

## **Immunoblastic morphology but not the immunohistochemical GCB/nonGCB classifier predicts outcome in diffuse large B-cell lymphoma in the RICOVER-60 trial of the DSHNHL.**

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### **Source**

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### **Abstract**

The survival of diffuse large B-cell lymphoma patients varies considerably, reflecting the molecular diversity of tumors. In view of the controversy whether cytologic features, immunohistochemical markers or gene expression signatures may capture this molecular diversity, we investigated which features provide prognostic information in a prospective trial in the R-CHOP treatment era. Within the cohort of DLBCLs patients treated in the RICOVER-60 trial of the German High-Grade Lymphoma Study Group (DSHNHL), we tested the prognostic impact of IB morphology in 949 patients. The expression of immunohistochemical markers CD5, CD10, BCL2, BCL6, human leukocyte antigen (HLA)-DR, interferon regulatory factor-4/multiple myeloma-1 (IRF4/MUM1), and Ki-67 was assessed in 506 patients. Expression of the immunohistochemical markers tested was of modest, if any, prognostic relevance. Moreover, the Hans algorithm using the expression patterns of CD10, BCL6, and interferon regulatory factor-4/multiple myeloma-1 failed to show prognostic significance in the entire cohort as well as in patient subgroups. IB morphology, however, emerged as a robust, significantly adverse prognostic factor in multivariate analysis, and its diagnosis showed a good reproducibility among expert hematopathologists. We conclude, therefore, that IB morphology in DLBCL is likely to capture some of the adverse molecular alterations that are currently not detectable in a routine diagnostic setting, and that its recognition has significant prognostic power.