

A REPORT ON
DISEASES OF DOG IN MADRAS VETERINARY COLLEGE



Submitted By

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Reg. No: 199

Intern ID No: A-07

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Faculty of Veterinary Medicine
Chittagong Veterinary and Animal Sciences University
Khulshi, Chittagong-4202.

**A REPORT ON
DISEASES OF DOG IN MADRAS VETERINARY COLLEGE**



**A Clinical Report Submitted as Per Approved Style &
Content.**

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Signature of Author

Name :Abdullah-Al-Mujahid

Roll No: 05/07

Reg.No:199

Intern ID:A-07

Date of submission: 17.02.2011

.....

Signature of Supervisor

Name:Dr. Pankaj Chakraborty

Designation:Lecturer

Department:Dept.of Medicine &

Surgery

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Acronyms used

MVC	Madras Veterinary College
IP	In Patient
MM	Mucous Membrane
GA	General Appearance
GSD	German Shepherd
ND	Non Descriptive
FH	Feeding Habit
UF	Urine Feces

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The Author

ABSTRACT

The study was conducted at Madras Veterinary College (MVC); Chennai, India from 15th may to 17th June 2010. During the study period a number of 40 cases of dog were found in different unit of MVC. The data were collected by direct interview with doctors, internship student and patient owners. The cases found in small animal medicine unit (30%) are higher than any other unit. Sequentially the cases of small animal dermatology, in patient, immunization, orthopedics and obstetrics & gynaecology units are 27.5%, 7.5%, 10%, 10%, 7.5%, 7.5% respectively. Males (75%) are more affected to disease than females (25%). Puppies are more prone to disease (45%) than adult (32.5%) and older (22.5%) animal. Labrador (30%) and spitz (25%) breeds are more susceptible to disease than others. Only Labrador and spitz complete about 55% of total affected/diseased animal. Dogs are mostly affected by Parvo virus infection, bacterial pyoderma, babesiosis, congestive heart failure etc. Most of the cases treatment was given through confirmatory diagnosis in the laboratory. For example microscopic examination of blood for blood protozoa, blood biochemical test (Protein, BUN, S-GPT, Creatinine level) for congestive heart failure, parting of hair for tick infestation, IDST(Intra dermal skin test) for Atopic dermatitis, wood's lamp test for pyogenic dermatitis, X-ray for fracture, ultrasonography and ballottement test for pregnancy diagnosis. Ivermectin is mostly used for tick infestation, cyclosporine for atopic dermatitis, antibiotic ointment for bacterial pyoderma, sulphoben shampoo, nutricote advance(contain essential fatty acid),vitamin AD₃E for dermatitis, shampoo composed of benzyl peroxide, tar, selenium sulfoxide, ketokonazole for malassezia, lactate ringers solution, vomidone, metronidazole for parvo virus infection, frusemide, digoxin for congestive heart failure, berenil for babesia, combination of fenbendazole & praziquantal or combination of pyrantal pomet, prazequintal & fenbendazole for deworming, meloxicam for pain killer.

Key words: Patient, disease, diagnosis, treatment.

Chapter-1

INTRODUCTION

1.1 Background of the study

The oxford companion to animal behavior has been designed as a non specialist introduction to the animal behavior. Its scope includes the scientific discipline of ethology and touches upon the related disciplines of ecology, genetics, physiology and psychology. The companion is a handbook and not a dictionary or encyclopedia. It is intended to provide the reader with a guide to current scientific thought to all aspects of animal behavior and to aid further study by means of bibliographical references (**Case et al., 1995**).

India's dog population is estimated at 25 million and can be divided into four categories which can be defined as follows: pets (restricted and supervised); family dogs (partially restricted, wholly dependent); community dogs (unrestricted, partially dependent); and feral dogs (unrestricted, independent) (**Menezes R. 2008**). Approximately 80% of the population fall into the latter three categories leaving over 5 million dogs within the 'pet' category. In a recent survey, 17% of households in India were reported to own a pet/domesticated dog (**Sudarshan, 2006**). Despite this, information available to veterinarians concerning the prevalence, epidemiology, diagnosis and management of canine vector-borne diseases (CVBD) and those of zoonotic concern is scarce (**Irwin P, Traub R. 2006**). This is not entirely unexpected in a country such as India where agriculture is the means of livelihood for about two-thirds of the work force and competency in animal husbandry/production animal medicine are rightfully emphasized in university veterinary curricula to meet the demands of India's agricultural/rural community. However, with one of the fastest growing economies in the world, India's increasingly affluent middle class is becoming increasingly accustomed to Western culture. This has resulted in changing attitudes towards companion animal ownership, with higher expectations and demands being placed on veterinary surgeons and the

companion animal industry for improved knowledge of veterinary diseases and products for treatment and control. (**Woodford JD. 2004 & Irwin P, Traub R. 2006**)

"A dog is man's best friend." That common saying may contain some truth, but dogs are not the only animal friend whose companionship people enjoy. For many people, a cat is their best friend. Despite what dog lovers may believe, cats make excellent house pets. (**Clark et. al., 1983**)

Friendly association with dogs with man is known from time immemorial. With the passage of time the dog has changed itself in respect of its habits, behavior and living pattern. At present it is a popular pet all over the world. In recent years there has been increasing interest particularly in urban areas, in dog keeping. Earlier pet dogs made dog keeping a necessity. To meet the increasing demand for pet dogs, more and more breeding kennels are coming up. Today one finds dog breeding studs even in small towns. Most of the dog owners are ignorant about the habits and behavior of dogs. Increasing importance of dogs has resulted in inclusion of specific courses on various aspects of dog management in the curriculum of veterinary education. (**Sharma M.C et al., 1993**).

Today approximately 38% of households in the United States own at least one dog-a total of more than 55 million dogs. An 8-billion-dollar pet food industry and the more than 7-billion dollars that pet owners spend on veterinary care each year provide tangible evidence of the increasing importance that dogs have in our society. This devotion is further illustrated by the recent growth of the pet supply industry, which includes pet "super-stores," play-parks, training centers, and dog day care centers in many communities. The bond that owners have with their dogs and the numerous research studies in the past 25 years. The dog as a cherished companion and family member is here to stay, and many owners, students, and companion animal professionals are eager to learn more about man's best friend, canis familiaris. (**Linda. P. C. 1999**).

1.2 Breed standard of dog

All dogs, impure as well as pure-bred, and several wild cousins such as wolves and foxes, are one family. Each breed was created by human beings, using selective breeding to get desired qualities. The result is an almost unbelievable diversity of purebred dogs that will, when bred to others of their breed, produce their own kind. A "breed standard" is a written description of a given breed. This description uses words to define what a breed should look like. A standard exists for each of the breeds recognized by The American Kennel Club (AKC) and is the standard each breed is mentally measured against. Throughout the world there are several hundred distinctive breeds of purebred dogs, not all of which are AKC recognized breeds. There are currently 147 breeds officially recognized by the AKC. Each breed is assigned to one of the following seven groups, based on the uses for which the breeds were originally developed. These seven groups include: Group 1 -- Sporting Dogs; Group 2 -- Working Dogs; Group 3 -- Terriers; Group 4 -- Toy Breeds; Group 5 -- Non-Sporting Breeds; Group 6 -- Herding; and Group 7 -- Hounds. The Sporting dogs are naturally active and alert, likable, and well-rounded companions. Members of this Group include pointers, retrievers, setters and spaniels. Remarkable for their instincts in water and woods, many of these breeds actively participate in hunting and other field activities. Potential owners of Sporting dogs need to realize that most require regular, invigorating exercise. Dogs of the Working Group, of which there are 21, were bred to perform such jobs as guarding property, pulling sleds and performing water rescues. They have been an invaluable asset to human being throughout the ages. The Doberman pinscher, Siberian Husky and Great Dane are included in this Group. Quick to learn, these intelligent, capable animals make solid companions. The Terrier Group is a group of "feisty, energetic dogs" whose sizes range from fairly small, as in the Norfolk, Cairn to the grand Airedale Terrier. This group consists of 25 different recognizable breeds. Their ancestors were bred for hunting and killing vermin. These dogs are very determined and are often described as projecting an attitude that they are always eager for a spirited argument. They require owners with the determination to match their lively characteristics. With 20 separate breeds in it, dogs in

the Toy Group are full of energy. These dogs may look little and fragile, but "many Toy dogs are tough as nails". This group is popular for people who do not have a lot of space for a larger dog. This group contains the ever lovable Chihuahua, Italian Greyhound, and Poodle. The diminutive size and winsome expressions of Toy dogs illustrate the main function of this Group: to embody sheer delight .The Poodle, Dalmatian, and Bulldog are a few examples of the 17 breeds you will find in the Non-Sporting Group. This is an extremely diverse group of dog breeds. Some are extremely rare to find, while others are seen all the time and everywhere."The breeds in the Non-Sporting Group are a varied collection in terms of size, coat, personality and overall appearance" .The Herding Group, consisting of the Collie, Border Collie, and German Shepherd Dog are some of the most popular family pets. This is an astounding group of smart dogs. Formerly members of the Working Group, they were separated into their own group in 1983. "All breeds share the fabulous ability to control the movements of other animals". These dogs make wonderful, obedient pets if given the time for training and exercises. The Hound Group contains such popular dogs as the Basset Hound, Bloodhound, and Greyhound. There are 22 separate breeds in the Hound Group alone. Most hounds share the common ancestral trait of being used for hunting, for example, some use acute scenting powers to follow a trail. Others demonstrate a phenomenal gift of stamina as they relentlessly run down prey. Purebred dogs are found in a variety of sizes, shapes, colors and personalities (**Tietjen S.B.2003**).

Objectives

- To know about the diseases of dog in madras areas i.e. in Chennai.
- Disease diagnostic procedure of dog in Madras Veterinary College.
- Treatment procedure followed in Madras Veterinary College.

Chapter-2

REVIEW OF LITERATURE

2.1 The origin and domestication of dogs

Exactly when dogs arrived is still uncertain, archeological evidence is scarce but most dog fossils date back to 7,000 years ago (**Kendall, 2002**). Current studies suggest that Palaeolithic human were probably the first to tame dogs (*Canis familiaris*) by breeding aggression out of wolves (*Canis lupus*) in East Asia around 15,000 years ago (**Savolainen et al., 2002**). Compared maternally inherited mitochondrial DNA (mDNA), of 38 Eurasian wolves with that of 654 domestic dogs samples across Asia, Europe, Africa and the Arctic America to assess the number and location of dog domestications. Their findings suggest a common origin from a single gene pool for all dog populations. The genetic variation of dogs in China, Thailand, Cambodia, Tibet and Japan is much larger than in Europe, West Asia, Africa and Arctic America suggesting an East Asian origin for the domestic dog. (**Leonard et al.,2002**) isolated mitochondrial DNA sequences from ancient dog remains from archaeological sites predating European settlement in Latin America and Alaska and showed that Native American dogs were more closely related to Eurasian dogs and wolves than were American wolves. They concluded that domestic dogs in America originated from multiple Old World lineages of dogs that accompanied late Pleistocene humans across the Bering Strait. (**Hare et al., 2002**) suggest that during the process of domestication, dogs have been selected for a set of social and cognitive abilities. Dogs serve people in many important ways; guarding property and domestic livestock, assisting the blind and other disabled people, performing search and rescue missions, acting as sled animals, detecting explosives and drugs etc. Clearly dogs are useful and important domestic animals and pets. However, without proper care and handling stray or feral dogs may become a nuisance and cause serious damage.

2.2 Disease of dog

The incubation period in experimentally infected arctic foxes has been reported to vary from 8 days to 6 months (**Konovalov GV.1965, Rausch RL.1972**). The clinical course is usually short and foxes may die within a day or 2 after the onset of symptoms. Initially, the arctic fox loses its natural timidity. It may enter villages or human settlements and there are examples of foxes having followed dog teams. In the excitative phase, the fox becomes aggressive and may snap and bite, and sometimes runs in circles. Excessive drivelling and foaming are also typical symptoms. In the following phase, the animal becomes paralytic and eventually dies. Both the furious form of the disease, dominated by aggressive behavior, and the dumb non-aggressive form, dominated by paralysis, have been described in the arctic fox (**Kantorovich RA.1964, Crandell RA.1991**).

Bailey (1972), Lobetti (2000), Dvir et al., (2001), Mazaki-Tovi et al., (2002). Spirocercosis due to *Spirocerca lupi* (a parasitic nematode) is worldwide and is endemic in some warm climates. Despite the importance of *S. lupi* in causing dysphagia, vomiting, esophageal neoplasia, aortic aneurysm or rupture, and secondary pulmonary osteoarthropathy very few studies are conducted on the epidemiology and pathologic lesions of this infection. The important factors affecting prevalence of this disease are proximity to intermediate and paratenic hosts and the population density of intermediate and infected adult hosts (**Brodley et al., 1977, Johnson 1992, Kagira and Kanyari 2001**). This nematode is infective for many species including human beings, but affects mostly carnivores.

Samad M.A. (2000). Most of the Bacterial diseases of dogs are tetanus, tuberculosis, brucellosis, leptospirosis; viral diseases of dogs are canine distemper, infectious canine hepatitis, rabies; parasitic diseases are hookworm, tape worm, whipe worm, giant kidney worm, heart worm etc.

Caroline D. Levin RN. (2001). Constant inflammation of the pancreas, liver, and intestinal lining results in a sustained production of cortisol. The adrenal glands, exhausted from this sustained effort, may produce cortisol that is biologically inactive, which fails to shut off the ACTH feedback loop. The pituitary gland may become hypertrophied and exhausted. Excessive cortisol production, prescription steroids, intestinal scarring, and the otherwise-occupied white blood cells hamper IgA production. IgA deficiency allows for the continued infiltration of large protein molecules into the body. Additional antibodies are deployed, which memorize the amino acid chains of the large protein molecules, and attempt to destroy them. These antibodies later recognize that same amino acid chain elsewhere in the dog's own body. Unable to distinguish between self and non-self, the antibodies destroy these tissues, which results in a variety of autoimmune diseases.

Kommenou A., Koutinas A.F. (2007). Ehrlichiosis(*Ehrlichia Canis*), leishmaniosis (*Leishmania infantum*) and dirofilariosis (*Dirofilaria immitis*) mainly cause intraocular disease, most often exemplified by immunological uveal tract damage, onchocercosis (*Onchocerca* spp) and thelaziosis(*Thelazia calipaeda*) affect the adnexa and periocular tissues in the majority of cases. Apart from the specific treatment, which may be either conservative or surgical, applied for the disease, topical glucocorticosteroids, antibiotics and/or mydriatics-cycloplegics accelerate the healing process and may prevent post-treatment complications.

Scott E. Poock et al., (2008). observed that Canine heartworm infection causes disease primarily in the small pulmonary arteries and secondarily in the heart. *Dirofilaria immitis* adults are thin worms that reach 10 to 12 inches in length. The adult worms live in the peripheral branches of the pulmonary arteries and produce large numbers of microscopic offspring (microfilaria), which circulate throughout the bloodstream. Heartworm disease is caused by the body's immunologic reaction to the presence of the

adults and offspring. The body produces a number of different substances to destroy these foreign proteins. In the process, the vascular system of the lungs is damaged.

Sravanthi P. and Matham V.K. (2009). Confirmed that Pups below 6months of age possible diagnosis is distemper,infectious canine hepatitis, parvoviral infection, bacillary diarrhea, hook worm infestation and pups above 6 months of age possible diagnosis is leptospirosis, meningitis, metritis, inflammation of rectal glands, hook worm infestation.

Peter J. Irwin (2009). Canine babesiosis is a common and clinically significant tick-borne haemoprotozoan disease with a worldwide distribution. *Babesia* species are often referred to as piroplasms, a collective term for phenotypically similar protozoan parasites that utilise mammalian erythrocytes in their life cycle. Piroplasms of domestic animals encompass two main genera, *Babesia* and *Theileria*, and have been subject of intense research interest and molecular-based re-classification during the last 10 years. In dogs, infection by these haemoparasites results in a wide range of clinical presentations; from subclinical disease to serious illness characterised by fever, pallor, jaundice, splenomegaly, weakness and collapse associated with intra- and extravascular haemolysis, hypoxic injury, systemic inflammation, thrombocytopenia and pigmenturia.

Shilo Y., Pascoe P. J., Cissell D., Johnson E. G., Kass P. H. and Wisner E. R. (2010). An ultrasound-guided, perineural injection was used with saline at 0.2 mL kg^{-1} (Sal) or bupivacaine 0.5% at 0.05 (low dose; LD), 0.1 (medium dose; MD), or 0.2 (high dose; HD) mL kg^{-1} , divided 2/3 at the sciatic nerve and 1/3 at the saphenous nerve. Blocks were performed using dexmedetomidine sedation with atipamezole reversal immediately after completion of the injections. Motor/proprioceptive and sensory functions were scored using a 0–8 and a 0–2 scale, respectively. Clinically relevant blocks were defined as a motor score ≥ 2 and sensory score ≥ 1 . Nonparametric methods were used for statistical analysis.

2.3 Registration Organizations

Tietjen S.B. (2003). Several organizations throughout the world register purebred dogs. In general, their charters are similar, and they share the common goal of preserving the integrity of purebred dog breeds. There are clubs that sanction various forms of competition, and others that deal solely with medical issues. Some of the oldest, largest, and most familiar include:

The American Kennel Club (AKC) -- Founded in 1884, it is the oldest and most prestigious dog registration organization. The AKC includes in its mission: maintaining and preserving the integrity of a registry for purebred dogs; sanctioning of dog events that promote interest in, and sustain the process of, breeding for type and function of purebred dogs; and taking whatever actions are necessary to protect and assure the continuation of the sport of purebred dogs. These activities are undertaken with the objective of advancing the study, breeding, exhibiting, running, and maintenance of purebred dogs

The United Kennel Club (UKC) -- The UKC was formed in 1898, and today provides an alternative to the more widely known AKC in the United States. It performs many of the same functions: registry, shows, and stud books. The UKC recognizes 212 breeds, including some that the AKC does not. The UKC offers breed, obedience, agility, and hunting trials .

2.4 Health Related Organizations

Tietjen S.B. (2003). These are some of the organizations working on canine medical issues:

Institute for Genetic Disease Control in Animals (GDC) -- In an open registry such as the one maintained by GDC, owners, breeders, scientists, and veterinarians can trace the genetic history of any particular dog. In order to control the increasing presence of

genetic diseases, we must know how prevalent such diseases are in the breed and in any particular dog's bloodlines. The information about each dog automatically becomes linked in the open registry with their relatives. An open registry offers this information for the selection of mates whose bloodlines indicate a reduced risk of producing genetic disease.

The Orthopaedic Foundation for Animals (OFA) -- This organization specializes in examining and rating dogs with specific regard to hip dysplasia.

The Canine Eye Registration Foundation (CERF) -- An organization dealing with canine diseases of the eyes.

Other organizations have embarked upon research and education programs related to health and genetic diseases in specific breeds. Of all AKC registered breed clubs, nearly three quarters have committees to address health concerns in their breeds. Nearly half have a code of ethics that includes health issues. Many breed clubs have either formed or are investigating the formation of tax exempt foundations to pursue health issues within their breeds.

Among the organizations implementing such health related programs are:

The Scottish Terrier Club of America (STCA)- Health Trust Fund, which was founded in 1994 to detect and investigate health problems; monitor health in Scottish Terriers; participate in research to enhance the prevention of illness; develop and advocate sound breeding practices; foster safe and healthy environments; study and share information that promotes better health in all purebred dogs; and promote and encourage constructive attitudes toward health concerns. In addition, membership in the S.T.C.A. requires that a Code of Ethics be signed which supports the issue of genetic disease elimination in the breed.

The Cairn Terrier Club of America (CTCA)- Their Committee for Health Related Concerns surveyed club members in 1987 for the purpose of determining the presence and frequency of genetic diseases in the breed. They have subsequently carried out an intensive education program, engaged the Institute for Genetic Disease Control to provide their open registry, and produced an award winning reference manual on Cairn Terrier genetic diseases.

The West Highland Anomaly Task Council, Inc. (WATCH)-which was formed in the late 1980s for the purpose of understanding and controlling genetic diseases in West Highland White Terriers. Watch has undertaken programs for education, information sharing, genetic counseling, and research. They have conducted health surveys among the WHWT population, and created a registry to track several genetic anomalies in Westies.

The Jack Russell Terrier Club of America (JRTCA). Unlike other registries which register entire litters at birth, each JRT application for registration is judged on the individual terrier's own merits. Having registered parents does not automatically guarantee that a terrier can be registered. A terrier is not eligible for registration until it reaches one year of age and has attained its adult height, dentition, and other aspects considered necessary for full maturity. Each terrier's application for registration must be accompanied several documents, including a veterinary certificate, a four generation pedigree, a stud service certificate, and color photographs which support the conformation of the dogs to the club standard.

Projects TEACH of the Pet Health Initiative -- Project TEACH (Training and Education in Animal Care and Health) was formed to educate about proper animal care and methods of genetic screening. Project TEACH is an accreditation program for individuals. All TEACH-accredited breeders, pet shops, rescue organizations and humane societies will screen animals for potential problems before they are sold.

AKC Canine Health Foundation -- Established by the AKC in 1995 with a million dollar endowment. The Foundation is intended to raise money to support health research which will benefit dogs, and will identify areas for research and seek qualified individuals to do the research through its Scientific Advisory committee, concerned fanciers, the Delegate Committee on Health Research and Health Education, and others. Since the early 1980's, AKC has been a major funder of genetic research to benefit dogs. The AKC was the principal funder of the work of Dr. Donald Patterson at the University of Pennsylvania to develop the Canine Genetic Disease Information System, a database for veterinarians.

Better Companion Breeders Association (BCBA) - Formerly the Better Dog Breeders Association (B.D.B.A.). A public service agency devoted to the protection of the buying public. They provide their service free to the public, while providing members with special services to assist them in operating their business.

Chapter-3

MATERIALS AND METHOD

This study was done during the time period of 17th May 2010 to 16th June 2010.

3.1 Selection of the study area:

It was a bare necessity to select the areas, which would provide maximum information regarding dog. The selection of the study area depends in the objectives of the study. On the basis of available information Madras Veterinary College, Chennai, Tamil Nadu, India was selected.

3.2 Preparation of survey schedule:

For this study survey method was followed to collect data. It is very important in any survey to prepare an interview schedule. After consulting the available literature on dog and keeping the objectives of the study in view to sets of close-cum-open type interview schedules we prepared and pretested as well as made correction.

3.3 Selection of sample:

In this study 7 units were selected and were taken the case history found there conventionally from Madras Veterinary College. Forty cases were observed during the time period. Small animal units (for dogs) of the madras veterinary college are as follows-

1. Small Animal Dermatology,
2. Small Animal Medicine Unit,
3. Small animal In Patient Unit,
4. Small animal surgery,
5. Small Animal Immunization,
6. Small animal Orthopedics and
7. Small animal Obstetrics & Gynaecology.

3.4 Methods of data collection:

The researcher himself conducted the whole survey. The data were collected from both primary and secondary sources for the study. Anamnesis or case history was taken from owner of the patients on the basis of following topics-

1. Vaccination
2. Deworming
3. Feeding habit
4. Use any shampoo
5. Any lesion in the body
6. Abnormal posture / gait :Lye down
7. Feces

After taking history observe the animal according to owners complain-

1. Tick on body
2. MM
3. Heart rate
4. Temperature
5. Pulse rate
6. GA
7. Feces



Figure-1: Taking pulse rate of dog



Figure-2: Taking heart rate

Then discuss with the doctor for probable diagnosis and treatment of the patients.

Chapter-4

RESULTS AND DISCUSSION

4.1 Small Animal Dermatology

Dermatology unit is an important unit in madras veterinary college, category after medicine unit. Cases found in dermatology unit are as follows-

Table-1: Cases found in dermatology unit

Breed	Age	Sex	Weight	Disease
Labrador	3year	Female	30 kg	Bacterial pyoderma
Labrador	2year	Male	26 kg	Tick infestation
Spitz	6month	Female	10 kg	Atopic dermatitis
Labrador	1.5year	Female	30 kg	Pyogenic dermatitis
GSD	1.5year	Female	35 kg	Dermatophytosis
Labrador	9year	Female	30 kg	Bacterial pyoderma
ND	2year	Male	30 kg	Dermatitis
Labrador	1.5year	Female	30 kg	Bacterial pyoderma
Spitz	8month	Female	8 kg	Flea allergic and atopic dermatitis
Labrador	4month	Female	10 kg	Malassezia
Spitz	2year	Female	16 kg	Malassezia

Table-2: Disease affected percentage in dermatology unit

Breed	No of affected animal	Affected (%)
Labrador	6	54.55
Spitz	3	27.27
GSD	1	9.09
Non descriptive	1	9.09

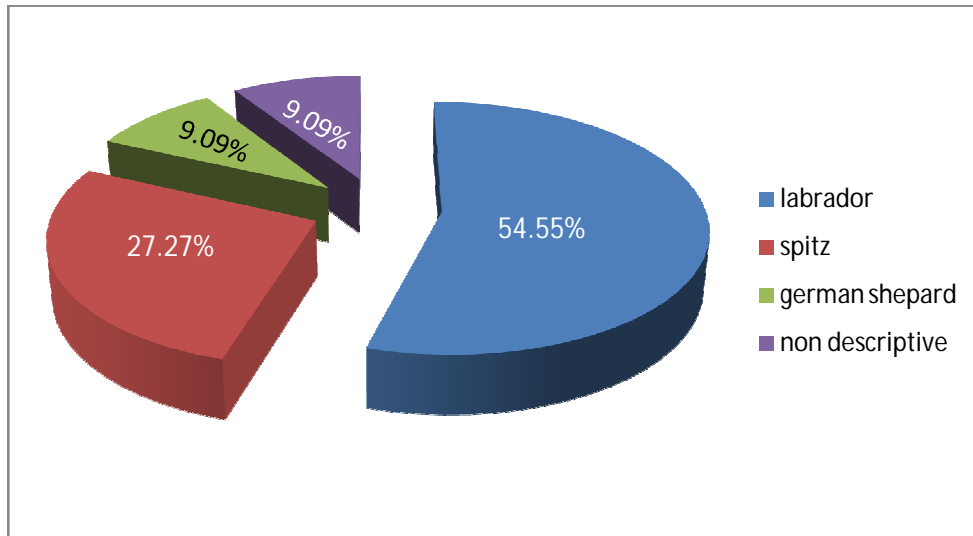


Figure-3: Disease affected percentage in dermatology unit

In Chennai we observed that most of the adult Labrador dog are more susceptible (54%) to skin disease (Bacterial pyoderma, Tick infestation, Atopic dermatitis, Pyogenic dermatitis, dermatophytosis, dermatitis, flea allergic, Malassezia) than other breeds. Spitz (27.27%), German shepherd (9.09%) and local breed (9.09%) are less susceptible to skin disease. Bacterial pyoderma are more common disease in Labrador dog. Spitz breed are mostly affected by flea allergic and atopic dermatitis, Malassezia. (Figure-3)

Tick infestation is diagnosed by following technique

Observation: parting of hair → tick found (*Rhipicephalus sanguinus*). dermatitis lesion found in the shoulder, leg, and back area.

Treatment: 1.inj.ivermectin 1ml-s/c

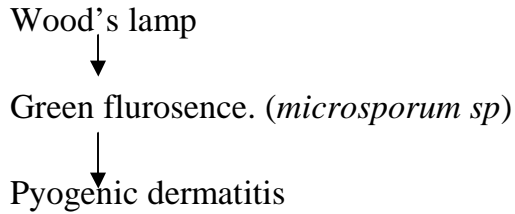
Atopic dermatitis is confirmed by IDST (intra dermal skin test).



Figure-4: Wood's lamp test

Treatment: 1.cap: cyclosporin-A 5mg/kg-orally.

Labouratory examination of **pyogenic dermatitis**



Treatment:

1. Tab:CIPTAS-10
2. Tab:easypet-500mg*2
3. Dressol-1bottle.

In case of **bacterial pyoderma** the following laboratory diagnostic procedure are followed-

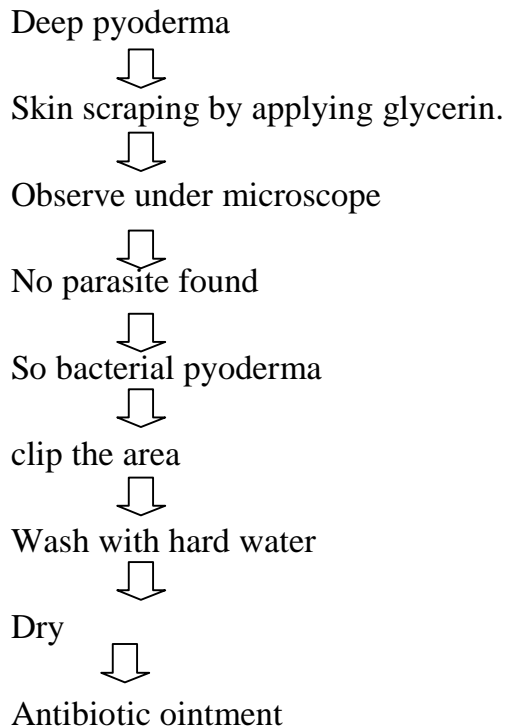


Figure-5: Microscopic observation of skin scraping

Now send sample for bacterial culture to microbiology laboratory.

Treatment

1. antibiotic ointment-apply locally
2. Phexcin syrup-1teaspoon 2times daily

When Tentative diagnosis is **dermatitis** then following Treatment are followed

1. sulphoben shampoo.
2. nutricote advance(contain essential fatty acid)
3. inj: vitamin AD₃E.



Figure-6: Dermatitis

In case of **flea allergic and atopic dermatitis** following Treatment are followed

1. cap: cyclosporin-A:5mg/kg-orally.

In case of **Malassezia** Treatment shampoo composed of benzyl peroxide, tar, selenium sulfoxide, ketokonazole.

4.2 Small Animal Medicine

The most important unit in madras veterinary college. The disease found are as follows

Table-3: Cases found in small animal medicine unit

Breed	Age	Sex	Weight	Disease
Mixed	3month	Male	15 kg	Parvo virus infection
Great Dane	2year	Male	36 kg	Parvo virus infection
Pomeranian	20days.	Male	800gm	leptospirosis
Spitz	8month	Female	4 kg	Gastritis
Spitz	2month	Female	1kg	Parvo virus infection
GSD	8month	Male	15 kg	Parasitic infestation
GSD	7month	Male	15 kg	Babesiosis
Spitz	8month	Male	8 kg	Parvo virus infection
GSD	9month	Male	18kg	Babesiosis
ND	5month	Male	12 kg	Bacterial infection
Labrador	3years	Male	15 kg	Congestive heart failure
Labrador	2month	Male	15 kg	Congestive heart failure

Table-4: Disease affected percentage in small animal medicine unit

Breed	No of affected animal	Affected %
Mixed	1	8.33
Great Dane	1	8.33
Pomeranian	1	8.33
Spitz	3	25
GSD	2	16.67
ND	1	8.33
Labrador	2	16.67

In Chennai we observed that most of the adult Spitz dogs are more susceptible (25%) to disease (Parvo virus infection, Fever, Gastritis, Babesiosis, Bacterial, infection, Congestive heart failure) than other breeds e.g Labrador (16.67%), German shepherd(16.67%) and local breed(8.33%),Mixed(8.33%), Great dane (8.33%), Pomeranian(8.33%). Parvo virus infections are more common disease in Spitz dog. Labrador breed are mostly affected by Congestive heart failure. Because of their vigor size and more tendencies to resting and cause blockage of their artery by fat (Table-3,4).

Following diagnosis and treatment procedure are followed in **Parvo virus infection**

Treatment:

1.inj:LR-200ml-i/vly

2.inj.vomidone

3.inj.metronidazole-12.5ml-i/vly.

Congestive heart failure is confirmed by blood biochemical test (Protein, bun, sgpt, Creatinine level).Following treatment procedure are followed in congestive heart failure –

1.Inj:Frusimide:4ml-i/mlly

2.tab:digoxin-0.3gm



Figure-7: Congestive heart failure

Following diagnosis and treatment procedure are followed in **babesiosis**

Observation:

- Temp-104.8⁰F
- Spleanomegaly
- Tick present on the body.

Biochemical examination: blood —————→ *Babesia gibsoni.*

Treatment:

1.inj:berenil-3.5mg/kg

2.inj: prednisolone-1ml-i/mlly

Dogs are **dewormed** with Tab:fenben(composition fenbendazole+praziquantal) or Tab: Easypet-1(pyrantal pomet+prazequintal+fenbendazole).

4.3 Small Animal Clinic (I.P)

Cat (4 cases) —————→ Spaying.

Dog female (Dascheand) —————→ Cystic calculi.

Dog female (GSD) —————→ tail amputation.

Dog female (Spitz) —————→ Maggot infestation i.e: myiasis in vulva & tail.

Visiting time for owner: 10am-11am & 4pm-5pm.

Doctor supervision:

Morning schedule: 8am-12.30pm

Post lunch operation: 2pm-5pm

Night duty: casualty doctor by turn.

In inpatient unit surgically operated patient are usually kept for 24hr doctors supervision.



Figure-8: Elizabeth collar in small animal IP.

4.4 Orthopaedic unit

Table-5: Cases found in orthopaedic unit

Breed	Age	Sex	Disease
Dalmatian	2month	Male	Exophthalmoses
ND	4 month	Male	fracture on the left fore limb
Spitz	3year	Male	Paraplegia

Confirmatory diagnosis by X-ray

Correction: Bandage application.

Treatment:

1. Inj: DNS-100ml i/v
2. Inj: Intacef-100mg, i/v (Ceftriaxone+Tazobactam).
3. Inj: Dexamethasone-.5ml i/m
4. Inj: Meloxicam- .5ml i/v

But in case of paraplegia the treatment procedure is followed

1. Intamox- 300mg i/m(ampicillun+cloxacillin)
2. Inj: RL-200ml i/v
3. Prednisolone-.5ml i/m



Figure-9: Exophthalmoses

4.5 Small animal surgery:

Table-6: Cases found in Small animal surgery unit

Breed	Age	Sex	Weight	Abnormalities	Management	Treatment
ND	10 years	Male	30 kg	Wounded at ear and right lateral face reason	Dressing of the area with tincture iodine	.5ml meloxicam- i/v
Labrador	3year	Male	30 kg	Wound on the dorsal lumber reason	Dressing with povidone iodine solution	Gauge placed with OTC Hcl solution
ND	1.5years	Male	30 kg	Maggot infestation in tail	Dressing the area with tarpin oil	.5ml ivermectin –s/c .5ml meloxicam- i/v
ND	3year	Male	30 kg	Fracture of left radius bone	Dressing with povidone iodine & bandage application	.5ml meloxicam- i/v



Figure-10: Fracture management of local dog

4.6 Small animal immunization unit

- Spitz-age 6weeks(male)
- German Shephard-age 12 weeks(male)
- Pug-age 9weeks(male)
- Labrador-age 6weeks(male)

All dogs are immunized with DHPPi/L.

Table-7: Vaccination schedule of dog by DHPPi/L

Age(week)	Vaccine
6	DHPPi/L
9	DHPPi/L
12	DHPPi/L+rabies
15-16	DHPPi/L
yearly	DHPPi/L+rabies

4.7 Obstetrics And Gynecology Unit

Breed: Labrador

Age: 3year

Sex: Female

Weight: 30 kg

Anamnesis: Owner reported that dog has been brought for pregnancy for diagnosis. It was on mated on 9th, 11th, 13th may.

Observation:

- G/A: Active
- F/H: Satisfactory
- U/F: Voided normally

Diagnosis by Ultrasonography → +ve(pregnant)

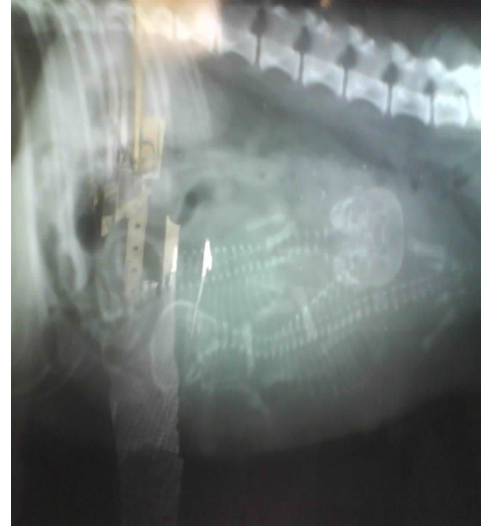


Figure-11: Ultrasonography

Breed: Labrador

Age: 10 year

Sex: Female

Weight: 30 kg

Anamnesis: For pregnancy diagnoses

Observation:

- Tumor like growth on second pair of teat on palpation no pain

- Owner reported that dog is vomiting for four days
- Mammary gland examination
- Milk secretion noticed
- Tumor noticed and 5cm long
- Abdominal palpation –no

Tentative diagnosis: mammary tumor +pseudo pregnancy

Confirmatory diagnosis ultrasonography → -ve(non pregnant).

Breed: Spitz

Age: 6 year

Sex: Female

Weight: 30 kg

Anamnesis: owner reported for pregnancy diagnosis.

Observation: Ballottment test fetal-mass present

Confirmatory Diagnosis: Ultrasonography → +ve (pregnant)

Table-8: Male, female diseased percentage

Sex	Affected no	Affected %
Male	30	75
female	10	25
Total	40	100

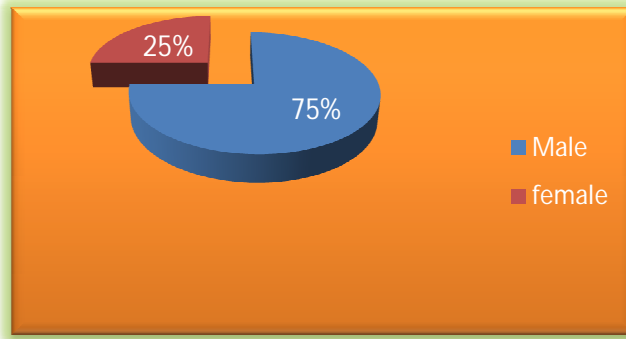


Figure-12: Male, female diseased percentage

About 40 cases observed in madras veterinary college. Among these 30(75%) male dogs and 10(25%) female dogs are affected with disease or deformed. So male are more susceptible than female.

Table-9: Number of Patients in every units of MVC

Units	Number of Patients	Percentage(%)
Small Animal Dermatology	11	27.5
Small Animal Medicine Unit	12	30
Small animal In Patient Unit	3	7.5
Small animal surgery	4	10
Small Animal Immunization	4	10
Small animal Orthopedics	3	7.5
Small animal Obstetrics & Gynaecology	3	7.5
Total	40	100

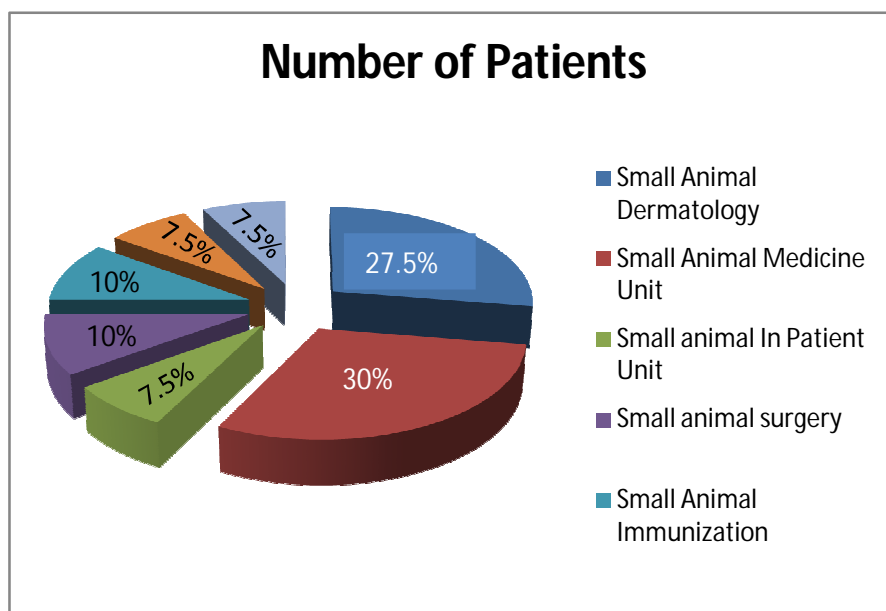


Figure-13: Percentage of patients in different units

The above figure shows that the cases found in small animal medicine unit(30%) is higher than any other unit. Sequentially the cases of small animal dermatology, in patient, immunization, orthopaedics and obstetrics & gynaecology unit are 27.5%, 7.5%, 10%, 10%, 7.5%, 7.5% respectively.

Table-10: Percentage of diseased animal in different age at MVC

Age group	Number of animal	Percentage(%)
Puppy(1day-12month)	18	45
Adult(12month-5year)	13	32.5
Old(5year-rest)	9	22.5
total	40	100

Above data shows that puppies are more prone to disease (45%) than adult (32.5%) and older (22.5%) animal.

Table-11: Percentage of diseased animal in different breed at MVC

Breed	No of affected animal	Percentage(%)
Labrador	12	30
Spitz	10	25
others	18	45
total	40	100

Labrador (30%) and spitz (25%) breeds are more susceptible to disease than others. Only Labrador and spitz complete about 55% of total affected/diseased animal.

Chapter-5

CONCLUSION

In madras veterinary college males (75%) are more affected to disease than females (25%). Puppies are more prone to disease (45%) than adult (32.5%) and older (22.5%) animal. Labrador (30%) and spitz (25%) breeds are more susceptible to disease than others. Most of the cases treatment was given through confirmatory diagnosis in the laboratory. Ivermectin is mostly used for tick infestation, cyclosporine for atopic dermatitis, antibiotic ointment for bacterial pyoderma, shampoo composed of benzyl peroxide, tar, selenium sulfoxide, ketokonazole for malassezia, lactate ringers solution, vomidone, metronidazole for parvo virus infection, frusemide, digoxin for congestive heart failure, berenil for babesia, combination of fenbendazole & praziquantal or combination of pyrantal pomet, praziquantal & fenbendazole for deworming, meloxicam for pain killer. India has a wide range of climatic zones, from montane (cold, wet alpine) and semi-arid regions to the wet tropics, which make it suitable for a diverse range of vectors and pathogens of medical and veterinary importance, whose transmission and geographical distribution are closely linked to regional temperature, rainfall and humidity. So it is needed to patient owner more conscious about the disease because prevention is better than cure.

Chapter-6

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