Semin Oncol. 2003 Apr;30(2):248-52.

Expression of serotherapy target antigens in Waldenstrom's macroglobulinemia: therapeutic applications and considerations.

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Monoclonal antibody (mAb) therapy (serotherapy) has been successfully used in the treatment of many B-cell malignancies, among them lymphoplasmacytic lymphoma, an uncommon disorder that includes patients with the clinicopathological diagnosis of Waldenstrom's macroglobulinemia (WM). Rituximab, a mAb directed at CD20, was recently demonstrated by us and others to induce remissions and facilitate hematological recovery in patients with WM. The expression of CD20, along with targets of other mAbs which are commercially available, currently in clinical trials, or in preclinical development, have not been extensively studied or well documented in lymphoplasmacytic lymphoma. As such, we examined by flow cytometric analysis tumor cells from a large series of patients with the histopathlogical diagnosis of lymphoplasmacytic lymphoma and the clinicopathological diagnosis of WM for expression of the serotherapy target antigens CD20, CD22, CD40, CD52, IgM, MUC1 core protein, and 1D10. These studies demonstrated antigen expression on >or=50% of bone marrow tumor cells (CD19(+), kappa/lambda light chain-restricted), respectively, from patients as follows: CD20 (98.3%), CD22 (88.3%), CD40 (83.3%), CD52 (77.4%), IgM (83.3%), MUC1 core protein (57.8%), and 1D10 (50%). Both interpatient and intrapatient tumor clone antigen expression was heterogeneous. Combined mAb therapy might be a useful approach to cope with this variation, and could be tailored to target all members of the tumor clone for an individual patient.