

Letters to the Editor

References

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Lack of evidence for herpesvirus, retrovirus, or parvovirus infection in Henoch-Schonlein purpura

Sirs,

Henoch-Schonlein purpura (HSP) is an idiopathic form of vasculitis which occurs mainly in childhood. Its clinical features include palpable purpura, arthritis, abdominal pain, and nephritis (1). In contrast to most other vasculitides, HSP is usually acute and self-limited. Some studies indicate variation in incidence according to season, and familial clusters have been reported (2). In addition, characteristic immunologic findings can often be demonstrated, including IgA deposits in tissues (3). These observations have led to the view that HSP represents an aberrant immune response to infection. To examine the possible role of viral infection in HSP, we used sensitive PCR-based techniques to detect evidence of human herpesviruses (HHV) or retroviruses in patients' peripheral blood. We chose to study these viruses because of reports of their involvement in HSP (4) and other forms of vasculitis (5), and their potential immunomodulatory effects. Because several reports have emphasized a possible association between parvovirus B19 and HSP, patient sera were also examined for parvovirus DNA.

Patients age 2-16 years were recruited at Hadassah Hospital, Mount Scopus during 1996-2001. The diagnosis of HSP was established according to American College of Rheumatology criteria. The study was

approved by an Institutional Review Board, and informed consent of participants was obtained. Twenty-eight patients were examined for parvovirus and HHV, and 8 were studied for retroviruses. Sera were cryopreserved at -70°C until assay. Genomic DNA was prepared from PBMC or buffy coat by a proprietary technique (Quiagen DNA blood kit).

HHV assays were performed on DNA substrate by a nested PCR technique using degenerate primers to amplify a relatively conserved sequence of herpesviral DNA-directed DNA polymerase, as described elsewhere (6). The assay could detect as few as 10 copies of HHV-1, and HHV-3,4,5, and 6A DNA in very low amounts. Amplification of an unrelated DNA sequence was performed as a positive control for each specimen. Parvovirus DNA was detected by nested PCR as previously described (7). This method detects parvovirus DNA in approximately 85% of sera from immunocompetent patients containing IgM antibodies to parvovirus. We found it could detect 10 parvovirus copies in human serum. Sera were screened for reverse transcriptase (RT) activity, which is a generic marker of all retroviral particles using Amp-RT, an ultrasensitive PCR-based RT assay, as previously described (8). Sera were also tested for infection with human T-cell lymphotropic virus types 1 and 2 (HTLV-1 and -2) by antibody screening using an HTLV 1/2 purified virus EIA spiked with recombinant HTLV-1 p21E antigen (Organon-Teknika, Durham, NC).

Using these techniques, we found no evidence for HHV, retrovirus, or parvovirus infection in this group of patients.

Despite epidemiologic studies pointing to a possible link between HSP and infection, a causal role for specific agents has been difficult to establish. Numerous case reports have described HSP accompanied by serologic evidence of recent infection by viruses including varicella, adenovirus, rubella, human immunodeficiency virus, and hepatitis viruses (1,9). In addition, several reports have described HSP associated with IgM antibodies to parvovirus, but these reports were not confirmed in subsequent larger studies (10). Our result is in keeping with these later reports.

Amp-RT detects cell-free retrovirus. Intracellular HTLV may not be detected by Amp-RT, but antibodies to these viruses were not found in sera tested. Taken together, the results suggest that retroviruses are not a common cause of HSP.

The duration of herpes viremia following acute infection varies according to the specific virus, lasting up to several weeks. While we found no HHV in peripheral blood, serologic studies will be necessary to

exclude the possibility that a post-infectious immunologic response to one of these viruses may contribute to the pathogenesis of some cases of HSP.

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