

Seroprevalence of bovine viral diarrhea virus (BVDV) infection in sheep of Khouzestan province

Barjasteh, K.¹; Haji Hajikolaei, M.R.²; Seyfi Abad Shapouri, M.R.³;
Pourmahdi Borujeni, M.⁴; Nouri, M.² and Dagheri, M.⁵

Received: 14.06.2018

Accepted: 24.12.2018

Abstract

This serological survey was carried out to determine the prevalence rate of bovine viral diarrhea virus (BVDV) infection in sheep in Khouzestan province, Southwest of Iran. For this purpose, blood samples were taken from 318 sheep of 5 districts, Baghmalek, Shoshtar, Hendijan, Ahvaz, and Behbahan that divided into sex and four age groups (1, 2, 3, and ≥ 4 years old). Sera were tested by virus neutralization test (VN) using NADL, strain of bovine viral diarrhea virus genotype 1 for detection of antibodies of BVDV. The results indicated 134((41.2%) sheep had antibodies to BVDV. The prevalence of infection in females and males were 40.8% and 55.2%, respectively. The prevalence of infection in 4 age groups were 36.5%, 31.4%, 44%, and 47.1% respectively. Behbahan (70.2%) and Baghmalek (26%) respectively, had higher and lower rate of infection. Statistical analysis showed no-relationship between age and sex groups with infection while this difference between districts were significant. It is concluded that BVDV infection in Khouzestan province are endemic and infection of sheep and transmit to cattle should be considered in control and eradication of BVDV in cattle.

Keywords: BVDV, Seroprevalence, Infection, Sheep, Khouzestan

-
- 1- DVSc Graduated of Large Animal Internal Medicine, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran
 - 2- Professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran
 - 3- Professor, Department of Pathobiology, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran
 - 4- Associate Professor, Department of Food Hygiene, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran
 - 5- Expert, Department of Pathobiology, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran
- Corresponding Author:** Haji Hajikolaei, M.R., E-mail: mhajih@scu.ac.ir

References

- Bachofen, C.; Vogt, H.; Stalder, H.; Mathys, T.; Zanoni, R.; Hilb, M. and Peterhans, E. (2013). Persistent infections after natural transmission of bovine viral diarrhoea virus from cattle to goats and among goats. *Veterinary Research*; 44:32.
- Constable, P.D.; Hinchcliff, K.W.; Done, SH. and Granberg, W. (2017). *Veterinary Medicine*. 11th ed. W.B. Saunders Company, London, UK. Pp: 577-599.
- Cranwell, M.P.; Otter, A.; Errington, J.; Hogg, R.A.; Wakeley, P. and Sandvik, T. (2007). Detection of border disease virus in cattle. *Veterinary Record*, 11: 211-212.
- Haji Hajikolaie, M.R.; Seyfiabad Shapouri, M.R. and Mami, F. (2016). Comparison between commercial ELISA kit and virus neutralization test for detection of antibodies against bovine viral diarrhoea virus (BVDV) in buffalo. *Iranian Veterinary Journal*, 12 (3): 23-31.
- Haji Hajikolaie, M.R. and Seyfi Abad Shapouri, M.R. (2007). Serological Study of Bovine Viral Diarrhoea Virus Infection of Cattle in Ahwaz. *Journal of Veterinary Research*, 62 (1): 21-26.
- Haji Hajikolaie, M.R.; Seifi Abad-Shapouri, M.R. and Lotfi, M. (2010). Serological study of bovine viral diarrhoea virus (BVDV) infection in water buffalo (*Bubalus bubalis*) in Ahwaz (Southwestern of Iran). *International Journal of Veterinary Research*, 4(1): 19-22.
- Hemmatzadeh, F.; Kojouri, G.; Kargar, Moakhar, R. and Rohany, M. (2001). A Serological Survey on Bovine Viral Diarrhoea Virus Infection in Chahar Mahal Bakhtiary Province, Iran. *Journal of Veterinary Research*, 56 (3): 85-92.
- Keyvanfar, H.; Hemmatzadeh, F. and Kargar-Moakhar, R. (1999). A Serological Survey on Prevalence of Sheep Border Disease in Iran. *Archives of Razi Institute*, 50: 29-34.
- Krametter-Froetscher, R.; Duenser, M.; Preyler, B.; Theiner, A.; Benetka, V.; Moestl, K. and Baumgartner, W. (2010). Pestivirus Infection in Sheep and Goat in West Austria. *Veterinary Journal*, 186: 342-346.
- Krametter-Froetscher, A.; Loitsch, A.; Kohler, H.; Schleiner, A.; Schiefer, P.; Möstl, K. et al. (2007) Serological survey for antibodies against pestiviruses in sheep in Austria, *Veterinary Record*, 160: 726-730.
- Krametter-Froetscher, R.; Benetka, A.; Duenser, M.; Bagó, Z.; Theiner, A.; Preyler, B. et al. (2008). Descriptive study of a pestivirus infection in an Austrian goat, *Veterinary Record*, 163: 192-194.
- Nelson-Danielle, D.; Duprau-Jennifer, L.; Wolff-Peregrine, L.; Evermann, James, F. (2016). Persistent Bovine Viral Diarrhoea Virus Infection in Domestic and Wild Small Ruminants and Camelids Including the Mountain Goat (*Oreamnosamericanus*). *Frontiers in Microbiology*, 6: 1415-1422.
- OIE Manual of Diagnostic Test and Vaccines for terrestrial Animals (mammals, birds and bees). (2008). Vol. 2, 6th ed., Pp: 698-711.
- Paton, D.; Gunn, M.; Sands, J.; Yapp, F.; Drew, T.; Vilcek, S. and Edwards, S. (1997). Establishment of serial persistent infections with bovine viral diarrhoea virus in cattle and sheep and changes in epitope expression related to host species. *Archives of Virology* 142: 929-938.
- Passler, T.; Riddell-Kay, P.; Edmondson-Misty, A.; Chamorro-Manuel, F.; Neill-John, D.; Brodersen-Bruce, W. et al. (2014). Experimental infection of pregnant goats with bovine viral diarrhoea virus (BVDV) 1 or 2. *Veterinary Research*, 45(1): 38.
- Seifi Abad-Shapouri, M.R.; Haji Hajikolaie, M.R.; Lotfi, M.; Rasoli, A. and Karimi, A. (2007). Serological Survey of Pestivirus Infection of Small Ruminants in Ahwaz, Iran, *Archives of Razi Institute*, 62(2): 105-108.
- Zaghawa, A. (1998). Prevalence of antibodies to bovine viral diarrhoea virus and/or border disease virus in domestic ruminants. *Journal of Veterinary Medicine*, B, 45(6): 345-351.