

INCIDENCE OF CANINE REPRODUCTIVE TRACT DISORDERS AND THEIR RELATIONSHIP WITH AGE, BREED AND SEASON IN PALAMPUR, HIMACHAL PRADESH

VASU SHARMA, AMIT SHARMA*, ANKIT AHUJA and PANKAJ SOOD

Department of Veterinary Gynaecology and Obstetrics, College of Veterinary & Animal Sciences, CSKHPKV, Palampur, Himachal Pradesh- 176062, India

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SUMMARY

The present study was conducted to record the incidence of canine reproductive disorders in relation to age, breed and season. A total of 283 cases suffering from various reproductive tract ailments were divided into different categories viz. physiological, neoplastic, infectious, hormonal, gestational and miscellaneous. Amongst the total presented clinical cases, 57.60% dogs suffered from reproductive tract ailments with highest incidence of dystocia (21.20%). Apart from reproductive pathologies, apparently healthy physiological cases (estrus detection, 18.37%; pregnancy diagnosis, 24.03%) emulating to 42.40% were also recorded. Etiologically highest incidence of gestational disorders (22.26%) was observed in present study among younger (1-2 years, 47.25%), large breed dogs (48.57%) during monsoon season (July-October, 36.40%).

Keywords: Dogs, Incidence, Reproductive disorders

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The dog (*Canis lupus familiaris*) is the most popular domestic mammal kept as a pet in the family canidae and order carnivora. Dog is considered as a best companion to human beings. Dogs were most likely the first domesticated animals (Ramsingh *et al.*, 2013). Canine breeding is a rapidly growing industry and there is influx of exotic breeds of dogs into India for breeding purpose (Singh *et al.*, 2019). Understanding the incidence of reproductive disorders helps in development of therapeutic measures for the most prevalent reproductive disorders in canines. Therefore, the objectives of this study were to determine the incidence of reproductive disorders in canines and their relationship with age, breed and season.

The present study was aimed to record the incidence of reproductive tract ailments in canines. The study was carried out in clinical cases presented to Veterinary Gynaecology unit of Department of Veterinary Clinical Complex, Dr. G.C. Negi College of Veterinary and Animal Sciences, CSK Himachal Pradesh Krishi Vishwavidyalaya (CSKHPKV), Palampur (32.6°N, 76.3°E, and altitude 1290.8m) from July 2021- September 2022. The clinical cases were screened for various reproductive ailments based on history and clinical signs. A total of 283 cases suffering from various reproductive tract ailments were divided into different categories viz. physiological cases (estrus detection and pregnancy diagnosis), neoplastic (transmissible venereal tumor), infectious (pyometra, vaginitis and fetal resorption), hormonal (pseudopregnancy, vaginal hyperplasia and cystic ovarian disease), gestational (dystocia, sub-involution of placental sites) and miscellaneous (mismatching and male infertility), respectively.

Animals were categorized into three age groups viz. young (0-2 years), adult (2-5 years) and old (>5 years) (Ortega-Pacheco *et al.*, 2006). Breed-wise the animals were classified on the basis of body weight into three groups viz. small (<15 kg), medium (15-25 kg) and large (>25 kg) (Mila *et al.*, 2015). On the basis of season of clinical case presentation, the cases were classified into three seasons viz. summer (March to June), monsoon (July to October) and winter (November to February).

Amongst a total of 283 canine cases registered at Gynaecology Outpatient Department of VCC during the study period 57.60% of dogs suffered from reproductive tract ailments with highest incidence of dystocia (21.20%) followed by TVT (13.43%), pyometra (8.48%), mismatching (4.24%), pseudopregnancy (3.53%), vaginal hyperplasia (2.47%), vaginitis (1.41%), fetal resorption (1.06%), sub-involution of placental sites (0.71%) and cystic ovarian disease (0.35%). Apart from reproductive pathologies, the incidence of apparently healthy physiological cases (estrus detection, 18.37%; pregnancy diagnosis, 24.03%) 42.40% were also recorded. Higher incidence of pyometra (30.24%) among the various reproductive disorders observed in present study was comparable to earlier reports (Gupta *et al.*, 2013). Pyometra was followed by venereal granuloma (23.38%), post-partum complications (10.48%) and dystocia (8.06%). While Gandotra *et al.* (1993) and Johnston *et al.* (2001) reported the highest incidence of venereal granuloma in bitches.

Etiological incidence among the presented cases was highest from gestational disorders (Dystocia, Sub involution of placental sites; 22.26%) followed by neoplasia (13.43%), infectious diseases (Pyometra, Fetal

*Corresponding author: amitgynae@hillagric.ac.in

Table 1. Individual condition and age-, breed- and season- wise incidence of reproductive disorders

Condition	Parameters		Sub-Category		Cumulative	Chi square value	p-Value
Gestational (DYS, HL, SIPS)	Age	Young (0-2)	Adult (2-5)	Old (>5)	22.26	2.038	0.361
		47.61 (30)	42.85 (27)	9.52 (6)			
	Breed	Small	Medium	Large		8.917	0.012
		28.57 (18)	14.28 (9)	57.14 (36)			
	Season	Summer	Monsoon	Winter		1.209	0.546
		36.50 (23)	31.74 (20)	1.74 (20)			
Neoplastic [TVT]	Age	Young (0-2)	Adult (2-5)	Old (>5)	13.43	11.851	0.003
		31.05 (8)	63.15 (24)	15.78 (6)			
	Breed	Small	Medium	Large		33.033	0.000
		5.26 (2)	68.42 (26)	26.31 (10)			
	Season	Summer	Monsoon	Winter		10.481	0.005
		36.84 (14)	52.63 (20)	10.52 (4)			
Infectious [PYO, VAG, FR]	Age	Young (0-2)	Adult (2-5)	Old (>5)	10.95	28.668	0.000
		12.0 (4)	41.93 (13)	45.16 (14)			
	Breed	Small	Medium	Large		3.035	0.219
		29.03 (9)	16.12 (5)	54.83 (17)			
	Season	Summer	Monsoon	Winter		7.679	0.022
		22.58 (7)	22.58 (7)	54.83 (17)			
Hormonal [PP, COD, VH]	Age	Young (0-2)	Adult (2-5)	Old (>5)	6.36	5.628	0.060
		44.44 (8)	22.22 (4)	33.33 (6)			
	Breed	Small	Medium	Large		2.675	0.263
		11.11 (2)	33.33 (6)	55.55 (10)			
	Season	Summer	Monsoon	Winter		1.311	0.519
		22.22 (4)	33.33 (6)	44.44 (8)			
Miscellaneous [MI, MM]	Age	Young (0-2)	Adult (2-5)	Old (>5)	4.59	1.739	0.419
		61.53 (8)	23.07 (3)	15.38 (2)			
	Breed	Small	Medium	Large		0.021	0.989
		23.07 (3)	30.76 (4)	46.15 (6)			
	Season	Summer	Monsoon	Winter		6.793	0.033
		61.53 (8)	30.76 (4)	7.69 (1)			
Physiological [ED, PD]	Age	Young (0-2)	Adult (2-5)	Old (>5)	42.20	17.568	0.000
		58.33 (70)	34.16 (41)	7.5 (9)			
	Breed	Small	Medium	Large		1.445	0.485
		25 (30)	25.83 (31)	49.16 (59)			
	Season	Summer	Monsoon	Winter		1.997	0.369
		26.66 (32)	37.50 (45)	35.83 (43)			

resorption, Vaginitis; 10.95%), hormonal (Pseudo-pregnancy, Vaginal hyperplasia, Cystic ovarian disease; 6.36%), miscellaneous (Mismating, 4.49%) and physiological (Estrus detection, Mismating, Pregnancy diagnosis; 47%), respectively. Highest incidence was observed in large breed (48.57%) followed by medium (32.14%) and small breed dogs (19.29%), respectively in present study. Similar studies were reported by Gupta *et al.* (2013) recording highest incidence of reproductive disorders in Pomeranians compared to other breeds. While Ajala *et al.* (2011) reported highest incidence of

reproductive disorders in Alsatian dogs (27.4%).

CONCLUSION

Various types of reproductive cases presented in Veterinary Gynaecology Unit of VCC, COVAS were broadly categorised into physiological (42.40%) and reproductive disorders (57.60%). To conclude, the gestational disorders (22.26%) followed by neoplasia (13.43%) and infections (10.95%) cases among the disease affected group in the dogs. However, individually, the cases of dystocia (21.2%) were predominant followed by TVT (13.43%) and pyometra (8.48%) in the same set of

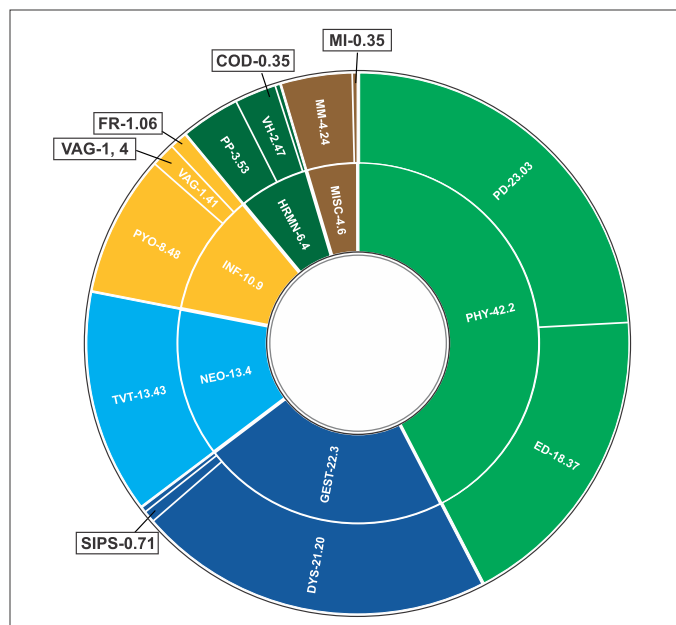


Fig. 1. Sun burst diagram depicting individual condition and age, breed and season wise incidence of reproductive disorders

animals. Among the apparently healthy group, the cases of pregnancy diagnosis (24.03%) were the highest.

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Table 2. Cumulative age-, breed- and season- wise incidence of reproductive disorders

Factors	Parameter	No of cases	Percent (%)
Season	Monsoon	103	36.40
	Summer	90	31.80
	Winter	90	31.80
Age	Young (up to 2 years)	129	45.58
	Adult (2-5 years)	113	39.92
	Old (above 5)	41	14.48
Breed	Small	27	19.29
	Medium	45	32.14
	Large	68	48.57

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