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PRECISE DIAGNOSIS OF FATAL RESPIRATORY TRACT VIRAL INFECTIONS IN SMALL RUMINANTS: A REVIEW

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ABSTRACT

The causative agent of this economically important disease of small ruminants is a *Morbillivirus*, the Peste des Petits Ruminants Virus (PPRV), under the family *Paramyxoviridae* of order *Mononegavirales* [1]. The virus is closely related to Rinderpest virus (RPV), another member of *Morbillivirus* genus, which causes similar disease in large ruminants [2].

KEY WORDS: PPR, Small ruminant, Virus.

INTRODUCTION

The virus is also serologically related to Measles and Canine distemper virus [3]. Like all members of the family, the PPR virus is an enveloped pleomorphic particle of size between 150 and 390 nm^3 containing non-segmented single stranded RNA genome of negative polarity [4].

Detection of PPRV antibodies can be attempted for the diagnosis of PPR, however, in areas where specific vaccination against PPR is practiced, detection of PPRV antibodies may yield false picture of the prevalence of infection. Presence of maternal antibodies may further contribute to this problem.

An Update of diagnostic techniques employed

Virus isolation, AGID and CIEP were among the most commonly used tests for detection of PPRV. However, AGID and CIEP are not sensitive enough to detect the low quantities of virus. On the other hand, virus isolation technique, which is more sensitive, takes one or two

weeks to obtain a result. These limitations are overcome with development of mAb-based sandwich ELISA, which is highly sensitive and rapid [5].

A provisional diagnosis of PPR can be made from epidemiological and clinical features of the disease. To differentiate it from rinderpest and other acute diseases with grossly presenting similar signs, some laboratory tests are needed for proper diagnosis. These include detection of virus itself, evidence of the presence of the virus (viral antigen or genetic material) or antibodies against the virus found in blood serum [4].

CONCLUSION

With the advent of mAb based ELISAs (cELISA and immunocapture or sandwich ELISA) and molecular biological techniques, rapid and specific diagnosis of PPR has become possible [5]. Taylor [6] reported that outbreaks of PPR usually occurred following introduction of new animals in the flocks and a similar outbreak of PPR in regional Goat Breeding Farm at Debipur in Tripura after the introduction of Barbari goats from Makhdoom, U.P., India. The constant movement of herds of goats over large areas and within different states may be greatly facilitating the spread of infection among goat [7, 8].

REFERENCES

1. Murphy FA, Gibbs EPS, Horzinek MC, Studdert MJ. Classification and nomenclature of viruses. In: *Text Book of Veterinary Virology*, 3rd ed. Academic Press, NY, 1999; pp. 413.
2. Couacy-Hymann E, Roger F, Hurard C, Guillou JP, Libeau G, Diallo A. Rapid and sensitive detection of Peste des petits ruminants virus by a polymerase chain reaction assay. *Journal of Virological Methods*. 2002; **100** (1-2): 17-25.
3. Gibbs EPJ, Taylor WP, Lawman MPJ, Bryant J. Classification of the Peste-des-petits-ruminants virus as the fourth member of the genus Morbillivirus. *International Journal of Virology*. 1979; 11: 268-74.
4. Durojaiye OA, Taylor WP, Smale C. The ultrastructure of Peste des petits ruminants virus. Zentralblatt Fur Veterinarmedizin Reihe B-Journal Of Veterinary Medicine Series B-Infectious Diseases Immunology Food Hygiene Veterinary Public Health (*Zbl. Vet. Med. B.*) 1985; 32 (6): 460-5.
5. Pal S, Isore DP, Mukhopadhayay SK, Ganguly S, Das M. Seroprevalence and incidence of PPR among population of small ruminants in West Bengal, India. *International Journal of Pharmaceutical Research and Bio-science*. 2014; 3(3): 396-401.

6. Taylor WP. The distribution and epidemiology of 'Peste des petits ruminants'. *Preventive Veterinary Medicine*. 1984; 2: 157-66.
7. Asmar JA, Radwan AI, Abi AH, Rasheid AA. A PPR-like disease of sheep in central Saudi Arabia: evidence of its immunologic relation to Rinderpest: Prospects for a control method. *Proceedings of the Fourth Conference on the Biological Aspects of Saudi Arabia*. University of Riyadh, Riyadh, Saudi Arabia. 1980; pp. 325-37.
8. Mondal AK, Chottopadhyay AP, Sarkar SD, Saha GR, Bhowmik MK. Report on epizootological and clinicopathological observations on Peste des petits ruminants (PPR) of goats in West Bengal. *Indian Journal of Animal Health.* 1995; 34 (2): 145-8.