



A study of diseases in geriatric dogs

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ABSTRACT

This study on aspect of the prevalence of disease in geriatric (10 years old) dogs was undertaken in Veterinary College Hospital Anand. A total of 156 geriatric dogs including 82 male and 74 female were selected. Among all, prevalence of gastrointestinal problems (16.66%) was higher followed by wound (14.10%), eye problems (14.10%) and tumour (12.17%). The prevalence rate of ear infection, dental problem, respiratory infection, behavior abnormalities, renal problems and liver problems were 4.48 %, 7.6%, 5.12%, 7.06%, 3.84% and 4.48% respectively.

Key words: Dogs, Geriatric, Prevalence.

Aging is a complex biological process resulting in the progressive reduction of an individual's ability to maintain homeostasis under internal physiological and external environmental stresses (Boari and Aste, 2003). Aging process is equally true for pet animals but life span of pets as such that it happen in much faster way. Aging is associated with various changes in body system are reduction in immune response a decline in cognitive functions (Head, 2001) and a diminished functional reserve of the cardiovascular, pulmonary, hepatic and renal systems. The objective of this study was to assess disease prevalence in geriatric dogs.

Questionnaire survey: The study population consisted of 156 dogs from hospital cases presented for health check up, vaccination and treatment were included. The questionnaire included questions covering details of the animals, management and feeding practices, preventive health care, disease and quality of life issues. From comprehensive lists owners were asked to select any sign of aging and clinical signs of disease which their dogs exhibited.

Clinical examination: Following receipt of a completed questionnaire, all owners were offered a clinical examination of their animal. Physical examination of the individual animal was conducted based on general body condition. Observations were recorded as follow: body coat, behaviour (normal/apathy/drowsy/excited/dull/depressed/alertness), mucous membrane normal/pale/congested/cyanotic/obesity. The rectal body temperature ($^{\circ}$ F), pulse rate (no/minutes) were recorded.

Laboratory examination: Eight ml of blood was collected from the recurrent tarsal vein. Haematological analysis using an automatic haematological analyser (Abacus Junior Vet-5) and biochemical analysis were estimated using biochemical autoanalyser (BS 120). Skin scraping were

collected and examined for ectoparasitic infestations. Fecal samples were collected and subjected for examination of parasitic eggs of endoparasite. The advice and recommendation were made on nutritional status, management, as suitable control measure to improve health in geriatric dogs.

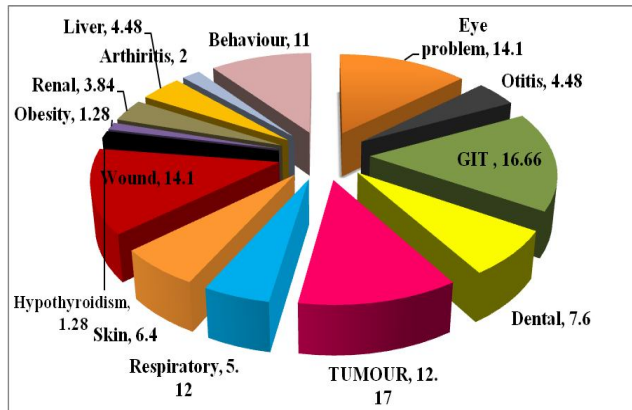
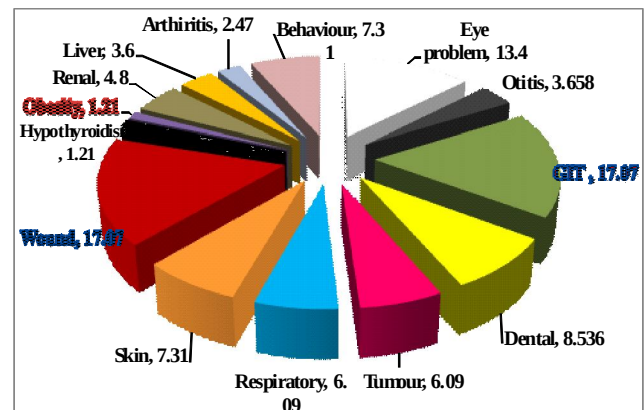
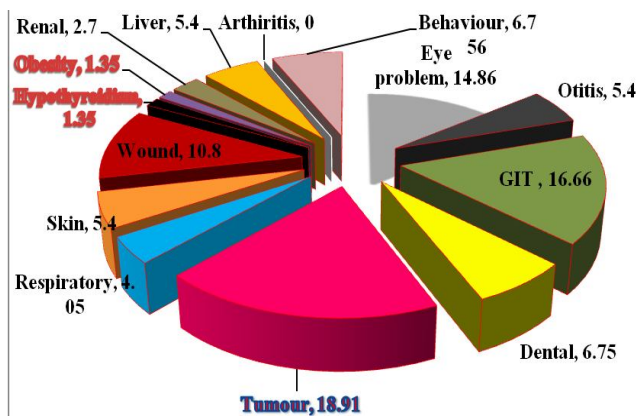
On examination, the prevalence of disease in geriatric dogs was found to be high, with the majority of animals having multiple abnormalities. A total of 156 geriatric dogs with different disease and disorder were observed during study period. Among all, the prevalence of gastrointestinal problems (16.66%) was higher followed by wound (14.10%), eye problems (14.10%), and tumour (12.17%). Prevalence of various disease and disorder are presented in Table 1 and is depicted in figure 1-3. The resistance power and immunity of the animals decreases with age which predisposes them to various infections. It is explained that age related changes occurs in gastrointestinal tract as reduced salivary secretion, impaired oesophageal functions (neuronal), reduced HCl secretion, slower rate of renewal of epithelium, reduced villous size and impaired nutrient absorption. Liver problems in geriatric dogs are also common due to decreased number of hepatocytes, increased binucleated hepatocytes, fatty infiltration, increased fibrous tissue, decreased hepatic functions and decreased bile formation.

The neoplasms reported were mammary neoplasia, prostatic neoplasia, skin neoplasia and epithelial neoplasia. The majority of neoplasm occur in older dogs and relative risk of neoplasia increases with age, there being a peak occurrence at an average age of 10 years, and however some neoplasm are common in younger animals. Prevalence of eye problems was observed with following manifestation: nuclear sclerosis, cataracts, eyelid papillomas, conjunctivitis,

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TABLE 1: Prevalence of various diseases and disorders in geriatric dogs

Type of cases recorded	Total		Male		Female	
	No. of cases	Percentage	No. of cases	Percentage	No. of cases	Percentage
Cataract and other eye problems	22	14.10	11	13.4	11	14.86
Otitis /Ear infection	7	4.48	3	3.658	4	5.4
GIT problems	26	16.66	14	17.07	12	16.66
Dental problems	12	7.6	7	8.536	5	6.75
Tumour	19	12.17	5	6.09	14	18.91
Respiratory infection	8	5.12	5	6.09	3	4.05
Skin problems	10	6.4	6	7.31	4	5.40
Wound/Prolapse/Fistula/Hernia	22	14.10	14	17.07	8	10.8
Hypothyroidism	2	1.28	1	1.21	1	1.35
Obesity	2	1.28	1	1.21	1	1.35
Renal problems	6	3.84	4	4.8	2	2.70
Liver problems	7	4.48	3	3.6	4	5.40
Arthritis	2	1.28	2	2.47	0	0
Behavior problems/lameness	11	7.06	6	7.31	5	6.756
Total	156	100	82	100	74	100

**FIG:1** Prevalence of various diseases and disorders in Geriatric Dog (%)**FIG: 2** Prevalence of diseases and disorders in male geriatric dog (%)**FIG: 3** Prevalence of diseases and disorders in female geriatric dog (%)

corneal ulcer, corneal opacity, increased susceptibility to infection, corneal pigment changes due to chronic irritation and blindness. In this study it was found that some organ systems were more likely to be affected than others, for example with increasing age: dental calculus accumulation,

gingival hyperplasia, periodontitis, gum atrophy and retraction, enamel wear, ulcerative lesions and tooth loss.

Kyllar and Writter (2005) reported increased occurrence of periodontitis with age. Harvey *et al.* (1995) reported that periodontal disease is more common in small size dog breeds compared with large size breed and also in older than the younger ones. The occurrence of obesity increased with age probably due to reduced lean body mass and reduced exercise and over nutrition. Prevalence of wound (14.10%) was more in geriatric dogs which included infected wound, fistula, prolapsed mass injury and dog bite wound.

Krawiec (1989) reported disorders of the urinary system are common in geriatric dogs. Common urinary disorders were chronic renal failure, urinary incontinence, bladder tumours, and prostate problems. Laroute *et al.* (2005) conducted a study for identity age associated differences in renal functions in young and geriatric dogs. Endocrine problems were found lowest in comparison to other diseases. It was due to lack of awareness and diagnostic facilities.

Respiratory problems (5.12%) also had high incidence rate. It was associated with physiological changes with age as obstructive lung disease, reduced ciliary activity, decreased secretions with increased viscosity, pulmonary fibrosis, decreased alveolar diffusing capacity and chronic bronchitis. In male high incidence of wound (17.07%) and gastrointestinal problems (17.07%) occurred. The commonest neoplasm reported in geriatric male dogs in present study were epulis, penile tumour, tumour at anus, splenic tumour. Behavior abnormalities observed in present study were aggression to people, destructive behavior, house soiling and crying at night. Azcona *et al.* (2009) reported prevalence and severity of behavioral changes associated with age such as cognitive sleepness cycle, social interaction, learning and house training and signs of disorientation. In female geriatric dogs, prevalence of diseases and disorders was found different from male group. Prevalence of neoplasm (18.91%), gastrointestinal problems (16.66%) and eye problems (14.86%) wound/prolapse/fistula/hernia (10.8%), dental problems (6.75%), behavior abnormalities/limpness (6.75%), ear infections, skin problems and liver problems (5.4%) were found.

Senile changes: In senile changes dental abnormalities (60) followed by vision impairment or ocular changes (50) were observed. The signs of aging in geriatric dog were observed presented in Table 2 and figure 4. Age related changes in nutrition were reduced appetite, reduced sense of taste and reduced sense of smell. Energy requirement might be reduce because of less exercise and changes in behavior or secondary to other problems, e.g. an orthopedic problem such as degenerative joint disease or osteoarthritis. Graying of the hair particularly around the face and muzzle is common with advancing age. Hair coat was observed thinner and dull.

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Calluses were found in large breed. Vision loss was observed in some dogs. Musculoskeletal abnormalities like lameness, paraplegia and limping of legs were also observed. Owners identified at least one sign of aging in 94.6% of dogs and at least one clinical signs of disease (within the previous 12 months) in 85.1% of dogs.

TABLE 2: Survey of senile changes in geriatric dog

Sign of aging	Frequency
None	5
Vision impairment/Ocular changes	50
Hearing loss	20
Increased grey hair / hair shedding / hair loss / calluses / skin thinning	10
Loss of muscle tone	20
Dental abnormalities /tartar /discolor	60
Paraplegia	10
Organ function loss	30

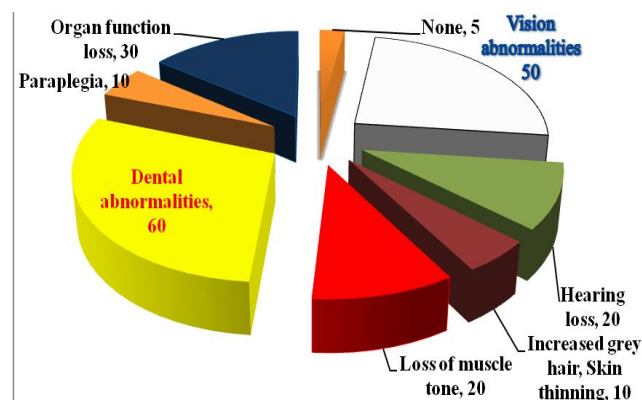


FIG: 4 Senile changes in geriatric dog (Frequency of occurrence)