Human parvovirus B19 in childhood acute lymphoblastic leukaemia in Basrah.

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Abstract

OBJECTIVE: To investigate the association of human parvovirus B19 infection with the onset of acute lymphoblastic leukaemia and its effect on TEL-AML-1 fusion gene and the presence of mutant P53. METHODS: The case-control study was conducted at Basrah Hospital for Paediatrics and Gynaecology, Basrah, Iraq, from May 2009 to April 2010. A total of 100 blood samples were collected from 40 newly diagnosed cases and 60 healthy children to serve as control matched by age and gender. Human parvovirus B19-IgG and anti-P53 antibody were detected by enzyme-linked immunosorbent assay and TEL-AML-1 fusion

gene was detected by reverse transcriptase-polymerase chain reaction on extracted ribonucleic acid from fresh blood samples using specified primers. SPSS 15 was used for statistical analysis. RESULTS: A higher proportion of human parvovirus B19-positive cases was found in leukaemic patients (n=19; 47.5%) compared to 12 (20%) in the control group (p<0.05). There was significant association between TEL-AML-1 translocation and human parvovirus-B19 infection as 10 (71.4%) of TEL-AML-1 translocation-positive cases had human parvovirus-B19 IgG. On the other hand, there was no association between such infections and P53 gene mutation in the patients. CONCLUSION: Human parvovirus-B19 infection is common in the population, with higher prevalence among leukaemic patients with significant association between human parvovirus-B19 and TEL-AML-1 fusion gene in patients of acute lymphoblastic leukaemia.