Identification of Torque Teno Midi Virus/Small Anellovirus (TTMDV/SAV) in The Sera of HIV Infected Individuals in Lorestan Province, Iran by Nested- PCR

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Background & Objectives: In 2005, two genotypes of a new circular single stranded DNA virus were identified in the sera of patients with acute viral infectious syndrome for the first time, and finally named as (TTMDV/SAV). The prevalence of 20%, 8.6% and 34.5% are reported in blood of healthy individuals in France, Italy and Republic of Korea respectively and also about 50% of cervical tumor cases in Isfahan, Iran. Since the TTMDV/SAV virus is transmitted through blood products and this virus can infect humans, the aim of this study was to determine the frequency of the infection of torque teno midi virus/small anellovirus (TTMDV/SAV) in the sera of HIV patients in Lorestan Province and detect any possible correlation between them.

Methods: Ninety two HIV positive serum samples were collected from pathobiology laboratories in Khorram abad city. Then the sera were subjected to DNA extraction (phenol/ chlorophorm/isoamilalchohol). For confirmation of DNA extraction quality, primers D-141F and D-141R were used for detection of GJB2 gene in human chromosome 13 with product size of 125 bp as house keeping gene. Then Nested-PCR was performed using SMAs/SMAr primers for detection of TTMDV/SAV.

Results: Out of 92 HIV cases, 75 cases were positive for TTMDV/SAV. Totally 81.4% of cases were positive for presence of genomic DNA of TTMDV/SAV.

Conclusion: This is the first time that TTMDV/SAV is reported in HIV infected individuals in Iran and in the world. The high frequency of the virus (81.4%) in HIV cases may indicate a possible etiological role for the virus, although confirmation of this needs more detailed studies.

Keywords: TTMDV/SAV; HIV; PCR