DNA ploidy in gastrointestinal B-cell lymphomas. An image analysis study of 43 cases.

Abstract:

OBJECTIVE: To analyze the prognostic importance of DNA ploidy pattern on gastrointestinal (GI) B-cell lymphoma using image cytometry (ICM) and to compare the results with previously published flow cytometry (FCM) data. STUDY DESIGN: Forty-three cases of surgically resected primary GI B-cell lymphomas were examined. Thirty-eight tumors were located in the stomach, 2 in the small intestine, 1 in the large bowel and 2 in both the stomach and small intestine. Six cases were at stage E I 1, 15 at stage E I 2, 20 at stage E II 1 and 1 each at stages III and IV. Histologically, the lymphomas were classified as GI low grade marginal zone lymphoma of mucosa-associated lymphoid tissue (MALT) type (low grade, 12 cases), low grade MALT lymphoma with a high grade component (mixed type, 10 cases) and GI diffuse large B-cell lymphoma (DLBC) (high grade MALT lymphoma, 21 cases). After gross removal of nonneoplastic tissue, single cell suspensions were prepared from paraffin blocks and stained according to Feulgen. Ploidy analysis was done using a custom-made DNA cytometer and Optimas image analysis software (Optimas Corp., Seattle, Washington, U.S.A.). RESULTS: Aneuploidy was found in 42% (5/12 cases) of low grade MALT lymphoma, 90% (9/10 cases) of mixed type lymphoma and 100% (21/21 cases) of GI DLBCL. DNA ploidy had no significant impact on overall survival time (P = .73). CONCLUSION: ICM analysis showed
a higher proportion of aneuploidy in GI lymphomas as compared to that in prior studies using FCM for ploidy determination. Whether DNA ploidy is an independent prognostic factor remains to be determined.