

# INFLUENCE OF BREEDING HISTORY AGE AND BREED ON PREVALENCE OF PROSTATE GLAND HYPERPLASIA IN DOGS

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The study was conducted at Veterinary Clinical Complex, Nagpur Veterinary College, Nagpur. A complete clinical evaluation was done in 24 male dogs (n=24) suffering from prostate gland hyperplasia with the objective to study the comparative influence of breeding history, age and breed on prevalence of prostate gland hyperplasia in dogs. Male dogs (n=24) of more than five years of age irrespective of breeds along with clinical signs suggestive of prostatic disorders were screened for prostatic hyperplasia with the help of history, clinical examination, digital rectal examination and ultrasound. Breed wise influence on prostate gland hyperplasia was observed in seven Labrador Retriever (29.16 %), in five Non-Descript (20.83 %), in four German Shepherd (16.66 %) , two each in Doberman and Spitz (8.33 %) followed by 4.66 per cent, one dog each in Rottweiler, Dalmatian, St. Bernard and Beagle breed dogs. Similarly the influence of age was observed highest as 50 % (12 dogs) in 5 to 7 years of age, followed by 29.16 % (7 dogs) in age group of 8 to 10 years and 20.83 % (5 dogs) above 10 years of age. Likewise, present study revealed that prostate gland hyperplasia in 58.33% of male dogs with the history of rare breeding as compared to regular breeder dogs 41.66%.

**Keywords:** BPH, Breeding History, Dogs, Prevalence, Prostate Gland Hyperplasia.

The prostate gland is the primary androgen-dependent sole accessory gland which is located in the pelvic cavity of the male dogs. It is bilobed, oval to spherical in shape, grayish in colour and encircled with fibro muscular capsule. The prostate is composed of stromal and glandular elements, which cranially connected to neck of urinary bladder and caudally to the urethra, dorsally to rectum and ventrally pelvic symphysis. The volume of prostatic fluid contributes over 97 percent of the ejaculated volume (Khadidja and Adel, 2017).

The prostate secretion is the most important in canine reproduction as it contributes fluid to first and third fraction of the sperm ejaculation. Prostatic diseases are commonly observed in the middle age to older un-neutered sexually intact male dogs and above 8 years of age have 80 percent chances of developing prostatic disease (Das

*et al.*, 2017). Breed-wise analysis showed that the Doberman, German shepherd, and Labrador breeds are more susceptible to Benign prostatic hyperplasia (BPH). Other related studies have reported that the prevalence of BPH seemed to be higher in large sized breed dogs such as GSD and Doberman. (Polisca *et al.*, 2016)

There is lack of information whether breeding history affects the prostate gland and hence the present study is designed to study the comparative influence of breeding history, age and breed on prevalence of prostate gland hyperplasia in male dogs.

## Materials and Methods

The male dogs (n=24) presented at at VCC, Nagpur with age 5 years or more, suffering from prostate gland hyperplasia were selected for said study with different breeds like German Shepherd, Doberman, Rottweiler, Dalmatian, Labrador, Dachshund and non-descript. The dogs were clinically

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examined by Digital Rectal Examination (DRE) for the enlargement of prostate gland. The ultrasound exam of the prostate was also performed to study enlargement and the texture of the prostate gland parenchyma. Simultaneously, the dogs breeding history was also recorded.

The male dogs (n=24) irrespective of breeds were divided into two groups according to age, more than five years and more than eight years.

## Results and Discussion

**Table 1: influence of breeds on Prostate gland hyperplasia in dogs (n=24)**

Sr. No.	Name of Breed	No. of Dogs	Percentage (%)
1	Labrador	7	29.16
2	Non descript	5	20.83
3	GSD	4	16.66
4	Doberman	2	8.33
5	Spitz	2	8.33
6	Rottweiler	1	4.16
7	Dalmatian	1	4.16
8	St. Barnard	1	4.16
9	Beagle	1	4.16
Total		24	100.00

Almost similar findings are reported by Dwivedi *et al.*, (2021) on occurrence of BPH as 33.33 per cent in German shepherd, 27.78 per cent in Labrador retriever, 11.11 per cent in Indian Spitz and Doberman pinscher respectively and 16.67 per cent in Non-descript.

In contrast with present findings Shafiee *et al.*, (2014) reported that out of 12 dogs incidence was found more in German shepherd and Great den as 25 per cent. This might be due to the difference in environment & management practices followed by the pet owners.

From the present study it is observed that, Labrador, Non-descript and German shepherd are the dogs breed in which the prostate hyperplasia prevalence was observed at higher per cent scale. The relative difference in breed wise prevalence of prostate hyperplasia might be due to

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### **Breeds influence on Prostate gland hyperplasia:**

Breed wise influence on prostate gland hyperplasia is given in Table 1. Out of total 24 male dogs screened during the present study the breed wise prevalence of prostate gland hyperplasia was observed in seven Labrador Retriever (29.16 %), in five Non-Descript (20.83 %), in four German Shepherd (16.66 %), two each in Doberman and Spitz (8.33 %) followed by 4.66 per cent, one dog each in Rottweiler, Dalmatian, St. Bernard and Beagle breed dogs (Table 1).

difference in genetic makeup of different breeds. Likewise more percent prevalence of the prostate gland hyperplasia was also recorded in Non-Descript breed probably due to change in the management. Similarly, the owners irrespective of breed have become more alert & cautious about the health of their pets & report any slight change in health to doctors. Similarly, in olden days there was tendency to keep only established breed pets. But presently due to the high price of established breeds, people are keeping more non-descript dogs as a pet. Hence, in present study more non-descript dogs are included. Therefore, in the present study more percent of prostatic hyperplasia have been observed in non-descript dogs as compared to established breeds.

### **Age Influence on prostate gland hyperplasia:**

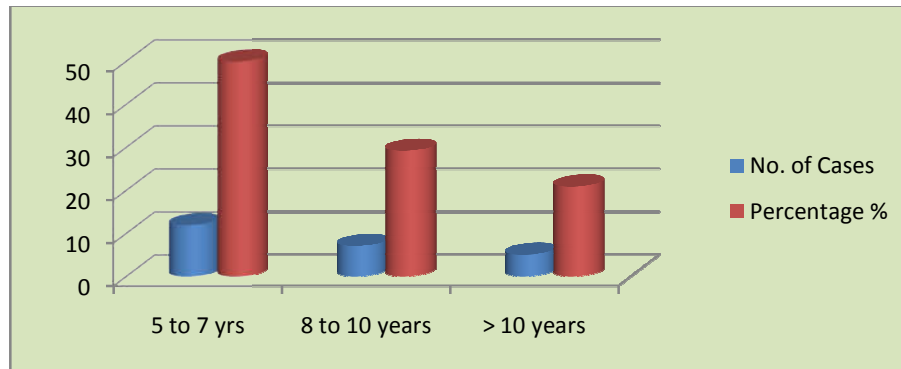
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Age wise influence on prostate gland hyperplasia is given in Table 2. The prevalence of prostate gland hyperplasia recorded highest as 50 % (12 dogs) in 5 to 7 years of age, followed by 29.16 % (7 dogs) in age group of 8 to 10 years and 20.83 % (5 dogs) above 10 years of age (Table 2 and

Fig.1). In the present study, the highest 50% prostatic hyperplasia recorded in 5 to 7 years age group, this might be due to pet owners have become more cautious about the pet health and report to the Veterinary hospital immediately and get it treated.

**Table 2: Influence of age on prostate gland hyperplasia in male dogs (n=24)**

Sr. No.	Age group of dogs	No. of Cases	Percentage %
1	5 to 7 years	12	50
2	8 to 10 years	7	29.16
3	> 10 years	5	20.83
		Total=24	100.00



**Fig.1: Influence of Age on prostate gland hyperplasia in male dogs (n=24)**

In contrast with the present findings Dwivedi *et al.*, (2021) reported occurrence of BPH as 16.67 per cent in 6 to 8 years of age group, 33.33 per cent in 8 to 10 years of age group and 50 per cent in greater than 10 years of age group. This might be due the difference in genetic make up, management practices & pet health awareness in pet owners.

The more per cent of the prevalence in the male dogs aged in between 5 to 7 years can be endorsed to the reality that, pet owners have become more alert & cautious about the health of pet & therefore, with sudden change

in normal activity is reported to doctors. Therefore in the present study more percentage is observed in 5 to 7 years age group as compared to other research workers.

**Breeding history influence on prostate gland hyperplasia:**

Breeding history was collected appropriately from all the 24 male dog owners to find any clue that whether breeding history effects on prostate gland hyperplasia in dogs. The data regarding the breeding history and age was collected and grouped in two as regular and rarely bred dogs (Table 3).

**Table.3: Effect of breeding history and age on prevalence of prostate hyperplasia (n=24)**

Breeding status	Group I (5 to 8 years)	Group II (8 and above years)	Total no of dogs (%)
Regularly bred dogs	5 (41.66 %)	6 (50.00 %)	11 (45.83 %)
Rarely bred dogs	7 (58.33 %)	6 (50.00 %)	13 (54.16 %)

Total No of dogs	12	12	24 (100.00 %)
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Out of 12 male dogs from group I (5 to 8 years) affected with prostate hyperplasia, more no. of prevalence was observed in 7 dogs with the history of rarely breeding as compared to group II (8 and above years) with 41.66 % (5/12 dogs) with the history of regular breeding (Table 3).

Table 3 also presents that out of 12 male dogs from group II (8 and above years) affected with prostate hyperplasia there were no comparative difference found in the prevalence per cent of regular and rarely bred dogs. Out of 12 affected dogs were presented with the history of regular and rare breeding in 6 (50.00 %) dogs each (Fig.3).

Out of total 24 male dogs affected with prostate gland hyperplasia irrespective of age found more prevalence as 54.16 % (13/24 dogs) which were had the history of rare breeding as compared to regular breeder dogs with 45.83 % (11/24 dogs). Table 3 showed that out of 24 male dogs diagnosed with prostate gland hyperplasia observed more number of male dogs with the history of rare breeding as compare to regular breeder dogs.

After going through various literatures no studies were found about the effect of breeding history on prostate gland hyperplasia and therefore the present study might be the first attempt made as a research study in this subject.

However some authors like Das *et al.*, (2017) mentioned avoidance of mating as a causative factor to occur the prostate affections in dogs. Likewise Angrimani *et al.*, (2020) also mentioned in their study that prostate hyperplasia can diagnose in young breeding male dogs.

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