عنوان مقاله:

Molecular epidemiology and phylogenetic analysis of bovine picobirnaviruses causing calf diarrhea, in Iran

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خلاصه مقاله:

Picobirnavirus (PBV) is an enteropathogen virus causing diarrhea as an opportunistic virus in its vertebrate host. There is no information about human or animal PBVs in Iran. The aim of the present study was the investigation of the epidemiology of bovine PBV in the broad geographical area of Iran. Four hundred and eighty-five stool samples of up to ۱ month old diarrheic calves were collected from ۱۴ provinces and were tested with polyacrylamide gel electrophoresis (PAGE), and reverse transcription polymerase chain reaction (RT-PCR). Five samples were positive in PAGE assay (۱.۰۰%) and all of them were amplified using GI specific primers in RT-PCR. Phylogenetic analysis of one of the amplicons (strain Nazaktabar-۱۴) revealed a low relationship to bovine PBV sequences and more identity to PBV isolates from other hosts. The structural alignment of the deduced amino acids of the partially sequenced RdRp gene of the Nazaktabar-۱۴ strain showed high conservation. Sequences obtained from other amplicons showed a high mutation rate and further analysis of one of them showed that, despite the potential of forming deleterious mutations, most of the point mutations occurred in the RdRp gene of PBVs may be a silent mutation. There is little information about the molecular epidemiology of bovine PBVs. This study was the first report on the occurrence of PBVs in Iran and the first study on the molecular epidemiology of bovine PBV in the Middle East, revealing its low frequency as a diarrhea causative agent.

کلمات کلیدی:

Bovine picobirnavirus, Calf diarrhea, Molecular Epidemiology, Phylogenetic study