Session X: Disease Related Morbidities in

Waldenström's Macroglobulinemia

Abstract 156

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Hyperviscosity Syndrome and Cryoglobulinemia. Marvin J. Stone, Baylor Sammons Cancer Center, Baylor University Medical Center, Dallas, TX, USA.

Hyperviscosity Syndrome (HVS) was described by Jan Waldenström in his original 1944 report of the disease that bears his name. The syndrome commonly consists of mucous membrane bleeding, retinopathy with visual disturbances, and a variety of neurological disorders. By the late 1950s, it was shown that the retinopathy could be reversed by plasmapheresis. IgM in excess of 4 gm/dL causes serum viscosity to rise exponentially. The "symptomatic threshold" tends to be reproducible in the same patient though it varies between patients. Measurement of relative serum viscosity using the Ostwald tube remains a simple and reliable method. During the past six years at the Baylor Sammons Cancer Center, 297/499 (59.5%) of serum viscosity determinations were elevated, mostly in patients with Waldenström's macroglobulinemia (WM). Because HVS can be diagnosed from funduscopic examination and usually is reversible by plasmapheresis, prompt recognition is important for institution of proper therapy. Cryoglobulinemia was first described in a myeloma patient by Maxwell Wintrobe in 1933. Cryoglobulins precipitate or gel at temperatures less than 37° and dissolve on rewarming. Some, but not all, patients have cold sensitivity. Patients with cryoglobulinemia are included in the "IgM-related disorders" classification and may present earlier than typical Waldenström's patients. Most single component cryoglobulins consist of monoclonal immunoglobulin. Cryoprecipitation in these patients is often concentration-dependent. By contrast, multiple component cryos are usually mixed monoclonal IgM-polyclonal IgG with rheumatoid factor activity. The IgM is a monoclonal antibody to the Fc portion of IgG. Primary binding between antigen and antibody exhibits similar thermodynamic values to other antigen-antibody systems. Cryoprecipitation is due to reversible temperative-sensitive insolubility of the immune complex. Thermal amplitude is a key property of mixed cryoglobulins and may correlate more closely clinically than cryocrit. Many patients with mixed cryoglobulinemia have hepatitis C liver disease and viral RNA may be present in the cryo. About 10% develop non-Hodgkin's lymphoma, especially WM. Some cases of lymphoma have regressed with interferon therapy. Of 182 cryoglobulins quantified at Baylor Sammons Cancer Center, 69.8% were mixed IgM-IgG and 19.2% were single component. Cryoglobulinemia dramatically influences serum viscosity. Such patients may present with HVS.