RESEARCH ARTICLE

Studies on Clinico-Etio-Epidemiology of Vomition in Dogs

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Abstract

The present study of etio-epidemiology of vomition in dogs was carried out amongst the dogs presented at Veterinary Clinical Complex, AAU, Anand. A total of 50 cases of vomiting dogs were selected for this study. Investigation of etiological factors associated with vomition revealed that 50.00% vomiting cases were due to dietary abnormalities, 24.00% due to Parvo viral infection, 10.00% due to parasitic infestation, 8.00% renal disorders, 6.00% due to hepatic disorders, and 2.00% due to pyometra. The epidemiological parameters like sex, breed, and age were recorded. During the sex-wise incidence of vomition was found more in male (64.00 %) than in female (36.00 %) dogs. The breed-wise incidence of vomition was recorded highest (32.00 %)in Mongrel, followed by Labrador Retriever (28.00 %), Spitz (12.00 %), Doberman Pinscher (8.00 %), German Shepherd (10.00 %), Great Dane 4%, Beagle (2.00 %), Lasa Aphso (2.00 %), and Pug (2.00 %) . The age-wise incidence of vomition was recorded higher (58.00%) in 0-6 months age group, followed by (24%) in 7 months to 3 years age group and (18%) in 3-8 years age group. Clinical examination revealed dehydration, dullness, congested to anemic mucus membranes, inappetence to anorexia, tachycardia, melaena, haematemesis, diarrhea, and clear lungs. On abdominal palpation, there was mild pain in dogs affected with renal and hepatic disorders.

Keywords: Canine parvovirus infection, Epidemiology, Etiology, Incidence, Vomition.

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Introduction

Dog (*Canis familiaris*) has been the foremost devoted companion of man since time immemorial. It has attended man worldwide since its domestication 15,000 years ago (Savolaienen *et al*., 2002). In India, there has been a radical increase in the demand of dogs as a pet, with the increasing canine population, the responsibility of small animal profession has also increased. It has been witnessed that vomiting is a common clinical presentation in small animal practice and may be associated with a good sort of both gastrointestinal and systemic diseases. It is a challenging problem for veterinary clinicians because vomition is associated with a multitude of causes. Hence, the present study was taken up to study the clinico-etio-epidemiology of vomition in dogs.

Materials and Methods

In the present work, screening of vomiting dogs was done amongst the dogs presented at Veterinary Clinical Complex, AAU, Anand, from October 2019 to March 2020. A total of fifty dogs (n=50) presented with a history of vomition, nausea, anorexia, or regurgitation were selected and subjected to detailed physical, clinical, and laboratory investigations. The general examination, including temperature, pulse, respiration, and clinical examinations with particular reference to frequency, volume, consistency, pH, colour, and odour of vomitus, dehydration, and color of the mucus membrane, were recorded.

Examination of Vomitus

Frequency of Vomiting: In the animals affected with vomition, the number of vomiting in a day and time in relation to eating, *i.e.,* immediately just after eating, intermittent, persistent or projected, were recorded.

Consistency of Vomitus: The consistency of vomitus was recorded as thick or viscous, thin or watery, with or without digested or undigested ingesta, and with or without mucus and blood.

pH of Vomitus: The pH of vomitus of the affected animals was recorded through wide range pH strip.

Colour of Vomitus: The colour of vomitus was recorded as yellow, white, green, red, black, and yellowish-green.

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Odour of Vomitus: The odour of vomitus was recorded as usual, acidic, rancid, foul, or putrefied.

Epidemiology

The details of epidemiological parameters like sex, breed, and age (classified into three groups, *viz*., 0-6 months, 7 months to 3 years age, and 3-8 years age group) were recorded.

Identification of Etiological Factors

The history of diet (type, quantity, and quality) was recorded to identify etiological factors of vomition in dogs. The blood, serum, vomitus, and faecal samples were collected from all vomiting dogs to identify the etiological factors. Serum samples were analyzed for liver function tests (ALT, AST, total protein, and albumin) and kidney function tests (BUN and creatinine). Faecal samples were macroscopically and microscopically processed for endoparasitic infestation. Faecal samples were used to identify parvovirus, coronavirus, and giardia infection by rapid CPV/CCV/Giardia Ag detection test (Bionote, Korea), respectively immunochromatographic assays, *i.e*., lateral flow devices (LFD).

Results and Discussion

The frequency, time in relation to eating, consistency, pH, colour and odour of vomitus were recorded. The data is presented in Table 1. Clinical examination revealed dehydration; dullness; Melana (Plate 1); icteric skin, sclera, and buccal mucus membrane (Plate 2) in cases of hepatic disorder; tachycardia; haematemesis, and diarrhea. On abdominal palpation, there was mild pain in dogs affected with renal and hepatic disorders. Reddy and Reddy (2013) and Patel *et al.* (2018) recorded similar findings in dogs affected with vomition.

Epidemiological Findings

Sex-Wise Incidence: The sex-wise incidence of vomition was more in male (64.00%; 32/50) than in female (36.00%l 18/50) dogs. Suresh (2009), Vijaya Lakshmi (2010), and Kalundia (2012) also reported a similar higher incidence of vomition in males as compared to female dogs. Although vomition has no sex predisposition, the higher incidence in the male may

Plate 1: Dog showing melena

Plate 2: Dog showing icteric skin, sclera and buccal mucosa

Table 1: Comparison of clinico-physiological parameters with different etiological factors of vomition in dogs

Sr. No.	*Etiological factors*	*Frequency of vomiting (No./day)*	*Time in relation to eating*	*Nature of vomitus*			
				Consistency	*pH*	*Colour*	*Odour*
1	Dietary abnormalities	5-9	Immediately after eating	Watery with undigested ingesta	4 ± 1	White	Normal
2	Canine Parvo viral infection	4-6	Intermittent vomiting	Viscous	3 ± 1	Yellow or white	Foul-smelling
3	Endo-parasitic infestation	4-5	Intermittent vomiting	Watery or viscous	3 ± 1	Yellow or red	Normal
4	Renal disorders	2-7	Intermittent vomiting	Viscous	4 ± 1	Yellow followed by blood-tinged	Acidic
5	Hepatic disorders	2-10	Intermittent vomiting	Viscous	4 ± 1	Yellow followed by blood-tinged	Acidic
6	Pyometra	2-4	Intermittent vomiting	Watery	4 ± 1	White	Normal

Table 2: Breed wise incidence of vomition in dogs

S. No.	*Breed of dog*	*No. of animals*	*Percentage*
1	Mongrel	16	32.00
2	Labrador Retriever	14	28.00
3	Spitz	06	12.00
4	German Shepherd	05	10.00
5	Doberman Pinscher	04	8.00
6	Great Dane	02	4.00
7	Beagle	01	2.00
8	Lasa Aphso	01	2.00
9	Pug	01	2.00
Total		50	100.00

Table 3: Age-wise incidence of vomition in dogs

S. No.	*Age group*	*No. of animals*	*Percentage*
1	0 - 6 months	29	58.00
2	7 month - 3 years	12	24.00
3	3 - 8 years	09	18.00
Total		50	100.00

Table 4: Etiological factors associated with vomition in dogs

S. No.	*Etiological factors*	*No. of Animals*	*Percentage*
1	Dietary abnormalities	25	50
2	Parvo viral infection	12	24
3	Parasitic infection	05	10
4	Renal disorder	04	08
5	Hepatic disorder	03	06
6	Pyometra	01	02
Total		50	100

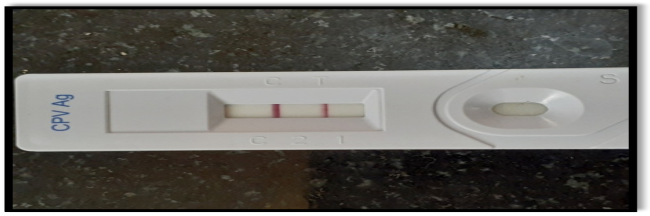

Plate 3: Rapid CPV Ag test kit showing positive result

be due to over presentation of male pet dogs in the study area.

Breed-Wise Incidence: Out of 50 vomiting dogs, the higher incidence of vomition was noted in Mongrel (32.00%), followed by Labrador Retriever (28.00%), Spitz (12.00%), German Shepherd (10.00%), Doberman Pinscher (8.00%), Great Dane (4.00%), Beagle (2.00%), Lasa Aphso (2.00%), and Pug (2.00 %) (Table 2). Suresh (2009) and Kalavadiya (2019) also reported similar findings. The above findings could be the outcome of the difference in the proportion of various breeds and the high population of Mongrel in and around the research area.

Age-Wise Incidence: During the study, the age-wise incidence of vomition in dogs was higher (58.00%) in the young age group (below 6 months) followed by 24.00% in 7 months to 3 years age group and 18.00% in 3 to 8 years age group (Table 3). Similarly, Mallikarjun (2013) and Kalavadiya (2019) also reported the highest incidence of vomition in pups less than 6 months of age group. The higher incidence of vomition in 0-6 month age group may be due to the exploration habit of things through the mouth by pups, and thus swallowing of unwanted items and the lowered immunity associated with improper deworming & vaccination schedules.

Identification of Etiological Factors

In the present study, the incidence of vomition in dogs observed was higher (50.00%) due to dietary abnormalities, followed by 24.00% due to canine parvoviral infection, 10.00% due to parasitic infection, 8.00% due to renal disorders, 6.00% due to hepatic disorders and 2.00% due to pyometra (Table 4, Plate 3).

Grooters *et al.* (1994) recorded the association of chronic gastritis resulting vomiting in dogs with uremic gastropathy. Tams (1996) stated that a wide variety of worm disorders and stimuli could cause vomiting, including intestinal obstruction, renal failure, pancreatitis, drug toxicity, and neoplasia. Suresh (2009) recorded dietary abnormalities as the most frequent causes of vomition followed by renal failure and hepatic disorders with jaundice. Ramery *et al.* (2010), Agnihotri *et al.* (2017), Behera *et al.* (2015) Kumar and Kumar (2017), Devi *et al.* (2018), and Gupta *et al.* (2019) also noted similar etiologies in dogs presented with vomition. The incidence rate of vomition due to dietary origin was highest, and this might be due to voracious and indiscriminate feeding habits in dogs.

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