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Oncolytic viruses can Parvovirus B19 be naturally oncolytic: Novel clinical evidence indicates it may be oncolytic in leukemic children

Janak Kishore
Sanjay Gandhi Post-graduate Institute of Medical Sciences, India

Virotherapy of cancer using oncolytic viruses are new biological therapeutics since such viruses can preferentially infect and destroy cancerous cells specifically while sparing the surrounding tissues but there are no reports on whether parvovirus B19 can have an oncolyticproperty ? Two independent studies were done to find the role of B19 infection and cases were followed up to one year including mortality data. First one comprised of 35 children with hematological malignancies (Kishore et al 2011); six children (17.1%) had B19 IgM antibodies (5 ALL, 1 NHL) compared to one in 30 controls ($p<0.05$).Of five B19 IgM positive ALL cases two had B19 DNA both by PCR (VP1-VP2 common) and nested-PCR (VP1 unique) indicating presence of B19 genome and giant pronormoblasts (lantern cells) while third case had B19 IgMand lanten cell. In second group 50 children with acute viral hepatitis(AVH) were studied with 60 controls and 13 (38.2%) children had B19 IgM antibodies and 5 had B19 DNA. Six of 16 (37.5%) FHF (fulminant hepatic failure) children were positive for B19 IgM antibodies and 3 had DNA also. Only 1 of 37 (2.7%) controls was positive for B19 IgM antibodies. Three cases each of FHF and AH were negative for hepatitis viruses but had B19 DNA.

Data on mortality indicates that among children with AVH four died and all had B19 infection in contrast five children with ALL died but none had B19 infection. In the third case one child with CLL was found to have anti-B19 IgM antibodies and DNA did not go in relapse for about one year. Hence there is a need to explore if B19 virus has oncolytic properties.

Biography

Professor Janak Kishore is Chief of Serology and Molecular Virology in the Department of Microbiology, Sanjay Gandhi Post-graduate Institute of Medical Sciences, India. He was Associate Editor Indian Journal of Virology, member National Academy Medical Sciences, American societies and Fellow of JICA, Japan. Dr Kishore taught for over 30 yrs with pioneer work on parvovirus B19, developed in-house PCR and ELISA for B19 and published three novel clinical associations of B19. He also worked on cytomegalovirus, enteroviralhemorrhagic conjunctivitis, rubella etc. Dr. Kishore published over 50 papers, served as reviewer for reputed journals, organized conferences, Chaired sessions and frequently invited to speak at international conferences.

janaksgpgi@yahoo.co.in