

Prevalence of Skin Disorders in Kintamani Dog

Prevalensi Gangguan Kulit pada Anjing Kintamani

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ABSTRAK

Tujuan penelitian ini adalah untuk menentukan prevalensi klainan kult pada anjing Kintamansi, Bali dari tahun 2009 sampai 2013 menggunakan studi observasional dengan menerapkan teknik sampling perpusif. Data diambil dari catatan pasien pada klinik veteriner di Kabupaten Badung, Gianyar, dan Kota Denpasar, yang kemudian dianalisis secara deskriptif. Dari 475 anjing, 99 ekor (20,8%) mengalami gangguan kulit. Gangguan kulit yang diamati pada penelitian ini disebabkan oleh parsit (15,2%), fungi (2,1%), virus (2,1%), dan bakteri (1,5%). Kasus gangguan kulit sering terjadi pada musim kemarau (53,1%) dari pada musim hujan (46,9%), dengan variasi umur anjing dari 3 bulan sampai dengan 12 tahun.

Kata kunci: prevalensi, gangguan kulit, anjing Kintamani

ABSTRACT

The aim of this study was to determine the prevalence of skin disorders in Kintamani Bali dog from 2009 to 2013 using an observational study with purposive sampling technique. The data was taken from the patient records in veterinary clinics in Badung Regency, Gianyar Regency and Denpasar City which thereafter analyzed descriptively. From 475 dogs, 99 dogs (20.8%) were infected by skin disorder. Skin disorders observed in this study was caused by parasites (15.2%), fungus (2.1%), virus (2.1%) and bacteria (1.5%). The case of skin disorders frequently occurred in the dry season (53.1%) than in rainy season (46.9%), with a variation in age from 3 months to 12 years old.

Key words: prevalence, skin disorders, Kintamani dog

INTRODUCTION

Kintamani dog is native dogs that live in the mountains around Kintamani which have high popularity (Puja, 2007). A disorder that frequently occur in many dogs which also can infect Kintamani dog is skin disorders. Skin disorders are major problems in the local dogs in Bali and caused by many factors such as external parasites, malnutrition, especially for stray dogs and genetic factors (Widyastuti *et al.*, 2012). Skin disorders can be distinguished based on its cause such as infection, environmental, nutrition, allergies and hypersensitivity, and also endocrine and metabolic disorders. There is no report available on the prevalence of skin disorders

in Kintamani dog, therefore this study was conducted to help increase breeding management as well as the prevention and alleviation of skin disorders in Kintamani dog.

MATERIALS AND METHODS

Questionnaires were filled out by veterinarians in veterinary clinics in Badung Regency, Gianyar Regency and Denpasar City from 2009 to 2013 from all ages in which are grouped according to cynology into 0-3 months, 3-6 months, 6-9 months, 9-12 months and more than 12 months according to the patient records of the veterinary clinics.

The collected data will be analyzed descriptively.

RESULTS AND DISCUSSION

Results

Recorded 475 Kintamani dog spread over in nine veterinary clinics in Badung Regency, Gianyar Regency and Denpasar City from 2009 to 2013 with different health statuses (Table 1). Skin disorders infected 99

of Kintamani dog (20.8%). It was recorded that 72 dogs (15.2%) were diagnosed due to parasitic infestations, 10 dogs (2.1%) were diagnosed due to fungus infection, 10 dogs (2.1%) were diagnosed due to virus infection and 7 dogs (1.5%) were diagnosed have skin disorder caused by bacterial infection. The prevalence of skin disorders in Kintamani dogs by sex, age group, and season are presented in Table 2 and 3.

Table 1. General Data of Kintamani Bali dog from 2009 to 2013

Location	Total	Percentage (%)
Badung Regency	22	4.63
Gianyar Regency	104	21.89
Denpasar City	349	73.48
Sex:		
Male	353	74.1
Female	122	25.9
Age:		
0-3 months	123	25.9
3-6 months	75	15.8
6-9 months	47	9.9
9-12 months	29	6.1
>12 months	201	42.3
Season:		
Dry	252	53.1
Rainy	223	46.9
Health Status:		
Healthy	189	39.8
Skin disorders	99	20.8
Other disorders	187	39.4

Table 2. Prevalence of Skin Disorders in Kintamani Dogs

Factors	Total	Scabies		Demodicosis		Flea dermatitis		Tick dermatitis		Dermatophytosis	
		(+)	Prev. (%)	(+)	Prev. (%)	(+)	Prev. (%)	(+)	Prev. (%)	(+)	Prev. (%)
Sex:											
Male	353	16	4.53	17	4.81	11	3.11	7	1.98	6	1.69
Femal	122	10	8.19	5	4.09	2	1.63	4	3.27	4	3.27
Age (month):											
0-3	123	1	0.81	2	1.62	5	4.06	3	2.43	-	-
3-6	75	9	12	4	5.33	3	4	-	-	1	1.33
6-9	47	4	8.51	4	8.51	-	-	-	-	3	6.38
9-12	29	3	10.34	3	10.34	1	3.44	2	6.89	1	3.44
>12	201	9	4.47	9	4.47	4	1.99	6	2.98	5	2.48
Season:											
Dry	252	17	6.74	16	6.34	7	2.78	6	2.38	5	1.98
Rainy	223	9	4.03	6	2.69	6	2.69	5	2.24	5	2.24

Table 3. Prevalence of Skin Disorders in Kintamani Dogs

Factors	Total	Canine distemper		Papilloma		Pyoderma		Impetigo	
		(+)	Prev. (%)	(+)	Prev. (%)	(+)	Prev. (%)	(+)	Prev. (%)
Sex:									
Male	353	8	2.26	1	0.81	5	1.42	-	-
Femal	122	1	0.81	-	-	1	0.81	1	0.81
Age (month):									
0-3	123	3	2.43	-	-	4	3.25	1	0.81
3-6	75	1	1.33	-	-	-	-	-	-
6-9	47	1	2.13	-	-	-	-	-	-
9-12	29	1	3.44	-	-	-	-	-	-
>12	201	3	1.49	1	0.5	2	0.99	-	-
Season:									
Dry	252	6	2.38	1	0.39	3	1.19	1	0.39
Rainy	223	3	1.35	-	-	3	1.35	-	-

Discussion

It was recorded that scabies cases were higher in the dry season (6.74%) compared to the rainy season (4.03%). These results are identical with the study which was conducted by Chen *et al.*, (2014) in South China that showed more cases of scabies occur in summer than in winter because high temperature support the growth of *Sarcoptes scabiei* var. *canis*. For a gender-wise, a research was conducted by Torres *et al.*, (2009), prevalence of scabies in female dogs (91,8%) were higher than the males (87%). The prevalence of scabies in Kintamani female breeds (8.19%) higher than the males (4.53%). The highest prevalence of scabies was in age 3-6 months (12%) compared to the other age groups. This research conducted in accordance with Chen *et al.*, (2014) and Arlian and Morgan (2000), the prevalence of scabies is higher in dogs under one year old because the immune system are less developed than in adult dog.

Case of demodocosis are higher in the dry season (6.34%) rather than in rainy season (2.69%). These results are compatible with those reported in the UK essay (2014), which states that high temperature in tropical areas, causing the high prevalence of demodocosis case due to immunosuppressive conditions. The highest prevalence of demodocosis in Kintamani Bali dogs were occurred in the 9-12 month age group (10.34%). Similar results

were stated by Ali *et al.*, (2011), which showed that demodocosis prevalence was higher in young dogs (37.9%) than in adult dogs (31.5%), and also, demodocosis prevalence in male dogs (6.34%) was higher than in female dogs (2,69%). The study is suitable with the research in Kintamani Bali dog, the prevalence was higher in male dogs (4.81%) compared to female dogs (4.09%). The cause of the high prevalence in demodocosis case in male dogs could not be explained scientifically, but there was a hypothesis mention that demodocosis influenced by several hormones, one of those is testosterone (Robert *et al.*, 2004). It is possible that high testosterone level can suppress the immune system (Klein, 2004).

Data on Kintamani Bali dog showed that the prevalence of flea dermatitis was higher in dry season (2.78%) compared to rainy season (2,69%). Tick dermatitis was higher in the dry season (2.38%) compared to rainy season (2.24%). This is suitable with the study of Dipeolu (1975) and Gracia *et al.*, (2008) which states that the peak of the prevalence of ectoparasites will occur at elevated temperatures. The research in Kintamani Bali dog showed that, the prevalence of flea dermatitis was higher in male (3.11%) compared to female (1.63%). The cases of tick dermatitis was higher in female dogs (3.27%) compared to male dogs (1.98%). A research which was conducted by Wu *et al.*,

(2009) confirmed that the flea and tick dermatitis were not affected by gender, but were influenced by age, preventive measures and outdoor activities. High prevalence of flea dermatitis showed in the age group 0-3 months (4.06%). This result is suitable with research conducted by Shoorijeh *et al.*, (2008) which states that the age group that has a high prevalence of tick dermatitis is at 0-3 months (8%), but is not have significant differences with the other age groups. The highest prevalence of tick dermatitis in Kintamani Bali dog was in the age group 9-12 months (6.89%), the results are similar with the research which was conducted by Shoorijeh *et al.*, (2008) which states, that high tick dermatitis are occurred in age of 1-6 months (9.4%).

The prevalence of ringworm in female Kintamani Bali dog is higher (3.27%) than male (1.69%). According to research conducted by Sparkes *et al.*, (1993) there is no tendency in gender factor in the case of ringworm. Prevalence ringworm infection of Kintamani Bali dog was lower in dry season (1.98%) compared to rainy season (2.24%). The highest prevalence of ringworm in Kintamani Bali dog was in the age group 6-9 months (6.38%) compared to other age groups. Similarly, research conducted by Sparkes *et al.*, (1993) states that a tendency of ringworm were experienced by the dogs aged less than one year old.

Prevalence of canine distemper in Kintamani dog was reported higher in dry season was 2.38% compared to 1.35% rainy season. Same result found in research conducted in Denpasar by Erawan *et al.*, (2009) which showed that the increasing cases of distemper in dry season are more than in rainy season. The highest prevalence was in age group 9-12 months (3.45%). This is consistent with statement of Headley and Gracia (2000) who reported that the occurrence of canine distemper was high (62.8%) in dogs aged less than 1.5 years old. The prevalence of Kintamani dog which was diagnosed with CDV infection was higher in male dogs (2.26%) than female dogs (0.81%).

Headley and Gracia (2000) state that there is no significant difference in the incidence of canine distemper among male and female dogs. This research showed papilloma virus infects a male Kintamani Bali dog with prevalence 0.2% in its two years old (0.5%) in rainy season (0.4%).

Pyoderma prevalence was higher in rainy season (1.35%) compared to dry season (1.19%). Results of this research which was conducted to the Kintamani Bali dog showed that the highest prevalence of pyoderma was occurred in age group 0-3 months (3.25%) compared to the prevalence in other age groups. Young and adult dogs can be infected by pyoderma. Gender and breed are not predisposition of pyoderma (Pierre and Carlotti, 2014). Prevalence of Kintamani Bali dog diagnosed with pyoderma were higher in male (1.42%) compared to female (0.81%). The results of this research showed that a male Kintamani Bali dog with impetigo infection was diagnosed (0.81%), it was three months old (0.81%), and in rainy season (0.39%).

CONCLUSION

The prevalence of skin disorders in Kintamani dog is 20.8% and there is not any report about skin disorders due to nutritional, environmental, allergic reactions and hypersensitivity, and also endocrine and metabolism disorders.

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