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Short Communication

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

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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 (32.6ºN, 76.3ºE, 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 (mismating and male infertility), respectively.

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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%), mismating (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

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

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

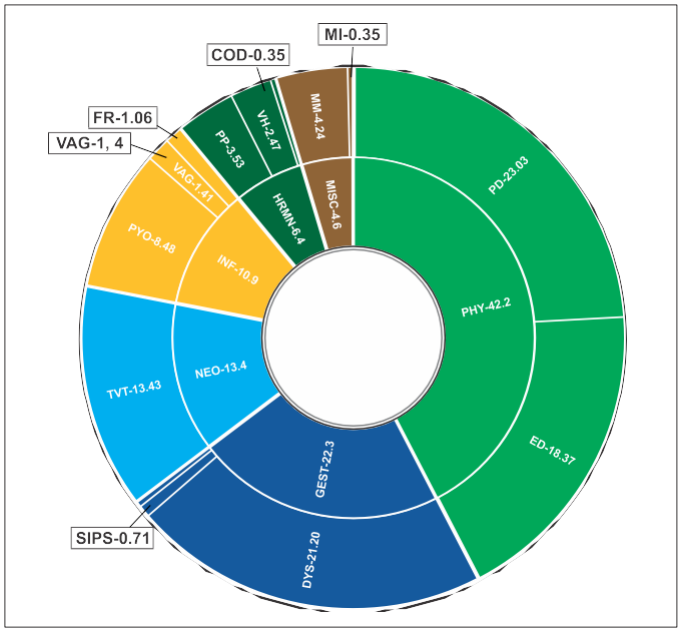

Fig. 1. Sun burst diagram depicting individual condition and age, breed and season wise incidence of reproductive disorders

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

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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