Mini Review

Status of Animal Health with Emphasis of Blue Tongue Virus Disease in Kalat Region, Balochistan

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Abstract

Bluetongue is non contagious vector borne viral disease of small ruminants. It transmits by biting of culicoides midges and causes severe economic losses to animal owner in term of high morbidity, decreased production and impaired reproduction. Balochistan, being largest province of the country have scattered population in far remote areas. About 70% of the provincial population rely upon livestock rearing for their livelihood. Kalat is largest division of the province that stretches from Kalat city upto Lasbella including Khuzdar, Kharan and Awaran. It is located on main RCD route that will ultimately boost the animal marketing and their easy access to main market. Although different vaccines are practiced throughout the province but no such vaccine is available against BT in the country. That's why animals are facing problems of some undiagnosed diseases. This review provides necessary information about disease in the region. It is need of the time to educate farmer and strict vigilance may be practiced for proper and timely vaccination of all animals to curtail deadliest diseases in the region.

Keywords: Blue tongue Virus, Kalat, small ruminants, Economic losses.

ARTICLE INFORMATION

Received: 02.05.2019

Revised: 19.06.2019

Accepted: 30.06.2019

DOI: 10.31580/pjmls.v2i2.1144

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INTRODUCTION

Livestock shares 60.54 % in agriculture and 11.22 % in national GDP (Anonymous, 2018). Bluetongue is an important tick borne viral disease of ruminants caused by a non Orbivirus. The virus belongs to family Reoviridae and is transmitted by culicoides midges. Although, it is non contagious disease but causes severe economic losses to the farmer community due to decreased production and impaired reproduction (Mertens et al., 2008). The common symptoms include, rhinitis, stomatitis. Coronitis pyrexia and foams in mouth etc. It also causes abortion in pregnant animals and even some congenital deformities may also develop (Bitew et al., 2013).

Earlier few serotypes of bluetongue virus were isolated from Southern European and Mediterranean countries. So far 8 different serotypes have been isolated from these southern European countries and some strain are isolated from advanced countries such as, Australia, Israel and USA (Gibbs and Greiner, 1989).

The spread of BT has been described into three epidemiological zones, an Enzootic zone in the tropics where the virus is present with rare clinical cases. An epizootic zone at calm degrees where suffering flare-ups occur every now and then. The third an incursive zone, where disease is in conflict in a way that possible vector may not be sensitized (Gibbs and

Greiner, 1989). Bluetongue is one of the important diseases affecting variety of animals in Pakistan and is the major constrain in livestock development. It can also spread mechanically through use of contaminated surgical instruments and needles.

There are about 27 distinctive serotypes of BT distinguished around the world (Maan et al., 2011). On the other hand, out of more than 1000 culicoides spp, only 17 have found to be linked with BT. While only 6 spp have been proved to be responsible for the transmission of BT in different regions of the world (Tabachnick et al., 1995). Although in some regions it is present as silent infection in different animals (Shoorijeh et al., 2010).

Bluetongue is an emerging non zoonotic disease of this century that has been reported in many countries. The exact economic losses have been clearly documented. However, about 3 Billion US Dollar per year are estimated due to infertility and decreased production. It is also one of the constraints of animals export from the country in term of meat and semen (Rushton and Lyons, 2015).

Bluetongue (BT) is considered as one of the central driver of money related hardship to farmers and thus the World Organization for Animal Health has included it in the once-over of uncovered illnesses (Weaver and Reisen, 2010).

Sheep are most commonly infected than any other animal. It normally remains asymptomatic in bulls and goats. Different diagnostic test have been developed for the detection of virus or antibodies in specimens. But competitive ELISA (C-ELISA) is used in routine practices as it also recommended by organization of international Epizootics (OIE) Manual (Hamblin, 2004).

Although it is very difficult but not impossible to control and eradicate of BTV from endemic regions of the world due to its worldwide distribution, wide host range susceptibility, diversity of viral serotypes circulating in animal population and wide distribution of vector culicoids (Dungu, et al., 2014).

Bluetongue was first reported in South Africa from the imported animals from Europe. The virus is sensitive to heat and can be destroyed at 60 °C for 15 mnts. In our neighbor countries the BTV also have been reported from China and India (Zhang et al., 2004; Rao et al., 2016) and southern Iran (67.7%). In Pakistan the disease was first reported 30 back in 1995 (Akhtar et al., 1997). However, recently in Punjab (28.81%) and in Khyber Pushtukhwa (50%) was reported. In recent Years (47.26%) seroprevalence of BTV have also been documented from various parts of Balochistan that draws the attention of policy makers to screen the animals of the area (Sohail et al., 2018).

This study has been designed to assess the seroprevalence of BTV in the subjected area. BTV infection was first reported in China in 1979 (Zhang et al., 2004), while in India it was reported in 1964 in India (Sapre, 1964). The most recent surveillance report indicated an overall 48.4% prevalence of BTV infection in sheep flocks located in the North-West province, Khyber Pakhunkhwa, Pakistan (Akhtar et al., 1997). An overall country-wide surveillance data is lacking, particularly, to the best of our knowledge, there is no single report of BTV infection from Balochistan- Pakistan.

Livestock in District Kalat

Kalat is one of the densely populated district with an area 6,621 Square kilometer. It lies between 65°49'50"- 67°27'56" East longitudes and 27°55'55"- 29°37'43" North latitudes. It experiences dry weather in summer and colder in winter with mean annual rainfall of about 193 mm. Due to its higher altitude it also have snow fall in winter in different areas. Kalat region is included in cool agro-ecological zone having a potential of 139,082 hectares (21%) agricultural area (Anonymous, 2018)(Fig.1.2).

Fig.1. Map of kalat district showing location on main CPEC route.

Fig.2. Graphical presentation of Animal population in district Kalat.

There are many diseases of animals commonly seen in the area such as, Enterotoxaemia (ETV), Anthrax, Haemorrhagic Septicemia (HS), Peste des Petits ruminants (PPR) and Conatgeous Caprine Pleuro Pneumonia (CCPP) etc. Farmers commonly vaccinate their animals against these diseases. However, some other disease like, Blue tongue, Foot rot etc, remain undiagnosed due to lack of awareness and uneasy access to hospital that cause severe losses to animal owners.

Species Affected

Bluetongue virus can replicate in many species of ruminants and remain asymptomatic clinically. Mostly sheep are easily targeted and cattle goats are less commonly affected. It has also been detected in ruminant wildlife such as, Elephant, Rhinoceros and Giraffe etc. The virus spread also mechanically through needles and surgical items. It can persist in blood relatively for longer period facilitating transmission of culicoids.

Most of livestock owners in the area with small herd sized. The district is linked with Karachi in the south and Quetta (provincial capital) in the north route on main CPEC route. Rangelands are the prominent landscape with mountainous terrain in the region, consequently, livestock rearing, especially small ruminants are the major contributor to the local agriculture. The main economic activities in the area are livestock and agriculture farming.

This review draws the attention of livestock policy makers to immediately apply stern action and ensure about the vaccination of animals. So that the farmers may have healthy animals that will not only boost national GDP but also improve socio economic status of farmers.

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