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PREVALENCE OF BOVINE VIRAL DIARRHEA VIRUS (BVDV) IN CATTLE FROM SOME GOVERNORATES IN EGYPT.

El-Bagoury G.F.[a], El-Habbaa A.S.[a], Nawal M.A.[b] and Khadr K.A.[c]

[a]Virology Dept., Fac. Vet. Med., Benha University, Benha, [b]Animal Health Research Institute (AHRI), Dokki-Giza, [c]General Organization for Veterinary Medicine (GOVS), Dokki-Giza, Egypt.

A B S T R A C T

Diagnosis of the BVDV infection among suspected and apparently healthy cattle at Kaluobia, Giza, Menofeia and Gharbia governorates was done by detection of prevalence of BVD antibodies. A total number of 151/151(100%) and 97/151 (62.25%) of examined sera were positive for BVD antibodies using serum neutralization test (SNT) and competitive immunoenzymatic assay (cIEA), respectively. Examined sera with cIEA detected antibodies against BVDV non structral proteins P80/P125. Detection of BVDV in buffy coat samples using antigen capture ELISA showed that 22/151(14.56%) of the samples were positive for BVDV. Isolation and biotyping of suspected BVDV from buffy coat on MDBK cell line showed that 19/22 of ELISA positive buffy coat samples were cytopathogenic BVDV biotype (cpBVDV) while only 3/22 samples were CPE negative suggesting a non-cytopathogenic BVDV (ncpBVDV) biotype. Inoculated cell culture with no CPE were subjected to IFAT and IPMA using specific antisera against BVDV revealed positive results indicating presence of non-cytopathogenic strain of BVDV. It was concluded that cIEA detected antibodies against non-structural proteins P80/P125 has many advantages over SNT being for rapid diagnosis of BVDV. However, diagnosis must be confirmed with isolation, biotyping and identification of BVDV using suitable sensitive and specific methods as ELISA, IFAT and IPMA.

KEY WORDS: BVDV, ELISA, SNT.

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1. INTRODUCTION

Bovine viral diarrhea virus (BVDV) is an enveloped, single-stranded, RNA virus genus Pestivirus, family Flaviviridae [18]. BVD is characterized with depression, fever, diarrhea, drop in milk yield, loss of appetite and temporary leucopenia [14]. There are two antigenically distinct genotypes of BVDV (types 1 and 2) and each of them occurs in two forms including non-cytopathogenic and cytopathogenic according to whether/or not it produces visible change in cell cultures [21]. The 2 biotypes of BVD virus are not distinguishable serologically; however, in addition to nonstructural viral protein (pl25) that is present in all BVD virus-infected cells, cytopathic viruses produce p80 protein that not observed in cells infected with non-cytopathic BVD viruses [6]. BVDV is a world-wide distributed virus of cattle of all ages causing infection range from subclinical to highly fatal condition called mucosal disease [13].

In Egypt, the disease was continually diagnosed by [7, 15-17]. The prevalence of BVD has been mainly reported on the basis of the detection of antibody against BVDV [5]. However, diagnosis of BVDV through demonstration of BVD neutralizing antibodies needs further explanation.