Survival trends in Waldenström macroglobulinemia: an analysis of the Surveillance, Epidemiology and End Results database

Waldenström’s macroglobulinemia (WM) is a rare indolent B-cell lymphoma. Approximately 1000-1500 new cases of WM are diagnosed every year in the United States. Although previous studies suggested prolonged survival in WM patients, it is unclear whether there have been survival improvements in recent years. Therefore, our objective was to perform a population-based analysis to investigate trends in survival rates of US patients diagnosed with WM. Our study was based on the Surveillance, Epidemiology, and End Results (SEER) database and included patients with WM diagnosed between 1980 and 2010 (n = 7744). We excluded patients younger than age 20 years (n = 9), patients in whom WM was not the first malignancy (n = 1422), and patients diagnosed by autopsy (n = 82). Our analytical cohort included 6231 WM patients. No major differences in patients’ characteristics between the 1980-2000 and 2001-2010 epochs were identified (supplemental Table 1 available on the Blood Web site).

Relative survival (RS) was the end point of interest. RS was defined as the ratio of observed survival divided by the expected survival of the general population in a specified calendar year, and it was estimated by using the Ederer II method. Time period analyses were performed to study trends in 5-year RS according to categorical variables. The 5-year and 10-year RS rates of the cohort were 73% and 57%, respectively. Patients diagnosed during 2001-2010 had higher 5-year (78% vs 67%) and 10-year (66% vs 49%) RS rates than patients diagnosed during 1980-2000. In a multivariate model, older age, male sex, and black race were associated with worse outcomes, and epoch of diagnosis 2000-2010 was associated with better outcomes (supplemental Table 2). There was an improvement in RS observed in the 2001-2005 and 2006-2010 periods (supplemental Figure 1). In the period analysis, there was an increase in 5-year RS rates regardless of age, sex, primary site of involvement, histology, or US region (Figure 1). A Greek study that included 345 patients with WM showed no overall or cause-specific survival improvement in recent years; however, given the small sample size, that study might have been underpowered to detect the expected benefit. Our results are consistent with a Swedish study in 1555 patients with WM diagnosed between 1980 and 2005. Similar to our results, results in that study showed that the 5-year RS rate improved from 57% in 1980-1985 to 78% in 2001-2005.

In our study, there was RS improvement in whites and other races but no improvement was seen in blacks. Blacks have had consistently worse outcomes in previous epidemiological studies of various lymphomas. This disparity in outcomes could be ascribed to socioeconomic (ie, insurance coverage, attitudes toward therapy) and biological factors (ie, blacks have a higher risk of developing immunoglobulin A [IgA] and IgG but lower risk of IgM monoclonal paraproteinemia).

Our study has several limitations such as lack of pathological confirmation, lack of information on relevant laboratory data, and use of chemotherapy and immunotherapy. Despite these limitations, we were able to identify, in the largest population-based study to date, an improvement in RS in patients with WM during the last decade in the United States. We expect further improvements in survival in WM patients.

Jorge J. Castillo
Bing Center for Waldenström’s Macroglobulinemia, Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA

Adam J. Olszewski
Division of Hematology and Oncology, Memorial Hospital of Rhode Island, Pawtucket, RI

Angel M. Cronin
Department of Medical Oncology, Dana-Farber Cancer Institute, Boston, MA

Zachary R. Hunter
Bing Center for Waldenström’s Macroglobulinemia, Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA

Steven P. Treon
Bing Center for Waldenström’s Macroglobulinemia, Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA

The online version of this article contains a data supplement.

Acknowledgments: We acknowledge the efforts of the Applied Research Program, National Cancer Institute, Information Management Services, Inc., and the Surveillance, Epidemiology, and End Results (SEER) program tumor registries in the maintenance of the database as a research resource.

Contribution: J.J.C. designed the research; J.J.C., A.J.O., and A.M.C. performed the research; J.J.C., Z.R.H., and S.P.T. analyzed the data; and J.J.C. drafted the manuscript. All the authors read, critically reviewed, and approved the final manuscript.

Conflict-of-interest disclosure: The authors declare no competing financial interests.

Correspondence: Jorge J. Castillo, Bing Center for Waldenström’s Macroglobulinemia, Dana-Farber Cancer Institute, 450 Brookline Ave, M221, Boston, MA 02215; e-mail: jorgej.castillo@dfci.harvard.edu.

References


4. Cho H, Howlader N, Mariotti AB, Cronin KA. Estimating relative survival for cancer patients from the SEER Program using expected rates based on Ederer I


© 2014 by The American Society of Hematology

Figure 1. Trends in 5-year relative survival of patients with Waldenström’s macroglobulinemia from the SEER database (1980-2010). Data is broken down according to categories of (A) age, (B) sex, (C) race, (D) site of involvement, (E) lymphoma subtype, and (F) region.
Survival trends in Waldenström macroglobulinemia: an analysis of the Surveillance, Epidemiology and End Results database

Jorge J. Castillo, Adam J. Olszewski, Angel M. Cronin, Zachary R. Hunter and Steven P. Treon

Updated information and services can be found at:
http://www.bloodjournal.org/content/123/25/3999.full.html

Articles on similar topics can be found in the following Blood collections
  Clinical Trials and Observations (4640 articles)
  Lymphoid Neoplasia (2650 articles)
  Multiple Myeloma (382 articles)

Information about reproducing this article in parts or in its entirety may be found online at:
http://www.bloodjournal.org/site/misc/rights.xhtml#repub_requests

Information about ordering reprints may be found online at:
http://www.bloodjournal.org/site/misc/rights.xhtml#reprints

Information about subscriptions and ASH membership may be found online at:
http://www.bloodjournal.org/site/subscriptions/index.xhtml