FOLLICULAR LYMPHOMAS WITHOUT t(14;18) CHROMOSOMAL TRANSLOCATIONS EXHIBIT VARIATION IN BCL2 PROTEIN EXPRESSION

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Background:
The hallmark of follicular lymphoma is the t(14;18)(q32;q21) chromosomal translocation that leads to deregulation of BCL2 expression in tumour cells. However, not all cases of follicular lymphoma express BCL2, nor is the t(14;18) translocation always present. Follicular lymphomas lacking the BCL2 rearrangement are less well studied with regards to their immunohistochemical and molecular features. This study aims to investigate the BCL2 protein expression pattern in t(14;18)-negative follicular lymphomas.

Materials and methods:
BCL2 protein expression pattern was analysed in 26 cases of t(14;18)-negative follicular lymphomas (determined by FISH), using antibodies against two different epitopes i.e., the widely-used antibody BCL2/124 and an alternative antibody E17.

Results:
Two of the t(14;18)-negative cases showed evidence of BCL2 amplification and trisomy 18. A total of 13 (50%) cases lacked BCL2 expression. In 10 (38%) cases, the expression was heterogeneous and in only three cases (12%) the BCL2 expression was strongly positive. These cases could thus be subdivided into three subgroups i.e., Group I: normal BCL2 genes (i.e., no evidence of translocation or amplification), and BCL2 protein was negative, Group II: normal BCL2 genes but BCL2 protein was positive and, Group III: presence of other genetic alterations i.e. BCL2 amplification and trisomy 18, and positive for BCL2 protein.

Conclusion:
This study suggest that it may be possible on the basis of staining to predict that the t(14;18) translocation is absent if a case is either negative for BCL2 protein with different antibodies or has heterogeneous BCL2 expression, possibly acquired through a physiological process of differentiation.

Key words:
follicular lymphoma, t(14;18)-negative, BCL2 expression