

Chronic immune stimulation and subsequent Waldenström's macroglobulinemia

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Background: There are emerging data to support a role for chronic immune stimulation in the causation of Waldenström's macroglobulinemia (WM); however, available information is sparse. We assessed WM risk in relation to a personal history of a wide range of chronic immune stimulatory conditions among 4 million U.S. veterans.

Methods: We identified 361 WM cases with up to 27 years of follow-up. Using Poisson statistical regression models we estimated rate ratios (RR) and 95% confidence intervals (CI) as measures of WM risk in relation to history of autoimmune diseases that typically have autoantibodies (with systematic or organ involvement) or do not have autoantibodies, infections, and allergies.

Results: We estimated the age-standardized incidence of WM to be 0.34/100,000 person-years. We found elevated WM risk among individuals with any prior autoimmune condition (RR, 2.2; 95% CI, 1.7-3.0), autoantibodies with systemic involvement (RR, 2.50; 95% CI, 1.55-4.02), autoantibodies with organ involvement (RR, 2.30; 95% CI, 1.57-3.37). Risks for WM were also increased with hepatitis (RR, 3.39; 95% CI, 1.38-8.30), human immunodeficiency virus (HIV) (RR, 12.05; 95% CI, 2.83-51.46), and rickettsiosis (RR, 3.35; 95% CI, 1.38-8.14).

Conclusions: In the largest investigation of WM risk factors to date, we found 2- to 3-fold elevated risk of WM among persons with a personal history of autoimmune diseases with autoantibodies and notably elevated risks for hepatitis, HIV, and rickettsiosis. These findings provide novel insights into the as yet unknown etiology of WM. Our ongoing studies in Sweden provide further information on a broad range of immune-related conditions and subsequent risk of developing WM. These results will be presented at the meeting.