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Paper Poster Session IV

Viral infection and disease

Molecular epidemiology of human parvovirus B19 in a cohort of HIV-infected patients

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Objective: The human parvovirus B19 (B19) usually causes a subclinical infection in immunocompetent individuals. Whereas immunocompromised individuals such as HIV infected patients are at risk of persistent anemia due to B19 infection. Only few studies have been carried out on distribution and genotype of B19 in Iran. Therefore, we aimed to determine the molecular epidemiology of B19 among Iranian patients infected with HIV.

Methods: We conducted a cross sectional survey on 99 HIV patients and 64 healthy controls. IgG and IgM antibodies against B19 were detected by ELISA and B19 DNA was assessed by nested PCR. PCR products were subjected to direct sequencing and classified after phylogenetic analysis.

Results: The prevalence of B19 immunoglobulin was 11.1% for IgG and 1% for IgM. B19 DNA was detected in 13.1% of cases. No samples were found to be positive for both antibodies while 3 cases showed B19 IgG and viremia simultaneously. The prevalence of B19 IgG, IgM and DNA in control group was 25%, 1.6% and 9.4% respectively. B19 viremia and IgG found concurrently in 4.7% of control cases. B19 IgG was significantly lower in HIV group than in normal controls. There was no significant difference regarding anemia between cases and controls.

No associations with B19 serology or viremia were found with respect to CD4 count and route of HIV transmission in patients group. But, the prevalence of B19 viremia was significantly higher in naive patients than cases under HAART treatment (30.4% vs. 8.1%, $p < 0.012$). All sequenced B19 isolates in case and control groups belonged to genotype 1, and classified as subtype B19-1A. We also determined the magnitude of nucleotide and amino acid divergence between Iranian strains. By comparison of the nucleotide sequences, the mean variation was 0.0013 and in respect to amino acid divergence, mean was 0.004. The mean intra-genotypic and inter-genotypic nucleotide and amino acid distance will be presented in congress.

Conclusion: Our findings indicated that in the HAART era, the importance of B19 infections in HIV patients may be limited whereas persistent B19 viremia in the circulation of healthy controls raises a potential concern in blood donations.