BONE MARROW ANGIOGENESIS IN WALDENSTROMS MACROGLOBULINEMIA (WM). S. Vincent Rajkumar, Suzanne R Hayman, and Philip R Greipp. Division of Hematology, Mayo Clinic, Rochester, MN, 55905.

Introduction: Angiogenesis has been associated with disease progression and poor prognosis in certain hematologic malignancies such as multiple myeloma (MM). We studied the prognostic value of angiogenesis, as measured by bone marrow (BM) microvessel density (MVD), in WM.
Materials and Methods: 50 patients (16 females, 34 males with a median age of 69 and range of 46-83) were studied. WM was defined on the basis of clinical presentation, IgM serum M-spike of 1.0 g/dl with a BM lymphoplasmacytoid infiltration of at least 10%. BM microvessels were then identified using immunohistochemical staining for CD34. MVD was estimated by determining the average number of vessels in 3 hot spots (defined as areas with the maximum number of microvessels) examined at 400x magnification. Angiogenesis was also visually graded as low, intermediate, or high.
Results: The mean serum M-spike was 3.2 (SD=1.3). The mean % of BM infiltration was 46 (SD=21.2). Beta-2 microglobulin was measured in 17 patients with a median=4 (range 2-7). Only 1 patient of the 34 patients in whom plasma cell labeling index (PCLI) values were available had a high (>1) PCLI. MVD was significantly higher compared to controls, median 6 versus 2 respectively, P=0.002. Angiogenesis grade was low (70%), intermediate (22%), and high (8%) in patients. Thus, only 30% of patients had increased (intermediate or high-grade) angiogenesis, compared to earlier studies that have shown increased angiogenesis in 64% of patients with MM. Mean MVD showed no significant correlation with β-2 microglobulin, serum M-spike, or age. A weak correlation was found between mean MVD and % BM infiltration (rho=0.41, p=0.005). Median survival of the cohort was 46 months. MVD and angiogenesis grade were not predictive factors for survival. Age was the only variable associated with overall survival ($p<0.001$).
Conclusions: BM MVD in WM is correlated weakly with % BM infiltration, however, it is not increased in most WM patients and does not appear to be a predictor of poor survival.