CORRESPONDENCE

IgE IN REED-STERNBERG CELLS

To the Editor:

Dr. Samoszuk reported in Blood that IgE could be detected in 11 of 14 cases of Hodgkin’s disease (HD). He speculated that the IgE is probably bound to the CD23 (an IgE Fc receptor) associated with Hodgkin’s Reed-Sternberg (H-RS) cells and then internalized. In fact, a similar phenomenon has been observed in dendritic (Langerhans) cells in cutaneous infiltrates by mycosis fungoides.1-2 IgE deposition has not been observed in CD23-positive B cells.

The observation is of interest because it may explain, in part, the altered histopathologic reaction (eg, eosinophilia) in tissues involved by HD. However, the mechanism of CD23 expression may be more complicated than that described in this report.

(1) Expression of CD23 can be detected in 0% to 40% of patients with HD.3-7 If deposition of IgE is closely related to CD23 expression, one would expect a similar incidence or a similar expression pattern between CD23 and IgE in H-RS cells. The incidence of IgE (78.5%) in Samoszuk’s study is considered to be higher than that of CD23 expression reported by others.3-7 The discrepancy may be explained by variation in tissue samples or modulation or internalization of CD23/IgE complexes. However, double staining to correlate the expression of CD23 and IgE should clarify the role of CD23 in trapping IgE in H-RS cells.

(2) Expression of CD23 can be observed not only in B cells and eosinophils, but also in many other types of cells, such as monocytes, histiocytes, dendritic cells, and basophils.3-8,10-12

(3) B lymphocytes or Epstein-Barr virus (EBV)-negative B-lymphoma cells in vitro can be induced by EBV nuclear antigen 2 (EBNA-2) or latent membrane protein (LMP) to express CD23.13,14 However, there is no clear-cut effect of LMP in vivo on the expression of CD23 by H-RS cells (H-RS cells are EBNA-2-negative). The lack of correlation is not totally unexpected, because the effect of LMP is demonstrated only in B lymphocytes and there is no firm evidence that most H-RS cells are related to B cells.15 The lack of effect of LMP on the expression of CD23 probably reflects the intrinsic capacity of H-RS cells to express this receptor. It should also be noted that EBV-positive T-lymphoma cells are generally negative for CD23.

(4) The expression of CD23 can be influenced by factors (eg, IgE, interleukin-2 [IL-2], IL-4, or interferon-γ) other than LMP.3,4,8,12,16,19 These cytokines, which can be secreted by reactive cells or by H-RS cells, are not deficient in tissues involved by HD.20 The mechanism of expression of CD23 by H-RS cells is probably very complicated and not simply caused by EBV infection.

References

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RESPONSE

The letter by Dr Hsu regarding my recent report about IgE deposits in Hodgkin's disease (HD) with eosinophilia1 raises important and valid points that warrant some additional discussion. In particular, the very recent description of IgE deposition in CD23-positive dendritic cells in a subset of mycosis fungoides tumors2 may actually provide further support for my hypothesis that IgE deposition is related to tumor eosinophilia in HD tumors, because some patients with mycosis fungoides and cutaneous T-cell lymphomas also have extensive eosinophilia in their tumors and peripheral blood. However, at this time, a specific correlation between IgE deposits and eosinophilia in cutaneous T-cell lymphomas has not been established.

The apparent discrepancy between CD23 expression in HD5-7 and IgE deposition has a number of possible explanations in addition to those noted in Dr Hsu's letter. Both IgE and CD23 are labile antigens, and CD23 is readily shed from the membrane of living cells. Moreover, there are significant variations in the binding properties of the various monoclonal antibodies (M82, A2, B3, C4, D5, and D6) to detect CD23 antigen in frozen or fixed tissue sections.6,7 Leu 20 antibody (Becton-Dickinson, Mountain View, CA), for example, cannot detect CD23 in fixed tissue specimens. As my report emphasized, it is also possible that IgE deposition in HD is, in fact, unrelated to CD23 expression by Reed-Sternberg cells.

Finally, despite substantial recent evidence of a high incidence of Epstein-Barr virus in HD tumors,10,12 the role of this virus in the pathogenesis of the tumor remains unclear. While I currently favor a hypothesis that generally relates EBV infection to CD23 expression and eosinophilia in HD, I certainly agree with Dr Hsu's assessment regarding the complexity of CD23 expression and the likelihood that additional immunologic factors and interactions are involved in the pathogenesis of HD.

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REFERENCES


IgE in Reed-Sternberg cells [letter; comment]

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