EXPRESSION OF CD7 ANTIGEN PRECLUDES t(8;21)(q22;q22) CHROMOSOME ABERRATION IN ACUTE MYELOBLASTIC LEUKEMIA

To the Editor:

The report by Ball et al. showed the significance of the lymphoid markers, CD2 and CD19 antigens, expressed by subsets of acute myeloblastic leukemia (AML) in correlation with chromosomal aberrations and prognosis. The report disregarded CD7 antigen as lymphoid marker, probably because of the relatively high incidence of the expression of CD7 antigen in AML cases, compared with CD2 or CD19 antigen, was estimated to hamper the rational subgrouping of their cases. However, the relative high incidence of CD7+ AML can make its expression or absence eligible for the correlative analysis with other clinical features. We point out that t(8;21)(q22;q22) AML is characterized by the constant absence of the expression of CD7 antigen.

Karyotypic results were available in 36 of the 137 cases that were investigated for phenotypic analysis in our laboratory from January 1987 through December 1990. The expression of CD2, CD7, and CD19 antigens was always evaluated. The chromosomal aberration, t(8;21)(q22;q22), was detected in 5 of the 36 cases. Two of the five t(8;21)(q22;q22) AML cases expressed CD19 antigen, but none of them expressed CD7 or CD2 antigen. We collected 14 cases of t(8;21)(q22;q22) AML from available literature in which the expression of CD7 antigen was evaluated. None of the 14 reported cases of t(8;21)(q22;q22) AML expressed CD7 or CD2 antigen, but 8 of the 14 cases expressed CD19 antigen. On the contrary, CD7 antigen was expressed by 19 (French-American-British [FAB] M1, 17 cases; M2, 2 cases) of our 137 AML cases. Cytogenetical results were obtained from 3 of the 19 cases, showing normal karyotype in two cases and karyotype with 1p+ in one. None of the four reported CD7+ AML cases showed t(8;21)(q22;q22). Therefore, it is very likely that CD7 antigen, if expressed in a given case of AML, is a predicting marker on which t(8;21)(q22;q22) can be excluded. This prediction is useful because t(8;21)(q22;q22) AML, usually M2 (FAB), is occasionally M1 (FAB), and because both M1 and M2 blasts can express CD7 antigen.

Ball et al. did not clearly show which of the two lymphoid markers, CD2 or CD19 antigen, was expressed by their t(8;21)(q22; q22) AML cases, while they pointed out the high incidence of the expression of the lymphoid markers in the AML cells with t(8;21)(q22;q22). However, AML cells with t(8;21)(q22;q22) have been reported to express CD19 antigen at a rather high incidence, as was also shown in our laboratory. Furthermore, we could not find CD2+ t(8;21)(q22;q22) AML cases in the literature. Our 137 AML cases included three CD2+ cases, which were two CD7+ (FAB M1) and a CD7+ (FAB M3) with t(15;17) cases. Thus, some unknown feature of t(8;21)(q22;q22) AML cells inclining to B-lineage may explain the constant absence of CD7 or CD2 antigen and the rather high incidence of the expression of CD19 antigen.

The heterogeneity of AML will be further studied based on multiple markers including cell surface antigens, chromosomal aberrations, and prognosis. Future analyses may show that the constant absence of some nonmyeloid antigen, which is expressed at a certain incidence by AML cells, correlates with other clinical features like the constant lack of CD7 antigen by t(8;21)(q22;q22) AML cells.

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RESPONSE

We are responding for Cancer and Leukemia Group B to the correspondence of Tatsumi et al, "Expression of CD7 Antigen Precludes t(8;21)(q22;q22) Chromosome Aberration in Acute Myeloblastic Leukemia." Tatsumi et al comment that the expression of the CD7 antigen appears to preclude the presence of t(8;21)(q22;q22) based on their data and a review of the literature. Moreover, they report that expression of CD19 antigen is common in cases with this cytogenetic abnormality, reporting that 8 of 14 cases in the literature express CD19 and that 2 of 5 cases in their hands express CD19. Referring to the report of Ball et al, where we showed that there was a high incidence of expression of both CD19 and CD2 in cases of t(8;21)(q22;q22), Tatsumi et al correctly point out that we did not state which lymphoid markers were positive on our cases of t(8;21)(q22;q22) (Ball, et al). We would now like to report these data in response to Dr Tatsumi's letter.

There are eight cases in this database with t(8;21)(q22;q22) in which the blast count was greater than 70%. Six of these cases were examined for CD19 expression and three of six (50%) were positive. Five cases were studied for CD2 expression and one of five (20%) were positive. Unfortunately, we did not measure CD7 in this study.

Thus, we would agree with Tatsumi et al that expression of CD19 appears to be common in cases of AML with the cytogenetic abnormality t(8;21)(q22;q22). However, our data do not support the notion that CD2 is absent on cases of t(8;21)(q22;q22) because we did find one case positive for CD2. The reason for the association of t(8;21)(q22;q22) and CD19 surface antigen expression is unclear.

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