AND METHODS

Study was carried out among dogs presented to Veterinary Hospital, Pantnagar from April, 2011 to March 2016. A standard survey form was used to collect information regarding individual features (age, sex, breed, and presence/absence of clinical signs) and management by owners. All the dogs reporting to hospital during the period were included for study. Fecal samples were taken directly from rectums by veterinary personnel and placed in one collector containing a 2.5% potassium dichromate solution. Macroscopic examination was performed for the detection of proglottids of cestodes, and then the faecal samples were transferred to test tubes and washed three times with distilled water (800xg for three minutes) to remove potassium dichromate. A sample of about 2 g was processed for intestinal parasites by a wet smear stained with Lugol's iodine and followed by formalin ethyl acetate concentration technique. All samples were processed also by flotation technique for the identification of parasite eggs (Garcia, 2001). To statistically analyze the data student's t test was performed.

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RESULTS AND DISCUSSION

Dogs have played a pivotal role as definitive or reservoirs hosts for different zoonotic parasites and due to the close and frequent contact with human, the risk for the transmission of zoonotic diseases increases (Salb *et al.*, 2008). In this study, out of 342 dogs examined, 159 (46.49%) were infected with parasites. *Toxocara spp*. (11.32%), *Ancylostoma caninum* (38.99%), and *Trichuris vulpis* (21.38%), and the protozoan parasite, *Giardia duodenalis* (08.18%) were the more prevalent (Table 1).

Table 1 Prevalence of intestinal parasites in dogs of Kumaon tarai of Utarakhand as per parasite

Sl. No.	Parasite	No. of Positive	Percent
1	Toxocara spp.	18	11.32
2	Anchylostoma caninum	62	38.99
3	Trituris valpis	34	21.38
4	Giardia duodenlis	13	08.18
5	others	32	20.13
	Total	159/342	46.49

Mixed infections were detected in 11 faecal samples (06.93%). Some (20.13%) infestations with other parasites were also recorded. The present study on prevalence rates of intestinal parasites in dogs is slightly different from that made by Hernández *et al.*, (2007) who reported *Ancylostoma spp.* (21%), *Dipylidium caninum* (16.3%) and *Toxocara canis* (19.7%) as the most frequent helminthes. Although the prevalence of *Toxocara canis* was low but it has recognized as one of the most prevalent in the canine population worldwide causing in humans ocular toxocariosis and visceral larva migrans (Robertson and Thompson, 2002). Moreover, hookworm pathogenesis in dogs is related to their capability of causing anemia, and in puppies the disease caused by large numbers of *Ancylostoma caninum* are often fatal (Liu, *et al.*, 2014). Giardia arose as the fourth more prevalent intestinal parasite in our study that is currently the most common cause of parasitic disease in domestic dogs and cats (Gates and Nolan, 2014).

Among the kind of dog investigated, non-descript breeds of dogs had more frequency (71.55%) of infection than descript breeds (Table 2) as they do not receive attention by their owner and in most cases rarely received antiparasitic treatments (Becker, *et al.*, 2012).

Table 2 Prevalence of intestinal parasites in dogs of Kumaon tarai of Utarakhand as per kind

Sl. No.	Kind	Examined	Positive	Percent
1	Descript breeds	226	76	33.63
2	Non-descript breeds	116	83	71.55
	Total	342	159	46.49

Dogs between 1 to 5 years age group were found to be most affected (74.76%) with parasitic infestations (Table 3) followed by more than 5 years (40.80%) because they seek less attention by owner compared to pups, who are darling of children of the house (Rebecca *et al.*, 2005).

Dogs from 0-12 months age are comparatively less infested as everyone take care of them (Mateuse *et al.*, 2014)

Table 3 Prevalence of intestinal parasites in dogs of Kumaon tarai of Utarakhand as age

Sl. No.	Age	Examined	Positive	Percent
1	Less than 3 months	77	24	31.17
2	3-12 Months	86	27	31.40
3	1-5 Years	103	77	74.76
4	More than 5 Years	76	31	40.80
	Total	342	159	46.49

CONCLUSION

The present results on prevalence of intestinal parasites indicated that veterinary control in canine population is not enough. The most prevalent parasites identified were *Ancylostoma caninum*, *Trichuris vulpis* and *Toxocara spp*. It is necessary that appropriate public health education for dog's owners to reduce the risks of zoonotic infections and follow up with epidemiological studies is utmost desirable.

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References

1. Becker, A. C., Rohen, M., Epe, C. and Schnieder, T. (2012). Prevalence of endoparasites in stray and fostered dogs and cats in Northern Germany. *Parasitol Res.* 111: 849-857.
2. Garcia, L. S. (2001). Intestinal protoazoa coccidia and microspordia In: Garcia L (ed) Diagnostic Medical Parasitology (4thedn) American Society of Microbiology, Washington.
3. Gates, M. C. and Nolan, T. J. (2014). Declines in canine endoparasite prevalence associated with the introduction of commercial heartworm and flea preventatives from 1984 to 2007. *Vet Parasitol*. 204: 265-268.
4. Hernández M., R., Fidel N. A. and Pelayo D. L. (2007). Zoonotic potential of intestinal helminth infections in stray dogs from City of Havana. *Rev Cubana Med. Trop*. 59: 234-240.
5. Lee, A. C., Schantz, P.M., Kazacos, K. R., Montgomery, S. P. and Bowman, D. D. (2010). Epidemiologic and zoonotic aspects of ascarid infections in dogs and cats. *Trends Parasitol*. 26: 155-161.
6. Liu, Y. L., Zheng, G., Alsarakibi, M., Zhang, X. and Hu, W. (2014). The zoonotic risk of Ancylostoma ceylanicum isolated from stray dogs and cats in Guangzhou, South China. *Biomed Res Int*. 2014: 208759.
7. 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.
8. Nijsse, R., Ploeger, H. W., Wagenaar, J.A. and Mughini-Gras, L. (2015). Toxocara canis in household dogs: prevalence, risk factors and owners' attitude towards deworming. *Parasitol Res* 114: 561-569.
9. Puebla, L. E. J., Nunez, F. A., Rivero, L.R., Hernandez, Y.R., Garcia, I. S. and Millan, I.A. (2015). Prevalence of Intestinal Parasites in Dogs from Municipality La Lisa, Havana, Cuba. *J Veterinar Sci Technol* 6: 250-254.

10. 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.
11. Robertson, I. D. and Thompson, R. C. (2002). Enteric parasitic zoonoses of domesticated dogs and cats. *Microbes Infect* 4: 867-873.
12. Salb, A. L., Barkema, H.W., Elkin, B. T., Thompson, R. C. and Whiteside, D. P. (2008). Dogs as sources and sentinels of parasites in humans and wildlife, northern Canada. *Emerg Infect Dis* 14: 60-63.

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