CD34 immunoperoxidase staining for the diagnosis of myelodysplastic syndromes and chronic myeloid leukaemia

Horny et al recently reported that immunoperoxidase staining of bone marrow biopsy specimens with CD34/QBEND10 monoclonal antibody can be used to separate the myelodysplastic syndromes RAEB and RAEB-T from the RA and RARS subtypes. This report has now confirmed our previous findings that CD34/QBEND10 is a useful reagent for the study of conventionaly processed, paraffin wax embedded bone marrow biopsy specimens. We have recently studied bone marrow biopsy specimens from patients with primary myelodysplastic syndromes to address the diagnostic value of CD34 staining in these conditions. We found that CD34 immunostaining can help in the detection of the increased number of blasts associated with the RAEB and RAEB-T subtypes. In addition, our study showed that QBEND10 represents a powerful prognostic tool for predicting survival and outcome in myelodysplastic syndromes. In primary RAEB cases median survival was 41 months in those with more than 1% CD34+ cells, and 29 months in those with more than 1% CD34+ cells (p<0.05). Similar results were obtained in cases of therapy related myelodysplasia. CD34+ cases had a mean survival of 10 months compared with 43 months for the CD34− cases (p<0.0005).

The authors also suggest the potential usefulness of CD34 staining for identifying patients in the accelerated phase of chronic myeloid leukaemia. Our recently published study of 59 bone marrow biopsy specimens representing the three phases (stable, accelerated and blastic) of chronic myeloid leukaemia has indeed confirmed the finding of a statistically significant difference in the CD34 value in the two aggressive phases of this disease compared with the stable phase.

Taken together, these data and those from Horny et al show that QBEND10 is a very useful reagent for the study of routinely processed bone marrow biopsy specimens and may provide useful diagnostic and prognostic information in myelodysplastic syndromes and myeloproliferative disorders. This type of approach may be especially valuable when a paraffin wax embedded specimen is the only material available for immunophenotyping.

A ORAZI
Associate Professor of Pathology
Director, Section of Immunohistochemistry
Department of Pathology and Laboratory Medicine
University Hospital 4430
Indiana University Medical Center
550 North University Blvd
Indianapolis
Indiana 46202-5283