

Cellular kinetic and phenotypic heterogeneity in and among Burkitt's and Burkitt's-like lymphomas

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Abstract:

This study asks whether the known genotypic heterogeneity within and between endemic or sporadic Burkitt's lymphomas (eBLs and sBLs, n = 10 each), and Burkitt-like lymphomas (BLLs, n=12), is reflected in divergent cytokinetics and related immunophenotypes. There was strong evidence that eBL and BLL grow markedly faster than sBL, as shown by differences in mitotic and apoptotic indices. Furthermore, in BLL, the median percentage of neoplastic cells immunoreactive for the bcl-2 protein was much higher than that observed in eBL and sBL. The reverse was true for the median fraction of cells containing c-myc protein. In eBL and sBL, the median fraction of bcl-6 protein-positive cells reached values above 50 per cent, while cells of 8/12 BLLs did not contain detectable amounts of this protein. This observation indicates that in this respect, eBL and sBL resemble normal germinal centres of lymphatic tissue much more than do BLL. Evidence for infection of neoplastic cells by the Epstein-Barr virus (EBV) was observed in 9/10 cases of eBL and in 3/10 of sBL, but not in BLL. EBV-positive lymphomas were associated with distinctly lower apoptotic indices and smaller median percentages of bcl-6-positive cells than EBV-negative tumours.