Prevalence of different diseases, disease conditions and therapeutic options in domestic animals at Upazila Veterinary Hospital and Livestock office, Sadar, Noakhali.

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Session : 2015-2016

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Abstract

The economy of Noakhali district is predominantly agricultural which is suitable for livestock production. A large number of domestic animals of different species usually visit Sadar Upazila Veterinary Hospital (SUVH) every day from different areas for treatment of sick animals and other veterinary health services. Therefore, to know the prevalence of diseases and therapeutic options usually provides, a study was conducted using clinical data of all the cases that came to SUVH, Noakhali during December 2020 to March 2021. The data was collected from paper-based record keeping system of SUVH. Based on history, general physical examination, special physical examination, laboratory diagnosis the presumptive or confirmatory diagnosis was performed and treatment was given. A total 807 number of cases came from 17 different areas. The highest number came from Noakhali Pourosobha 43.5% followed by Ewazbalia 17.5% and Ashwadia 9.2% where goat 46%, cow 35%, calf 10%, buffalo 4%, bull 3%, cat 0.37%, dog 1%, sheep 1%. A total 59 types of diseases and disease conditions were recorded. Among them specific diseases were 20.32%, non-specific diarrhoea 14.75%, other digestive disorders 6.44%, skin disorders 6.82%, respiratory tract infections 3.71%, urogenital disorders 3.10%, poisoning 0.25%, surgical cases 8.18%, others 35.8%. For the treatment, antibiotics 29.86%, antihistaminic 28.13%, anthelmintics 30.48%, NSAID 33.09%, fluid therapy 19.83%, ectoparasiticide 13.26%, multivitamin 42.01%, others 26.39% were used. Highest used antibiotic was sulfadimidine 16.60% followed by penicillin 14.52%, ceftriaxone 12.86%, metronidazole 10.37% and other types of antibiotics 45.65%. In 246 cases anthelmintic drugs were used in which fenbendazole 39.0% used in highest percentage followed by oxyclozanide 38.6% and others. Highest used antihistaminic and NSAID was pheniramine maleate 72.2% and paracetamol 30.7%, respectively. Commonly used ectoparasiticide was trichlorphon 47%.

Keywords: Diseases, Prevalence, Treatment, Domestic animals

Chapter 1: Introduction

Noakhali Sadar Upazila is the district town of Noakhali. It has a total area of 129.75 Sq. miles (336.06 square kilometres). It has total 13 Unions. It has Kabirhat Upazila to the east, Lakshmipur District to the west, Begumganj Upazila to the north and Subarnachar Upazila to the south. The southwestern part of the area forms some part of Meghna estuary. The type of the land of Noakhali is extensive flat, coastal and delta land because of the Meghna river. The area is influenced by diurnal tidal cycle which fluctuates according to seasons. Because of tidal surges the area is prone to flood, cyclone and waterlogging commonly. The river current carry fertile slit which accumulates at the coast and form new "*Char land*".

Most of the people of this Upazila is actively or passively dependent on agriculture. Around 49.15% of main source of income of people comes from the agriculture (Noakhali Sadar Upazila - Banglapedia, 2021).The area is suitable for rearing different livestock population like Cattle, buffalo, sheep, goat and other domestic animals. The upazila consists of many commercial dairy and poultry farms. Besides this people rear small number of livestock at backyard system. Almost all the family specially in rural areas have at least one to two goats or cattle in their house.

Sadar Upazila veterinary Hospital (SUVH), Noakhali is the place where people usually visit with their animals suffering from various diseases and disease conditions. Not only the people of this upazila but also people came here from the other upazila of the district.

In Sadar, Noakhali animals suffer from various diseases because of many factors. It has a large number of char lands where green grass are very rare and available grass have low nutritious value. So animals suffer from various condition related to nutrition. Malnutrition, poor production and poor reproductive performance is commonly seen here. As the area is located near Meghna River the salinity of the water high. Therefore the salinity of the soil is also high. So that the animals suffer from various digestive disorder. Other causes of sickness in animals are poor hygiene, Poor housing, exposure to many infectious agents, exposure of parasites, inadequate vaccination and deworming status etc. When the cases come to SUVH, Noakhali data related to the

cases are recorded to identify the prevalence of different diseases and disease conditions, area based distribution of diseases with the aim of effective disease control program and betterment of animal populations as well as promoting public health.

Objectives:

1. To identify different categories of diseases and disease conditions of different species of domestic animals available at Noakhali sadar upazila.
2. To identify prevalence of different diseases and diseases conditions according to the area of the upazila, species and breeds of animals.
3. To identify different types and amounts of drugs used to treat the sick animals at SUVH, Noakhali.

Chapter 2: Materials and Methods

The study was undertaken at Upazila veterinary hospital and livestock office, Sadar, Noakhali. The data of different clinical diseases and disorders were collected from the record keeping book of SUVH, Noakhali. The duration of study was from December 2020 to March 2021. All the cases that came to SUVH with different diseases during this period were recorded at the record book. The record was taken based on history, general physical examination, clinical sign and some common laboratory examinations along with treatment. A total of 807 cases were recorded during the study. After taking the information from record book the data was further analyzed with Microsoft Excel 2016.

From the analysis the percentage of animal population affected by various diseases based on total population and species along with the percentages of different drugs used on the selected population were determined.

History:

Information related to the animals which help to diagnose diseases were taken from the owners. Duration of illness, type of illness, feeding habit of the animals, housing condition, hygienic condition of the place where the animal were kept, total number of animals, mortality and other information were taken.

Distant inspection:

When a patient came to the SUVH an initial examination was done. By this examination general appearance and activities such as temperament, dullness, posture, gait, eating, defecation, urination, respiratory character (type, depth), body condition, wound, lesions, visual body abnormality, sound produced by the animal (grunting, snoring, coughing) from a distance (5 feet) without handling or disturbing the animal etc were observed by this examination. The animals were examined at both standing and sitting condition.

General physical examination:

After distant inspection some general physical examination were done which is called close inspection by careful observation, direct or indirect auscultation, palpation, percussion methods. By auscultation normal or abnormal type of sound of lung, air passage, rumen etc. are identified. By palpation the size, shape, consistency of different organs, pulse, pain response were identified.

Special physical examination:

Some special physical examinations were done to test specific organ or specific region of the animals .Test of expired air, test for respiratory rate, test of cough, breathing inhibition test, bleeding time clotting time, test for rumen motility, appetite test, back grip test, test for hepatomegaly and splenomegaly, test for ascites, skin fold test, test for blindness (menace reflex), test for patency of nasolacrimal duct, probing, deafness test, test of odour, spinal reflexes test(patellar reflex, anal reflex), paracentesis etc. are the tests used in special physical examinations.

Laboratory diagnosis:

At SUVH, Noakhali the laboratory diagnosis is very rare because of lack of proper diagnostic facilities such as chemicals, reagents, instruments etc. Some skin scraping test, microscopic examination of feces are commonly done as laboratory diagnosis. By the microscopic examination of feces egg of parasites, oocyst are commonly identified. By skin scraping test the presence of mite, fungus etc are identified under microscope.

Chapter 3: Results

Clinical data of about 807 cases during the study period were recorded at record book. Then the data were input into Microsoft excel 2016. After analysis the data of 807 animals these results are found. Among 807 cases 43.5%, 17.5%, 9.3%, 9.2%, 3.6%, 2.7%, 2.5%, 2.4%, 2.0%, 1.5%, 1.2%, 1.0%, 0.7%, 0.2%, 0.2% animals came from Noakhali Pourosobha, Ewazbalia, Dharmapur, Ashwadia, Noakhali Mouja, Binodpur, Motipur, Kadir Hanif, Noannoi, Char matua, Anderchar, Dhanshiri, Kaladorup, Niazpur, Dadpur union of Sadar upazila respectively and 1.5% from Kabirhat upazila and 1.0% from Subarnachar upazila. **(Table 1).**

Table 1: Area wise distribution of cases those came to SUVH for treatment along with the number of animals and prevalence% of cases on respective areas.

Address (union/upazila/area)	Number of affected animals (cases)	Area wise prevalence % of animals (cases)
Anderchar	10	1.2%
Ashwadia	74	9.2%
Binodpur	22	2.7%
Char Matua	12	1.5%
Dadpur	2	0.2%
Dhanshiri	8	1.0%
Dharmapur	75	9.3%
Ewazbalia	141	17.5%
Kabirhat	12	1.5%
kadir Hanif	19	2.4%
kaladorup	6	0.7%
Motipur	20	2.5%
Niazpur	2	0.2%
Noakhali mouja	29	3.6%
Noakhali pourosobha	351	43.5%
Noannoi	16	2.0%
Subornochor	8	1.0%
Total :	807	100.0%

According to species among 807 animals Buffalo (n=29) 4% bull(n=27)3% calf (n=80)10% cat(n=3)0.37% cow (n=284)35% dog(n=5)1% goat(n=372)46% sheep(n=7)1% were found. **(Table 2).**

Table 2: Distribution of cases according to species with percentages.

Species	Number of affected animals	Percentages
Buffalo	29	4%
Bull	27	3%
Calf	80	10%
Cat	3	0.37%
Cow	284	35%
Dog	5	1%
Goat	372	46%
Sheep	7	1%
Total	807	100%

In (**Table 3)** about 59 types of diseases and disease conditions are identified on the study which were divided into many groups. Those were specific diseases 20.32%, diarrhoea 14.75%, other digestive disorder 6.44%, disease related to skin 6.82%, disease related to respiratory system 3.71%, disease related to urogenital system 3.10%, poisoning 0.25%, surgical cases 8.18%, others 35.8%. The prevalence of FMD was 5.08% (n=41), PPR 5.08% (n=41), BQ 0.25% (n=20), dog bites 2.97% (n=24), ephemeral fever 3.22% (n=26), FOD 0.12% (n=1), lumpy skin disease 0.87% (n=7), mastitis 23% (n=18) and tetanus 0.50% (n=4). Among 807 cases non descriptive diarrhea 1.98% (n=16), bacterial diarrhoea 2.1 (n=17), parasitic diarrhoea 7.68% (n=62), protozoal diarrhoea 2.97% (n=24) in total 14.75% diarrhoeal cases. Other conditions related to digestive systems were acidosis 1.37% (n=11), bloat 2.35% (n=19), calf scour 0.25% (n=2), colic 0.37% (n=3), simple indigestion 2.11% (n=17). (total 6.44%). Conditions related to skin were allergy 0.25% (n=2), dermatitis 0.62% (n=5), flea allergy dermatitis 0.50% (n=4), hump sore 0.12% (n=1), lice infestation 0.37% (n=3), mite infestation 1.12% (n=9), papillomatosis 0.25% (n=2), tick infestation 3.59% (n=29). Disease related to respiratory systems were common cold 0.12% (n=1), pneumonia 2.97% (n=24), simple cough 0.62% (n=5). Disease related to urogenital system were excess libido 0.12% (n=1), metritis 0.62% (n=5), pyometra 0.12% (n=1), repeat breeding syndrome 0.62% (n=5), retention of placenta 0.25% (n=2), urolithiasis 0.50% (n=4), anestrus 0.87% (n=7) .Poisoning cases were urea poisoning 0.12% (n=1), plant poisoning 0.12% (n=1). Among 807 cases the prevalence of surgical cases were 8.18% (n=66) which includes abortion 0.37% (n=3), abscess 0.25% (n=2), castration 5.95% (n=48), dermoid cyst 0.12% (n=1), dystocia 0.12% (n=1), fracture 0.37% (n=3), overgrown hoof 0.125 (n=1), umbilical hernia 0.12% (n=1), umbilical abscess 0.12% (n=1), uterine prolapse 0.37% (n=3). Other disease conditions were regular deworming 20.45% (n=165), vaccination 0.12% (n=1), fascioliosis 0.74% (n=6).wound 2.85% (n=23%), malnutrition 6.82% (n=55), metabolic disease 3.84% (n=31), naval ill 0.74% (n=6), congenital abnormalities 0.37% (n=3) and arthritis 0.12% (n=1)

Table 3: Prevalence of different diseases and disease conditions in domestic animals according to disease category and name of diseases and conditions

Diseases and disease conditions under different groups	Diseases and disease conditions	No. of cases	Prevalence %	Total %
Specific diseases	BQ	2	0.25%	20.32%
	Dog bites	24	2.97%	
	BEF	26	3.22%	
	FMD	41	5.08%	
	FOD	1	0.12%	
	Lumpy Skin Disease	7	0.87%	
	Mastitis	18	2.23%	
	PPR	41	5.08%	
	Tetanus	4	0.50%	
Diarrhoea	Non discriptive diarrhoea	16	1.98%	14.75%
	Bacterial diarrhoea	17	2.11%	
	Parasitic diarrhoea	62	7.68%	
	Protozoal diarrhoea	24	2.97%	
Other digestive disorders	Acidosis	11	1.36%	6.44%
	Bloat	19	2.35%	
	Calf scour	2	0.25%	
	Colic	3	0.37%	
	Simple indigestion	17	2.11%	
Disease related to skin	Allergy	2	0.25%	6.82%
	Dermatitis	5	0.62%	
	Flea allergic dermatitis	4	0.50%	
	Hump Sore	1	0.12%	
	Lice infestation	3	0.37%	
	Mite infestation	9	1.12%	
	Papillomatosis	2	0.25%	
	Tick infestation	29	3.59%	
Disease related to Respiratory system	Common cold	1	0.12%	3.71%
	Pneumonia	24	2.97%	
	Simple Cough	5	0.62%	
	Excess libido	1	0.12%	
	Metritis	5	0.62%	

Disease related to Urogenital system	Pyometra	1	0.12%	
	Repeat Breeding syndrome	5	0.62%	3.10%
	Retention of placenta	2	0.25%	
	Urolithiasis	4	0.50%	
	Anestrus	7	0.87%	
Poisoning	Plant poisoning	1	0.12%	
	Urea poisoning	1	0.12%	0.25%
Surgical Cases	Abortion	3	0.37%	
	Abscess	2	0.25%	
	Castration	48	5.95%	
	Dermoid cyst	1	0.12%	
	Dystocia	1	0.12%	
	Fracture	3	0.37%	8.18%
	Maggot wound	2	0.25%	
	Overgrown hoof	1	0.12%	
	Umbilical abscess	1	0.12%	
	Umbilical Hernia	1	0.12%	
	Uterine Prolapse	3	0.37%	
Others	Arthritis	1	0.12%	
	Congenital anomalies	3	0.37%	
	Conjunctivits	3	0.37%	
	Fascioliosis	6	0.74%	
	Malnutrition	55	6.82%	35.8%
	Metabolic disease	31	3.84%	
	Naval ill	6	0.74%	
	Regular Deworming	165	20.45%	
	Vaccination	1	0.12%	
	Wound	23	2.85%	
	Grand Total	**807**	100.00%	

FMD: Foot and Mouth Disease; FOD: Fibrous osteodystrophy; BQ: Black quarter; PPR: Peste des petits ruminants; BEF: Bovine ephemeral fever.

In cases of FMD, LSD, ephemeral fever, mastitis (cow), BQ, dog bites, tetanus 21 (51.21%), 4(57.14%), 16 (64%), 4 (40%), 2 (100%), 4 (80%), 1(100%) were from local breeds and 20 (48.78%), 3(47.86%), 9 (36%), 6 (60%) 0 (0%), 1 (20%), 0 (0%) were from HF Cross breeds respectively. In case of mastitis, PPR, in goat 2 (25%),13 (31.7%), were from local breeds, 2 (25%),14 (34.14%) were Black Bengal goat, 4 (50%),11 (26.8%) from Jamunapari and 31 % PPR from Totamukhi breed. tetanus, FOD were found 100% at local goat. In case of cattle diarrhea, other digestive disorders, disease related to skin, disease related to respiratory system, disease related to uro-genital system, poisoning, surgical cases, others were 41 (61%), 15 (58%), 18 (78%), 5 (83%), 7 (70%), 0 (0%), 2 (22%), 124 (79%) in Local breed of cattle and 32 (69%) , 11 (42%), 5 (22%), 1 (17%), 3 (30%), 0 (0%), 7 (78%), 33 (21%) were in HF cross breed respectively. Among all the cases of goat diarrhea, other digestive disorders, disease related to skin, disease related to respiratory system, disease related to urogenital system, poisoning, surgical cases, others were 22 (52%), 9 (38%), 8 (67%), 10 (43%), 6 (40%), 0 (0%), 11 (19%), 38 (37%) in Local breed of goat, 16 (38%), 6 (25%), 0 (0%), 2 (9%), 3 (20%), 0 (0%), 25 (44%), 35 (34%) were in Black Bengal goat, 2 (5%), 8 (33%), 4 (33%), 6 (26%), 4 (27%), 1 (100%), 18 (32%), 25 (24%) were in Jamunapari goat and 2(5%), 1 (4%), 0 (0%), 5 (22%), 2 (13%), 0 (0%), 3 (5%), 5 (5%) were in Totamukhi breed of goat respectively **(Table 4)**

Table 4: Prevalence of some specific diseases and disease conditions according to the breeds of Cattle and goats.

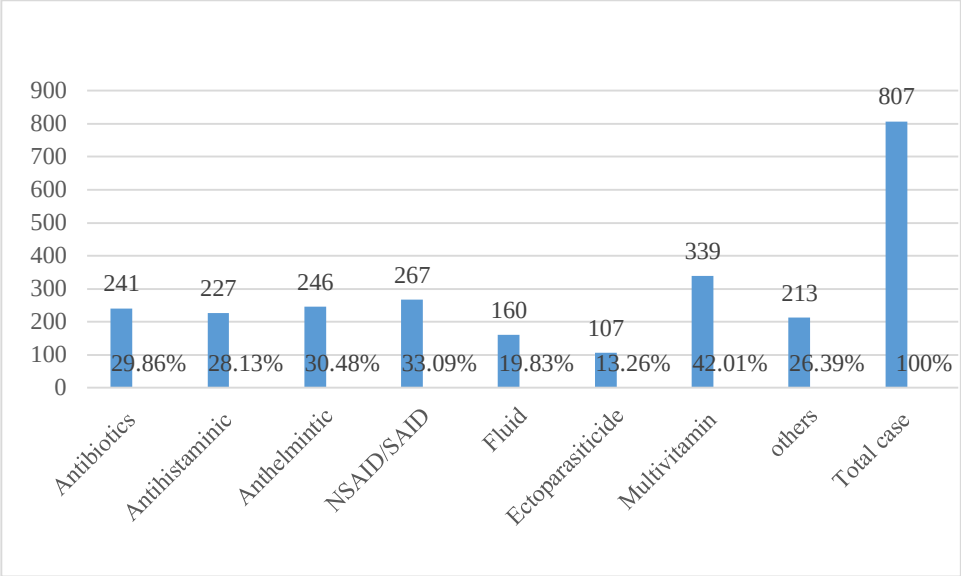
Diseases and disease conditions under different groups	No. of cases (n) , prevalence %					
	cattle		Goat			
	Local	HF cross	Local	Black Bengal	Jamunapari	Totamukhi
FMD	21 (51.21%)	1 (48.78%)				
Lumpy Skin Disease	4 (57.14%)	3 (43.86%)				
BEF	16 (64%)	9 (36%)				
BQ	2 (100%)	0 (0%)				
Mastitis	4 (40%)	6 (60%)	2 (25%)	2 (25%)	4 (50%)	0 (0%)

Dog bites	4 (80%)	1 (20%)	13 (72%)	2 (11%)	3 (17%)	0 (0%)
Tetanus	1 (100%)	0 (0%)	3 (100%)	0 (0%)	0 (0%)	0 (0%)
PPR			13 (32%)	14 (34%)	11 (27%)	3 (7%)
FOD			1 (100%)	0 (0%)	0 (0%)	0 (0%)
Diarrhoea	41 (61%)	32 (69%)	22 (52%)	16 (38%)	2 (5%)	2 (5%)
Other digestive disorders	15 (58%)	11 (42%)	9 (38%)	6 (25%)	8 (33%)	1 (4%)
Disease related to skin	18 (78%)	5 (22%)	8 (67%)	0 (0%)	4 (33%)	0 (0%)
Disease related to Respiratory system	5 (83%)	1 (17%)	10 (43%)	2 (9%)	6 (26%)	5 (22%)
Disease related to Urogenital system	7 (70%)	3 (30%)	6 (40%)	3 (20%)	4 (27%)	2 (13%)
poisoning	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (100%)	0 (0%)
Surgical Cases	2 (22%)	7 (78%)	11 (19%)	25 (44%)	18 (32%)	3 (5%)
Others	124 (79%)	33 (21%)	38 (37%)	35 (34%)	25 (24%)	5 (5%)

FMD: Foot and Mouth Disease; FOD: Fibrous osteodystrophy; BQ: Black quarter; PPR: Peste des petits ruminants; BEF: Bovine ephemeral fever.

In total 807 cases antibiotics (n=241)29.86%, antihistaminic (n=227) 28.13%, anthelmintic (n=246) 30.48%, NSAID/SAID (n=267) 33.09%, fluid (n=160) 19.83%, ectoparasiticide (n=107)13.26%, multivitamin (n=339)42.01%, others (n=213) 26.39% were used **(Figure 1)**

Figure 1: Percentage of different types of drugs used in SUVH, Noakhali



Among 807 cases different types antibiotics are used in total 241 cases in which sulfadimidine 16.60% (n=40), penicillin 14.52% (n=35), ceftriaxone 12.86% (n=31), metronidazole 10.37%(n=25), sulfadiazine(topical) 9.96% (n=24), sulfadiazine + trimethoprim 7.05% (n=17), oxy tetracycline 4.98% (n=12), marbofloxacin 4.56% (n=11), ciprofloxacin+ metronidazole 4.15%(n=10), amoxicillin 4.15%(n=10), tetracycline +neomycin+ bacitracin+ prednisolone+ bacitracin+ prednisolone 2.07% (n=5), penicillin+ streptomycin 2.07% (n=5), tetracycline+ neomycin+ bacitracin+ prednisolone 1.66% (n=4), penicillin+ streptomycin+ sulfanilamide 1.66% (n=4), ciprofloxacin 1.66% (n=4), ampicillin 0.83% (n=2), ampicillin+ metronidazole 0.41% (n=1), ciprofloxacin 1% eye drop 0.41% (n=1) **(Table 5).**

Table 5: Percentage of different antibiotics used at SUVH, Noakhali for treatment.

Name of drugs used	Number of diseased animals	Total	Percentages
Ampicillin+ metronidazole	1		0.41%
Amoxicillin	10		4.15%
Ampicillin	2		0.83%
Ceftriaxone	31		12.86%
Ciprofloxacin	4		1.66%
ciprofloxacin 1% eye drop	1		0.41%
Ciprofloxacin+ Metronidazole	10		4.15%
Marbofloxacin	11		4.56%
Metronidazole	25		10.37%
Oxy tetracycline	12		4.98%
Penicillin	35	241	14.52%
Penicillin+ Streptomycin	5		2.07%
Penicillin+ Streptomycin+ sulfanilamide	4		1.66%
Sulfadiazine (topical)	24		9.96%
Sulfadiazine+ Trimethoprim	17		7.05%
Sulfadimidine	40		16.60%
Tetracycline+ neomycin+ bacitracin+ prednisolone	4		1.66%
Tetracycline+ neomycin+ bacitracin+ prednisolone+ bacitracin+ prednisolone	5		2.07%
Antibiotics not used.		566	
Total No. of cases		**807**	

In 246 cases antiparasitic drugs were used in which oxyclozanide 38.6%, fenbendazole 39.0%, levamisole+ trichlabendazole 10.2%, albendazole 8.9%, nitroxinil 2.8%, trichlabendazole 0.4% were found **(Table 6).**

Table 6: Name of different anthelmintic drugs used in different percentage of cases at SUVH, Noakhali.

Name of anthelmintic drugs	No. of cases	Drug used in total	Percentages in total used
Albendazole	22		8.9%
Fenbendazole	96		39.0%
Levamisole+ trichlabendazole	25	246	10.2%
Nitroxinil	7		2.8%
Oxyclozanide	95		38.6%
Trichlabendazole	1		0.4%
Antiparasitics not used		561	
Total Number of cases		**807**	

In 227 cases of total 807 cases antihistaminic drugs were used in which chlorpheniramine maleate, pheniramine maleate and promethazine hydrochloride were used in 1.3% (n=3), 72.2% (n=164), 26.4% (n=60) respectively (**Table 7).**

Table 7: Different antihistaminic with percentage of used.

Name of drugs	No. of cases	Drug used in total (cases)	Percentage in total used
Chlorpheniramine maleate	3		1.3%
Pheniramine maleate	164		72.2%
Promethazine Hydrochloride	60	227	26.4%
Antihistaminic not used		580	
Grand Total		807	

Different types of NSAID/ SAID were used in 267 cases. Dexamethasone, flunixin meglumine, ketoprofen, meloxicam, paracetamol, tolfenamic acid, tolfenamic acid+ paracetamol were found using in 3.4% (n=9), 7.1% (n=19) 10.5% (n=28), 23.6% (n=63), 30.7% (n=82), 24.3% (n=65), 0.4% (n=1) respectively **(Table 8).**

Table 8: Represents the name of different NSAID/SAID with percentage of use**.**

Name of different NSAID/SAID	Number of cases	Percentages in total used
Dexamethasone	9	3.4%
Flunixin meglumine	19	7.1%
Ketoprofen	28	10.5%
Meloxicam	63	23.6%
Paracetamol	82	30.7%
Tolfenamic acid	65	24.3%
Tolfenamic acid+ paracetamol	1	0.4%
NSAID/SAID not used	540	
Grand Total	**807**	

Among 807 cases ectoparasiticides were used in 107 cases among which cypermethrin, fly repellent: trichlorphon, ivermectin, ivermectin+ fly repellent: trichlorphon, metriphonate were used in 21%, 47%, 28%, 2%, 2%, 3% respectively **(Table 9).**

Table 9: Represents the percentage of different ectoparasiticides used in the study.

Name of drugs	Used in total cases	percentages
Cypermethrin	22	21%
Fly repellent: trichlorphon	50	47%
Ivermectin	30	28%
Ivermectin+ Fly repellent: trichlorphon	2	2%
Metriphonate	3	3%
Drugs used	107	100%

Fluid therapy**,** multivitamins and multiminerals were given in 20% (n= 160), 42% (n=339) of total animals on the study. Other supportive drugs we as given in 28% (n=223) of total cases which includes povidon iodine (n=38) 17.0%, chalk and kaolin (n=50) 22.4%, semithicone (n=62) 27.8%, rabies vaccine (post exposure) (n=23) 10.3% of 223 cases.

(Table 10, 11, 12)

Table 10: Percentage of fluid therapy used

Fluid therapy	No of cases
Fluid therapy used	160
Fluid not used	647
Fluid therapy used in %	20%

Table 11: Percentage of multivitamins and multiminerals used among all the cases.

Name of drugs	No of cases	Percentage
Multiminerals	5	
Multivitamins	159	
Multivitamins and amino acid	6	
Multivitamins+ multiminerals	169	**42%**
total used	339	
Total no. of cases	807	

Table 12: Represents other different drugs used as main or supportive therapy in different percentages.

Drugs	Number of cases	Percentages of used.
Ammonium chloride	4	1.8%
Amprolium	7	3.1%
Anthiomalin+ auto hemo therapy	2	0.9%
Apthocare, povidon iodin	1	0.4%
Atropin sulphate	3	1.3%
Chalk and Kaolin	50	22.4%
Chalk and Kaolin, semithicone	5	2.2%
Copper sulphate	1	0.4%
Diazepam + ATS	1	0.4%
Diazepam+ TT vax	3	1.3%
Flatunil	1	0.4%
Montelucast	1	0.4%
Oxytocin	2	0.9%
povidon iodine	39	17.4%
Povidon iodine, rabies vaccine(post exposure)	23	10.3%
Rabies vaccine pre exposure for cat	1	0.4%
Semithicone	64	28.7%
Sodium bi carbonate	6	2.7%
Sodium bi carbonate+ semithicone	5	2.2%
Tranexamic acid	4	1.8%
Drugs not used	584	
Grand Total	**807**	100.0%

Chapter 4: Discussion

According to the study the highest number of cases came from Noakhali pourosobha 43.5% followed by Ewazbalia 17.5% and Ashwadia 9.2%.The variation of diseases prevalence at those area may be due to the poor management system of rearing animals, poor hygienic condition of the farms, larger area compared to the other areas of Noakhali where animal populations were also larger. As a result the occurrence of diseases were higher in those area. (Rahman et al., 2021), (Rahman et al., 2020). Among 807 cases 46% case was goat which was the highest and 35% was cow followed by the other species. People find rearing of goat easier and economic because goats are well adapted to variety of environment and food, require less space, easy management, better reproductive performance and productivity (Sila et al., 2021), (Hassan et al., 2007).Though goats are resistant to many diseases, some diseases and conditions occur commonly in goat (Brady, 2021) therefore the number of sick goat was found high in the study. According to the study many specific diseases were identified among those the prevalence of FMD is 5.08% which is lower than previously recorded prevalence 14.44% and 38.62% according to (Alam et al., 2018) and (Lucky et al., 2016) respectively. The variation may be due to the improved biosecurity system of the farm, controlled animal movement and proper vaccination at Noakhali region then the other parts of the country. In case of PPR the prevalence is 5.08% which is lower than other previous recorded prevalence 27.78% according to (Rahman et al., 2016) and 12.30% according to (Alam et al., 2018). It is may be due to proper vaccination, immune condition of the goat population and lack of sophisticated diagnosis of PPR. The prevalence of PPR was recorded 34.14% in Black Bengal goat, 26.8% in Janumapari goat, 7.3% in Totamukhi and 31.7% in local breeds. It reveals that Black Bengal goat is more susceptible to PPR than other breeds which is similar to the report according to (Sarker and Islam, 2011).

According to this study the prevalence of Bovine Ephemeral fever was 3.22% which is lower than other recorded value of Bovine Ephemeral Fever at Taiwan 13.6% by (Liao et al., 1998). It may due to the geographic location of Bangladesh, the study period, Season when the study was held on and less availability of arthropod vectors which is important in transmission of that disease.

From the study the prevalence of LSD was calculated 0.78% which is quite a good news for farmers. The prevalence was low because most of the cattle were vaccinated and some animal acquired immunity after recovering from clinically affected LSD. The prevalence of overall mastitis was 2.23% which support the findings of (Karim et al., 2014) 2.6%.

In the study the total prevalence of parasitic diseases were 8.42% (fascioliosis and parasitic diarrhoea). According to the report of (Alim et al., 2009) the prevalence of trematodes and nematodes at Noakhali sadar upazila was 23.14% and 25.93% respectively which is quite high than this study. In this study the percentage of regular deworming of animals was 20.45% which may be the cause of less parasitic diseases in animals. The number of surgical cases was very low 8.18% due to lack of facilities at UVH.

In the study period the use of antibiotics was 29.86%, antihistaminic 28.13%, anthelmintics 30.48%, NSAID/SAID 33.09%, fluid 19.83%, ectoparasiticide13.26%, multivitamin 42.01% and others 26.39% which was more or less similar with the finding of (Uddin et al., 2021) in which 40.50% antimicrobials, 23.59% anthelmintics, and 35.91% other drugs was recorded. At SUVH, Noakhali sulfadimidine16.60%, ceftriaxone 12.86% penicillin14.52%, penicillin+ streptomycin 2.07%, metronidazole 10.37%, oxytetracycline 4.98%, fly repellent: trichlorphon 47%, ivermectin 28% was used.It is more or less similar with the finding of (Uddin et al., 2021) where oxytetracycline (26.54%), streptomycin-penicillin mixed combination (27.20%) and cephalosporin (13.11%) and anthelmintic: ivermectin (22.5%) .

Limitations

The study was conducted at SUVH, Noakhali where patients came from various areas of Noakhali. Sometimes it was not possible for the owners to bring their animals from remote areas. So some information were missing in many cases. The record keeping system at SUVH is very basic so that all the information were not recorded at record book that made the analysis of the study more challenging.

The actual prevalence of particular diseases couldn't be identified because of many reasons. SUVH couldn't cover all the patients of the upazila therefore the actual number of diseased population couldn't be identified. The diagnosis was presumptive most of the time based on history, clinical sign and rarely laboratory diagnosis. So some miss diagnosis could have happened which might affected the findings of the study.

Conclusion:

The study was performed to determine different types of disease and disease conditions on different species of animals available at Noakhali sadar. It explored the prevalence of many diseases and conditions according to the area of Noakhali sadar, according to species, breeds, along with the percentage of different drugs used to treat those cases. It will assist other scientist and field practitioners to acquire some ideas about prevalence of diseases at Noakhali region, the pattern of using antibiotics and other drugs which will be helpful for future investigation and potential therapeutic options as well.

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