

STUDY ON OCCURRENCE OF OSTEOARTHRITIS IN DOGS

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Osteoarthritis (OA) is the most common degenerative joint disease in the dogs affecting up to 20% of the adult canine population. The present paper reports the study of the etiology and incidence of canine osteoarthritis in different canine breeds, age, sex and joints.

Keywords: Dogs, Obesity - hip dysplasia, Osteoarthritis.

Osteoarthritis (OA) is a complex progressive disease of synovial joints, characterized by degeneration of articular cartilage, osteophyte formation, bone remodeling formation of new bone at the joint margins (Elliott *et al.*, 2007), synovial inflammation, insufficient repair leading to cartilage loss, joint space narrowing, fissure formation (Sharma *et al.*, 2013) and finally joint destruction (Guercio *et al.*, 2012; Man and Mologhianu 2014).

The present study was carried out on the clinical cases presented to the Department of Veterinary Surgery and Radiology, Veterinary College, S.V.V., Tirupati, over a period of one year. The data was collected age, breed, sex, type of joint, weight, etiology of osteoarthritis. as mentioned in the Tables (1,2,3,4,5, and 6). Symptoms of pain, lameness, poor joint motion and improper weight bearing and elected for the present study after under going all routine clinical, orthopedic, neurological and radiological examinations.

Materials and Methods

TABLE.1. INCIDENCE OF OSTEOARTHRITIS IN DOGS BASED ON ETIOLOGY

S.No	Etiological factors	Number	Percentage%
1	Obesity–Hip dysplasia	22	40
2	Hip dysplasia- Poor conformation	15	27.3
3	Obesity– Poor conformation	12	21.8
4	Mixed	6	10.9
	Total	55	100

TABLE 2. AGE WISE INCIDENCE OF OSTEOARTHRITIS IN DOGS

S. No	Age of animal (Years)	Number	Percentage%
1	1-4	13	23.6
2	4-6	15	27.2
3	6-10	25	45.5
4	>10	2	3.7
	Total	55	100

TABLE.3. BREED WISE INCIDENCE OF OSTEOARTHRITIS IN DOGS

S. No	Breeds	Number	Percentage%
1	Labrador Retriever	24	43.70
2	Golden Retriever	9	16.36
3	German Shepherd	6	10.27
4	Rottweiler	4	7.27
5	Non descript	3	5.45
6	Pug	2	3.63
7	Spitz	2	3.63
8	Cocker Spaniel	1	1.81
9	Dalmatian	1	1.81
10	Dashund	1	1.81
11	Poodle	1	1.81
12	Saint Bernard	1	1.81
	TOTAL	55	100

TABLE.4. SEX WISE INCIDENCE OF OSTEOARTHRITIS IN DOGS

S. No	Sex of animal	Number	Percentage%
1	Male	29	53
2	Female	26	47
	Total	55	100

TABLE.5. JOINT WISE INCIDENCE OF OSTEOARTHRITIS IN DOGS

S. No	Joint Affected	Number	Percentage%
1	Bilateral Hip Joint	36	65.4
2	Unilateral Right Hip Joint	7	12.7
3	Unilateral Left Hip Joint	6	10.9
4	Stifle Join	4	7.4
5	Elbow Joint	2	3.6
	TOTAL	55	100

TABLE.6. WEIGHT WISE INCIDENCE OF OSTEOARTHRITIS IN DOGS

S. No	Weight of the animal (Kgs)	Number	Percentage %
1	30-40	29	52.8
2	40-50	12	21.8
3	50-60	14	25.4
	TOTAL	55	100

Results and Discussion

In the present study, highest occurrence of osteoarthritis was recorded in animals presented with obesity - hip dysplasia 22 (40%), followed by hip dysplasia- poor confirmation of hind limbs 15 (27.3%), obesity – poor confirmation of hind limbs 12 (21.8%) and mixed 6 (10.9%) as mentioned in the Table-1. The main reason was overweight followed by poor conformation of the hind limbs and secondary to hip dysplasia. Our findings were similar to the findings of Bennett *et al.* (2012).

Highest occurrence of osteoarthritis was recorded in age groups of 6-10 years (45.5%), followed by 4-6 years (27.2%) and 1-4 years (23.6%) and in more than 10 years (3.7%) as mentioned in the Table-2. Similar observations were recorded by Alves *et al.*, (2022) and Bano *et al.*, (2022).

The correlation in the breed wise occurrence of osteoarthritis revealed highest incidence in Labrador Retriever (43.7%) followed by Golden Retriever (16.36%), German Shepherd (10.91%), Rotweiler (7.26%), Non-descriptive (5.45%), Pug

(3.63%), Spitz(3.63%), Cocker Spaniel (1.81%), Dalmatian (1.81%), Dachshund (1.81%), Poodle (1.81%) and Saint Bernard (1.81%), as mentioned in Table-3. Similar observations were recorded by Bano *et al.*, (2022). However, the availability of different breeds in a particular geographical location would predispose certain breeds to get affected. In the present study, highest occurrence of osteoarthritis in dogs might be due to higher population and also, pure breeds were considered to be increased risk of developing osteoarthritis, potentially linked to the inherited defects.

The occurrence of osteoarthritis in the present study was higher in males (53%) compared to females (47%), as mentioned in the Table-4. Similarly Alves *et al.*, (2022) and Bano *et al.*, (2022) also mentioned higher in male dogs. This might be due to their higher population and differences in sex hormones as well as differences in weight between male and female

In the present study, out of 147 dogs presented 55 (37.4%) were found to be osteoarthritic. Among these osteoarthritic cases, highest occurrence was observed in hip joint (89.1%) followed by stifle (7.3%) and elbow joint (3.6%), as mentioned in the Table-5. This highest occurrence might be attributed to greater percentage of excessive weight bearing of the hind limbs

In the present study, out of 55 dogs 29 (52.8%) dogs with body weight between 30-40 kgs. recorded highest occurrence of osteoarthritis, followed by dogs of bodyweight 50- 60 (25.4%) and dogs of 40-50 kg (21.8%), as mentioned in the Table-6. This might be due to over feeding that resulted in rapid growth which increases both body length and body weight and this might lead to development of osteoarthritis as a result of excess force placed on joints and articular cartilage as also mentioned by Johnson *et al.*, (2020).

Conclusions

It was concluded that overweight followed by

poor confirmation of hind limbs is the main etiology of osteoarthritis and is common in male dogs and hip joint is the most commonly affected joint in dogs.

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