

Quarterly Report on Infectious Diseases in Southern Punjab (Bahawalpur) of Pakistan

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Abstract

Outdoor clinic of animals situated in Cholistan University of Veterinary and Animal Sciences was selected for analysis of emerging diseases and their response to therapeutics. The case diagnosis was done on the basis of history, clinical signs, and hematological parameters while treatment was executed based on standard protocols of veterinary medicine practice. Descriptive statistics and t-test were applied to investigate data. The study found Blue tongue 4.48%, Contagious Ecthyma/ORF 14.99%. Bovine Ephemeral Fever 2.28%, Peste des Petits ruminants/PPR 21.73%, and Contagious Caprine pleuropneumonia 4.77% to be salient diseases diagnosed and treated.

Keywords: Contagious Ecthyma; Bluetongue; Bovine Ephemeral Fever; PPR

Introduction

Bahawalpur district is a part of South Punjab, located on Latitude 24.418068 and Longitude 71.670685. Bahawalpur is a house of important livestock breeds having 1327812 number of large ruminants and small ruminants are 1287689 [1]. Ruminants are the economic backbone of the small farmers in this area. Infectious diseases are the major threat to livestock industry as it inflicts loss of animals in terms of mortality as well as loss of production. This area has many viral and bacterial infectious diseases of ruminants including Peste des Petits ruminants, Foot and Mouth Disease, Hemorrhagic Septicemia, Blue Tongue, Bovine Ephemeral Fever, Mastitis, Contagious Caprine pleuropneumonia, and Black Quarter. By understanding the need of the hour, Cholistan University of Veterinary and Animal sciences was established in the Cholistan area for addressing the health challenges of the livestock population. A Veterinary Teaching Hospital is operational in the university which is providing diagnostic and treatment facilities and guiding the farmers and livestock owners towards animal health, disease prevention and proper management. A variety of animals are visiting University Teaching Hospital for various diseases and health issues. Current report is being presented to highlight the importance of area with respect to animal health issues.

Case Descriptions

The study comprised of quarterly data (September to November 2019) of clinical cases presented in year 2019 at Cholistan University of Veterinary and Animal Sciences, Bahawalpur. Inclusion criteria included those cases which qualified typical clinical signs, history,

and altered hematological parameters. The cases other than these were not included in this study. The blood samples were taken and processed for hematological parameters. The study area, district Bahawalpur belongs to Pakistan with scarcity of resources and poor managerial practices that results in re-emergence of diseases. The treatment was provided as per disease protocol keeping in view the guidelines of Radostits., *et al* [2]. Response was observed by frequent visits and phone calls. Standard protocols and procedures were followed throughout the treatment course.

Blue tongue

Description: Prevalence observed at clinic was 4.48%. A buck was presented with the history of fever, nasal discharge, ocular discharge and swelling of the face with lips and lameness from last four days. The clinical examination revealed the stomatitis, cyanosis of the tongue, conjunctivitis and coronitis (Figure 1b).

Treatment: following treatment regime was applied Enrofloxacin 7.5 mg/kg, Flunixin Meglumine 2.2 mg/kg, Pheniramine maleate 3 mg/kg, Vitamin B complex 50 mg/kg.

Response of treatment: The animal was given this treatment for five days and gradual recovery was noticed.

Contagious ecthyma/ORF

Description: Prevalence observed at clinic accounted for 14.99%. Animals of both species (caprine and ovine) were presented with the history of fever, swelling of lips, Anorexia and lesions at the lips, commissure of lips and on dental pads (Figure 1a).

Treatment: following treatment protocol was followed Procaine Penicillin 60000 IU/kg, Meloxicam 0.5 mg/kg, Pheniramine maleate 3 mg/kg, KMNO₄ solution for washing (1 gm/1litre of water), Polyfax (Polymyxin B sulphate + 500 IU of Bacitracin Zinc) ointment for local application on lesions

Response of treatment: The animal was given this treatment for five days. The gradual recovery was noticed.

Bovine ephemeral fever

Prevalence observed at clinic was 2.28%. Cattles were presented with the history of fluctuating fever, stringy nasal discharge, anorexia and lameness in hindlegs and shivering of thighs.

Treatment: Treatment included Procaine Penicillin 60000 IU/kg, Ketoprofen 2 mg/kg, Pheniramine maleate 3 mg/kg, B complex 50 mg/kg, Saline electuary 50 gm.

Response of treatment: The animal was given this treatment for three days and the gradual recovery was noticed.

Peste des petits ruminants/PPR

Description: Prevalence observed at clinic was 21.73%. Goats with the history of fever, anorexia, nasal discharge, diarrhea, coughing, lesions on the mucosa of tongue, lips and dental pads.

Treatment: Intensive treatment protocol was followed, Fluid therapy with Ringer lactate (according to the dehydration status of animal following the standard protocol), Enrofloxacin 7.5 mg/kg, Meloxicam 0.5 mg/kg, Pheniramine maleate 3 mg/kg, B Complex 50 mg/kg, KMNO₄ gargles (1 gm/liter of water), Glycerin for local application on lesions.

Response of treatment: The animal was given this treatment for five days and the gradual recovery was noticed.

Contagious caprine pleuropneumonia

Description: Prevalence observed at clinic was 4.77%. Sheep and goats were presented with coughing, nasal discharge and difficult breathing, frictional and crackling lung sounds.

Treatment: Following treatment was given Tylosin 17 mg/kg, Flunixin meglumine 2.2 mg/kg, Vitamin B complex 50 mg/kg, Saline electrolyte 25 gms/animal.

Response of treatment: The animal was given this treatment for five days and the gradual recovery was noticed.

Discussion

Blue tongue is arthropod born viral disease which affects sheep and wild ruminants, but it affects sheep the most [3]. Environment of Bahawalpur is hot and tropical which is well suited for insects growth and multiplication and resulting in dispersal of insect Born diseases

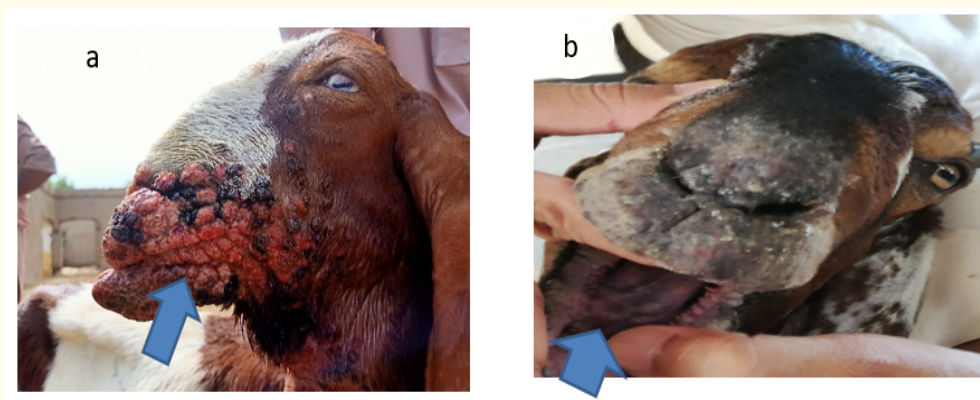


Figure 1: (a) Contagious ecthyma in goats. (Arrow indicates mouth lesions), (b) Bluetongue in goat (arrow shows blue color of tongue).

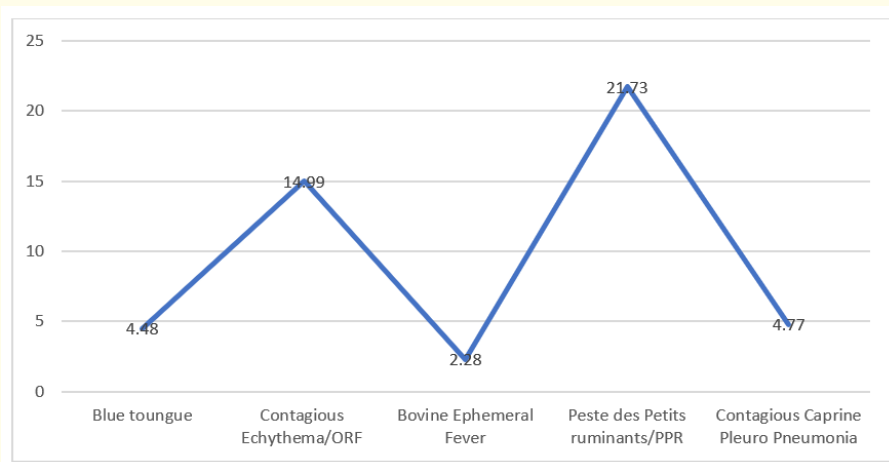


Figure 2: Comparison of prevalence (%) of different diseases among total cases presented in three months at veterinary teaching hospital.

Disease Name	Specie name	Parameter	Condition	Values	P-value
Blue tongue		WBC (1000/UL)	Healthy	9.83+ 1.40	0.016
			Diseased	13.4+1.04	
		RBC (106/UL)	Healthy	12.83+1.70	0.633
			Diseased	13.43+1.33	
		Platelets (100/ul)	Healthy	9.91+0.72	0.749
			Diseased	10.23+0.58	
PCV %	Healthy	34.46+0.43	0.004		
	Diseased	39.58+0.75			
Hbg/dL	Healthy	11.06+1.56	0.851		
	Diseased	11.43+2.75			
Contagious Ecthyma	Goat and sheep	WBC (/UL)	Healthy	8.36+1.42	0.003
			Diseased	15.86+1.35	
		RBC (106/UL)	Healthy	13.07+2.49	0.959
			Diseased	13.21+3.45	
		Platelets (100/ul)	Healthy	4.94+0.27	0.618
			Diseased	4.76+0.50	
PCV %	Healthy	33.70+1.11	0.032		
	Diseased	40.10+3.26			
Hb g/dL	Healthy	10.94+0.47	0.361		
	Diseased	10.61+0.64			
Bovine ephemeral fever	Bovine	WBC (/UL)	Healthy	10.21+0.72	0.001
			Diseased	14.13+3.24	
		RBC (106/UL)	Healthy	7.88+0.45	0.805
			Diseased	8.00+0.61	
		Platelets (100/ul)	Healthy	5.96+0.38	0.612
			Diseased	5.76+0.51	
PCV %	Healthy	35.26+1.41	0.034		
	Diseased	45.66+5.50			
Hb g/dL	Healthy	13.10+1.11	0.650		
	Diseased	13.40+0.70			
PPR	Goats	WBC (/UL)	Healthy	9.10+	0.001
			Diseased	15.59+	
		RBC (100/UL)	Healthy	13.09+0.43	0.708
			Diseased	12.82+1.08	
		Platelets (100/ul)	Healthy	5.66+0.30	0.468
			Diseased	5.33+0.65	
PCV %	Healthy	33.96+0.73	0.006		
	Diseased	41.43+2.28			
Hb g/dL	Healthy	10.71+0.40	0.644		
	Diseased	10.94+0.63			
CCPP	Goats	WBC (/UL)	Healthy	7.85+1.06	0.024
			Diseased	12.05+1.74	
		RBC (106/UL)	Healthy	14.16+0.25	0.209
			Diseased	13.92+0.11	
		Platelets (100/ul)	Healthy	10.63+0.33	0.359
			Diseased	10.33+0.29	
PCV %	Healthy	34.77+0.87	0.010		
	Diseased	41.87+2.48			
Hb g/dL	Healthy	12.57+0.47	0.358		
	Diseased	11.35+1.97			

Table 1: Hematological parameters in different cases.

like blue tongue [4]. Clinical signs of blue tongue are fever, nasal discharge, frothy salivation, discoloration of mucosa and laminitis [5]. Contagious ecthyma, Orf, Contagious pustular dermatitis, ecthyma contagious and scabby mouth disease are name of same disease. This disease has worldwide distribution and affects sheep, goat other wild animals of this category and human beings. It's a viral disease and virus enters in the body through abraded skin and replicates in epidermal cells. Infection appears and confines to oral cavity, eye lids, teats and coronary band and which can lead to secondary bacterial infection. This is underestimated disease so data about this disease is not available. This disease is endemic in Pakistan [6]. Like other two, Peste Des Petitis Ruminants or PPR is also an important and endemic disease of sheep and goats in Pakistan. Outbreaks of the PPR have been increased in recent years as compared to the past [7]. Prevalence of PPR according to previous reports is 40.98 %. The prevalence of the disease is more in northern and southern areas of Pakistan which is 30 to 60%. In western and south western areas of Pakistan, it is 10 to 30%. Outbreak of this disease has also been reported in wildlife breeding center Faisalabad, and similar outbreak was observed in goat herds in KPK [8]. Outbreak has also been observed in the wildlife life of Pakistan affecting the Sindh Ibex [8]. This disease is present in both sheep and goats but its severity is more in goats as compared to the sheep [9]. Female animals are at more risk as compared to male in this disease. Young animals are more susceptible to this disease. In these animals, morbidity and mortality is usually higher as compared to adult animals. This disease has reduced incidence in the rainy season due to ample amount of food and increased resistance to the disease. Larger flock size and more traveling of animal to contaminated area increases the chances of PPR [9].

Conclusion

The report has noticed emergence of typical cases of economic and health concern diseases in the area. This reflects presence of higher cases in field conditions as fewer livestock owners visit clinic due to distant localities in and around desert area. Presence of blue tongue, contagious ecthyma/ORF, Bovine Ephemeral Fever, and Peste des Petits/PPR, and contagious caprine pleuropneumonia calls for immediate measures to be taken.

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