Journal of Infection and Molecular Biology 2 (4): 49 – 52
http://dx.doi.org/10.14737/jimb.2307–5465/2.4.49.52

Short Communication

Prevalence of Common Diseases in Camels of Cholistan Desert, Pakistan

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ARTICLE HISTORY

Received: 2014–05–25
Revised: 2014–06–07
Accepted: 2014–06–08

Key Words: Prevalence, Camel, Cholistan, Bahawalpur

ABSTRACT

An epidemiological study was executed to determine the prevalence of common diseases in camels of Cholistan desert, Pakistan. Starting from Fort Abbas to Rahim Yar Khan, the survey was carried out from May 2010 to April 2011. Epidemiological data was collected from the camel herds of Cholistan (Locally called as Tobbas) and analyzed to interpret current scenario of camel diseases. The overall prevalence of all diseases in camels was 15.8%. The prevalence of trypanosomiasis, pneumonia, mange, and anthrax in camels was recorded as 5.39%, 5.49%, 3.14% and 1.80%, respectively. Considering this baseline information, strategic disease control measures should be develop to combat infectious, parasitic and miscellaneous diseases especially Surra, pneumonia, mange and anthrax.

ARTICLE CITATION: Ashraf S, Chaudhry HR, Chaudhry M, Iqbal Z, Ali M, Jamil T, Sial N, Shahzad MI, Basheer F, Akhter S, Hafeez Ur Rehman S, Yasin A (2014). Prevalence of common diseases in camels of Cholistan Desert, Pakistan. J. Inf. Mol. Biol.2 (4): 49 – 52.

Cholistan desert, covering an area of over 26,000 square kilometers, is located in Bahawalpur division, Southern–east part of Punjab province (Pakistan). (Figure No: 1) (Ali et al., 2009). Cholistan Desert can be divided into two geomorphic regions; the northern region is called Lesser Cholistan bordering canal-irrigated areas covering about 7,770 km^2 and the southern region is called Greater Cholistan and covers about 18,130 km^2 (Ashraf et al., 2013)

The dromedary camel (one-humped) is considered as one of the hardiest domesticated animals of the world. Camel is a very important source of transport, food products like meat, milk and also a good mean of livelihood for pastoralists in the deserts across the globe. Camels in the agricultural countries are making about 2% share towards the total milk production by provision of 798000 tonnes of milk per annum. The diseases cause considerable economic losses in terms of decline in working competence, growth and productivity of camels.

The existing population of camels in Pakistan is more than one million and constitutes about 5.1% of the 17.44 million global populations, which is increasing at the rate of 1.62% per year. (Anwar and Khan.1998). There are about 1,200,000 heads of dromedary camels in Pakistan with an annual increase of about 1.62%, making it at the third position in camel rearing countries in the world, while Cholistan having 7, 11,000 heads from total.

Under the deteriorating circumstances, the hardest hits are that the most precious assets of this area including the domestic animals, which may dry out if their exodus is not periodically arranged through distantly located canal colonies or bank of river Sutlej for the supply of fodder and water on the shortage of rains in the desert (Ali et al., 2009).

There are two main breeds of camels are found in Cholistan desert, mainly classified on the basis of their body characteristics, habitat and size. These are the two breeds of camels with distinct characteristics including Marrecha or Mahra (considered as dancing and riding camel) and other is Barella or milch breed, with heavy body. The specific intend of this current study is to identify common camel diseases of Cholistan in order to their Significance and also to suggest the control measures of the diseases in the light of economic importance.

The survey of camel diseases in lesser cholistan desert were carried out in lesser cholistan starting from Fort Abbas to Rahim Yar Khan. The survey area was divided into four distinct study sites. The data collection of this study is comprised 11294 camels presented to Veterinary Dispensaries and Veterinary Centers established by Cholistan Development Authority, Punjab, Pakistan in the Cholistan Desert during study period from May 2010 to April 2011. Sick animals were examined clinically for disease diagnosis. Samples were collected from sick camels, whenever needed, and taken to the microbiology laboratory, University College of Veterinary and Animal Sciences, The Islamia University of Bahawalpur, Pakistan for proper and confirmatory diagnosis. After prompt

diagnosis, treatment was given to the sick camels accordingly. Postmortem investigation of Dead camels is performed to assess and define the cause of mortality.

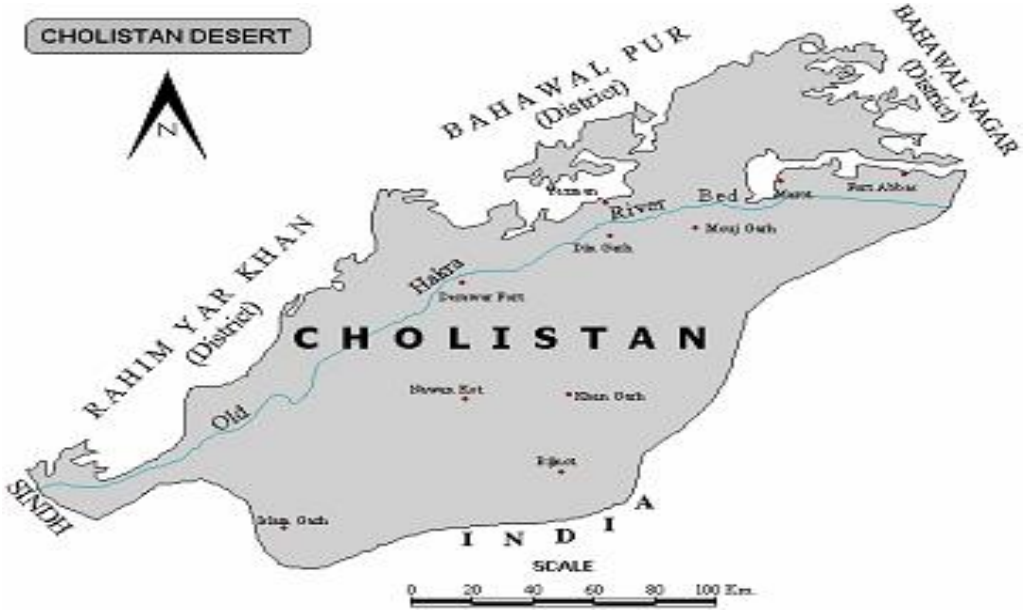

Figure 1: Map of Cholistan desert

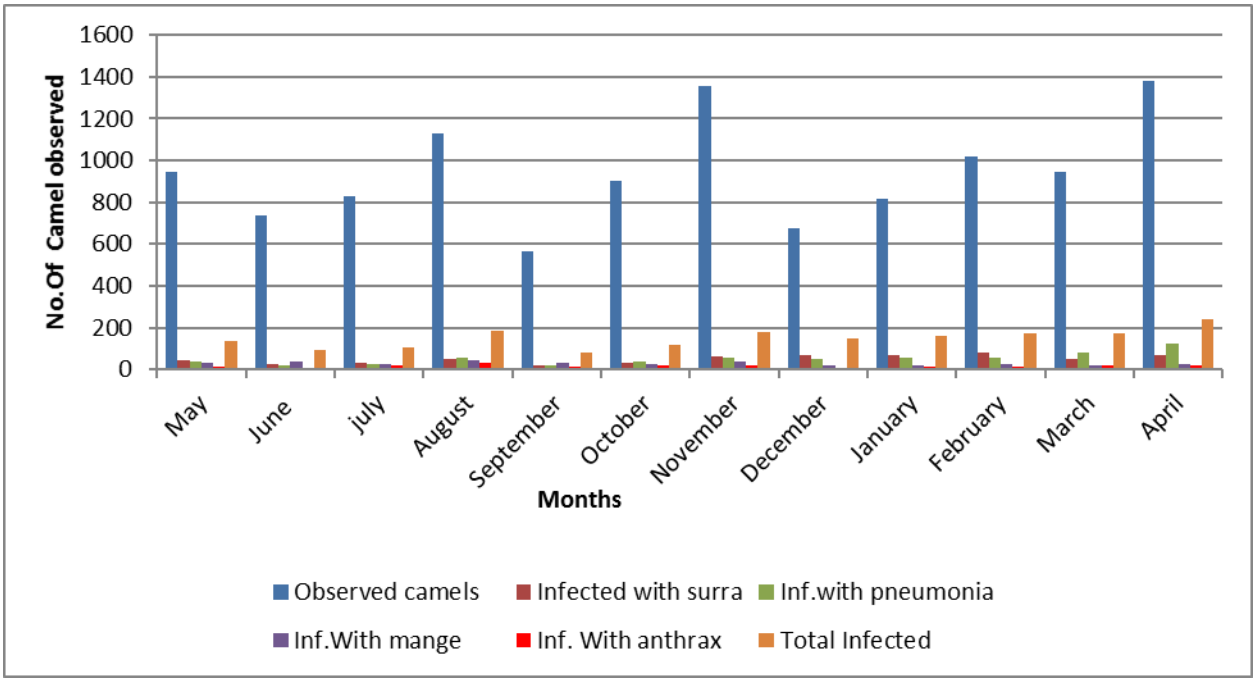

Figure 2: Month-wise prevalence of different diseases in lesser Cholistan desert

A total of 11294 camels were observed during study period from May 2010 to April 2011. Of those 1789 camels were found affected with different diseases as shown in Figure 2. The overall prevalence of all diseases in camels was reported as 15.840% during 2010-11.

Table 1: Overall prevalence of all diseases in Cholistan desert

Disease	Total Infected	% age of Each Disease
Surra	609	5.39
Pneumonia	621	5.49
Mange	355	3.14
Anthrax	204	1.8
Total Observed	11294	

The overall prevalence of trypanosomiasis in camels was reported as 5.39% (Table 1), the highest prevalence of Surra was found in December as 10.54% and lowest infection rate was recorded in June 3.40%. Camels affected with trypanosomiasis show the clinical signs of anemia, increased body temperature, emaciation and impaired appetite, edema, coughing and labored breathing. These results are similar with the investigations made by Tekle and Abebe (2001), Hussain et al., (1991) and Shah et al., (2004), who reported 10.9%, 13.2% and 13.72 % prevalence of *Trypanosoma evansi* in the camels respectively. Surra was most affective in low temperature months like as in December which was about 5.39% as mentioned above. As described earlier that in winter the temperature down so low 9°C.

The overall prevalence of pneumonia was recorded as 5.49% (Table 1), the highest prevalence of pneumonia was found in April as 9.18% and the lowest infection rate was recorded in June 2.85%. The affected camel showed nasal secretions sometimes bleeding from the nose, rise in body temperature, loss of appetite, continuous weight loss leading to death. Rise in body-temperature to 107.4°F with depression, anorexia, watery nasal discharge, cough and lachrymation show the onset of disease.

Results are almost parallel to Fraz, M. K. (2009 & 2011), who reported Prevalence, cumulative mortality and case fatality of outbreak were 0.79, 0.018 and 0.023, respectively. The disease was characterized by pyrexia (up to 107.4ºF).

The overall prevalence of Mange was recorded as 3.14% (Table 1) the infection rate of Mange was highest during the month of June as 5.57% and the infection rate was recorded as low as 1.92% in April. The affected camels showed black dark reddish marks and spots which seemed as rashed skins and sometimes the skin looked so rashly that blood emerges out. The causative agent is Sarcoptes scabiei var. cameli Pruritus, hair loss and loss of condition are the obvious clinical signs of the disease in camels. The acute form can lead to a sub-acute or chronic form. Due to the intimate and continuous contact of the herdsmen with their camels, direct transmission from camel to man is common, resulting in the condition in man termed pseudo scabies. Factors favoring infestation have been mentioned above, but the principal factor is poor condition. Age might be important - both very young and very old camels are particularly susceptible - and season as well, the disease being most acute during the hot season and in rainy periods.

As for as the Anthrax was concerned, overall prevalence of anthrax was recorded in whole study period was as 1.80 % (Figure 2), with highest infection was recorded as 2.91% in the month of August, and the lowest prevalence was recorded in the month of June which was 1.22%.

Anthrax may be the most serious bacterial disease affecting camels. It is caused by *Bacillus anthracis* and takes an acute or per acute form leading to sudden death, with or without clinical manifestations. Infection takes place mostly through the alimentary tract, by ingesting contaminated food or drinking from stagnant water. It can also be transmitted directly by biting flies, e.g. Tabanus species or nasal bots (*Cephalopinatitillator*). Painful swellings sometimes develop at the throat, the base of the neck and groins. These are particularly large when the palate becomes involved due to a local puncture in the nasopharynx by bots or other means. The clinical signs, when noticed, may be summarized as: dark foamy blood oozing from the natural orifices, occasional diarrhea, tympany, colic and apoplectic manifestations. The disease is well-known to nomads and camel breeders, hence the many local names and synonyms given to it by nomads and camel breeders in many countries. Excluding some of the parasitic diseases such as trypanosomiasis and mange, anthrax may be the most serious bacterial disease affecting camels.

RECOMMENDATIONS

To improve the health condition of camel in cholistan for the improved production, following are the some recommendations for the all stake holders in the region.

The basic knowledge of nutritional and animal health management should be introduced to the Livestock owner so that they can manage their herds in a better and scientific way. Moreover a proper animal health delivery system should be developed that could be extended to all livestock owner. Mobile health units should be created by Government in far distant places in desert territory for immediate rescue and relief.

Overcrowding of camels population should be avoided as possible because some diseases are prone to transmit to other members by touch like Mange, and some viral diseases which are transmitted from one animal to other.

Using data generated from this study, which could be serve as basic line information, strategic disease control scheme should be develop to fight against infectious, parasites and miscelionosis diseases especially Surra, pneumonia, mange and anthrax.

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