Introduction to Lymphoproliferative Disorders in Adults

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The study of lymphocytes as active agents of the immunology system began when the immune system was elucidated in the 1960s. With the advent of immunophenotyping in the 1980s, the possibility of separating lymphoproliferative disorders into subsets became a reality. With the 1999 elucidation of the human genome, it became possible to identify mutational status and prognostic significance for these disorders. With this information, targeted immunotherapy such as rituximab (anti-CD20) became a reality and a new use for an old medication, thalidomide, as an anti-angiogenesis agent also showed significant benefit.

For chronic lymphocytic leukemia, the original diagnostic test were the complete blood count (CBC) and bone marrow examination. Due to the advent of flow cytometry, a bone marrow biopsy and examination are no longer required. Follow up tests now include a serum protein electrophoresis and immunoelectro-phoresis to assess immune function and various molecular tests for specific chromosomal aberrations. For multiple myeloma, the key diagnostic test is most often electrophoresis/immunoelectro-phoresis. Bone marrow biopsy examination is still required to assess tumor burden. In addition the pancytopenia often seen in patients must be evaluated. Flow cytometry is necessary to confirm the monoclonal nature of the plasma cells.

The World Health Organization's classification of leukemias and lymphomas embraced the immunologic nature of these cells and the genomic alterations that can support such conditions. These articles explore the two most common malignant presentations of lymphocytes in adults: chronic lymphocytic leukemia and multiple (plasma cell) myeloma. Long thought to be found only in the elderly, these diseases are being found in younger adults who, in part due to earlier diagnosis, may not have the classical set of signs and symptoms. Correlation with therapeutic choices is just beginning with the advent of immune therapy