

Histopathological, molecular and serological study of Johnes disease in buffaloes of Ahvaz

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Abstract

Johne's Disease (paratuberculosis) is granulomatous, progressive enteritis, which is untreatable, especially in domestic and wild ruminants caused by *mycobacterium avium subsp. paratuberculosis*. There is no accurate statistical information on the prevalence of Johnes disease in buffaloes of different regions of the country. This study was performed to detect *mycobacterium avium subsp. paratuberculosis* with different diagnostic methods: ELISA, PCR, Histopathology and their comparison. For this purpose, from December 2016 to October 2017, Among 97 slaughtered buffaloes, above two years of age with poor physical conditions were collected from blood samples, associated ileocecal lymph nodes, ileocecal valve and liver tissue were transferred to the laboratory. The serum level of infection (ELISA) was 4.1%, The molecular (PCR) test showed an infection rate of 32% in the intestine, 31% in the associated lymph node and 24.7% in the liver, Histopathology examination by Ziehl-Neelsen's specific staining, The prevalence of infections in the intestines are 7.2%, associated lymph nodes are 8.2% and 3.1% in the liver. The granulomatous lesions of the intestine were stained by hematoxylin-eosin (H&E) method in 11 buffaloes, only in 9 buffaloes their molecular test results were positive. Other histopathology findings of eosinophilic enteritis, Lymphocytic enteritis, granulomatous enteritis, mucous purulent enteritis were 37.9%, 29.3%, 19%, 13.8%, respectively. In the associated mesenteric lymph nodes, granulomatous lymphadenitis was 68.6%, purulent lymphadenitis were 25.7%, and in liver chronic hepatitis were 32.6%, chronic parasitic hepatitis 11.66%, perihepatitis 23.9%, cirrhosis 6.5%, and leiomyoma 25% have been observed. Due to the lack of observation of acid-fast bacilli in the present study, acid-fast granular debris (Paucibacillary) form of suspected Johnes disease can be found. At the same time, the increase of Ahvaz buffaloes contamination requires more serious attention to scientific and administrative references than the previous study.

Key word: Johnes's Disease, Histopathology, Serology, Molecular, Buffalo

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