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Table 1. Tests for HIV and HLA-DR4 Antibodies.\*

DATE	HLA-DR4 ANTIBODY TITER†	HIV ANTIBODY TEST			
		H9-CELL-DERIVED ELISA‡	CEM-CELL-DERIVED ELISA‡	IFA (H9 CELLS)§	
				HIV-infected	not infected
6/26/85	1:4	0.53	0.15	-	-
10/11/85	ND	5.40	0.23	+	+
11/7/85	ND	6.85	ND	+	+
11/25/85	1:32	6.50	0.23	+	+
12/18/85	ND	4.00	0.20	+	+
2/4/86	1:2	0.60	0.27	-	-

\*IFA denotes immunofluorescence assay, and ND not done (i.e., the test was not performed on that specimen).

†Titers of 1:2 or more were considered significant.

‡ELISA readings are expressed as optical-density readings/cutoff point. Values of 1.0 to 3.0 indicate a weakly positive result, values between 3.0 and 5.0 a moderately positive result, and values of more than 6.0 a strongly positive result.

§A plus sign indicates that immunofluorescence was present, whereas a minus indicates that immunofluorescence was not detected.

A FALSE POSITIVE HIV ANTIBODY REACTION DUE TO TRANSFUSION-INDUCED HLA-DR4 SENSITIZATION

To the Editor: Enzyme-linked immunosorbent assays (ELISAs) for serum antibodies to the human immunodeficiency virus (HIV) may give false positive results in low-risk groups.<sup>1,2</sup> HLA antigens are present in some HIV ELISA kits,<sup>3,5</sup> and antibodies against HLA Class II antigens occur in some subjects with false positive ELISAs.<sup>6,7</sup> However, serial studies have not been done to establish a causal relation between these findings. We describe a patient with acute leukemia in whom both antibodies against HLA-DR4 and a false positive HIV ELISA transiently occurred while he was receiving red-cell and platelet transfusions.

Screening for HIV antibody was performed with an ELISA kit with the use of a viral antigen derived from HIV-infected H9 cells, which have HLA-DR4 antigen.<sup>3-5</sup> An indirect immunofluorescence assay was also done with HIV-infected and noninfected H9 cells.<sup>8</sup> Some serum samples were tested with an ELISA kit with the use of a viral antigen derived from HIV-infected CEM cells, which lack human HLA Class II antigens.<sup>9</sup> Finally, selected serum samples were tested for HIV antibody by Western blot analysis and for HLA-DR4 antibodies.

Beginning in April 1985, blood products were screened for HIV antibody with H9-cell ELISA kits. The patient's serum first became reactive with H9 ELISA reagents in September 1985. ELISA values rose until November and then fell (Fig. 1 and Table 1). The immunofluorescence assay was also positive during this period, but reactivity was similar with both infected and noninfected H9 cells, and staining was confined to H9-cell membranes — a pattern distinct from that caused by HIV antibodies.<sup>8</sup> Moreover, none of the serum samples tested reacted with the CEM-cell ELISA kit, and Western blot analyses of serum samples obtained in November were negative. Finally, the titers of HLA-DR4 antibody, which were low in June 1985, rose by November 1985 and fell again by February 1986, paralleling the changes in H9-cell ELISA values. Serum samples obtained in November 1985 were retested with H9-cell ELISA kits developed in 1987 and were again positive, with a peak value of 3.0.

The rise and fall in HLA antibodies during the long-term administration of blood products has been well described both in patients with cancer and in normal subjects.<sup>9-14</sup> The serial observations in this case thus link changes in HIV ELISA reactivity to changes in HLA-DR4 antibody titers and provide more direct evidence that HLA sensitization can lead to even strongly reactive false positive screening tests for HIV exposure when ELISA kits containing H9-cell contaminants are used.

S.K. YU, M.D.  
 C.K.Y. FONG, PH.D.  
 M.L. LANDRY, M.D.  
 G.D. HSIUNG, PH.D.  
 L.R. SOLOMON, M.D.  
 Veterans Administration  
 Medical Center

West Haven, CT 06516

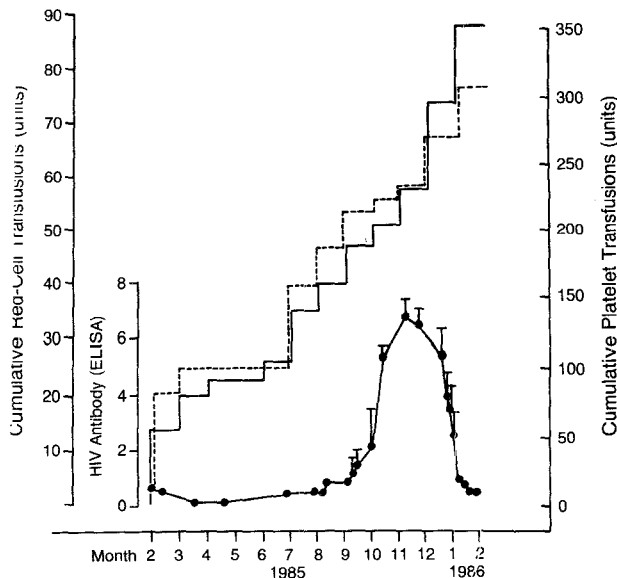


Figure 1. Relation of Serum HIV Antibody Levels as Determined by an H9-Cell-Derived ELISA (Closed Circles) to the Cumulative Red-Cell (Solid Line) and Platelet (Broken Line) Transfusions Received by the Patient.

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