Long-Term Follow-up of Survival in Hodgkin's Lymphoma

TO THE EDITOR: In 1992, the Cancer and Leukemia Group B (CALGB) reported the results of a prospective three-group randomized trial involving 359 patients with Hodgkin's lymphoma. This trial compared the following regimens: doxorubicin, bleomycin, vinblastine, and dacarbazine (ABVD) for 6 to 8 months, mechlorethamine, vincristine, procarbazine, and prednisone (MOPP) for 6 to 8 months, and MOPP alternating with ABVD for 12 months.[1] The trial was limited to patients with advanced disease (clinical stages III and IV). No radiotherapy was administered. The results, published in the *Journal* in 1992, indicated an event-free survival advantage of ABVD over MOPP but no differences in overall survival between the ABVD and MOPP groups. These findings were reemphasized in a follow-up study of the data published in 2002.[2] We report further follow-up data from a median follow-up period of 18.1 years (Fig. 1).

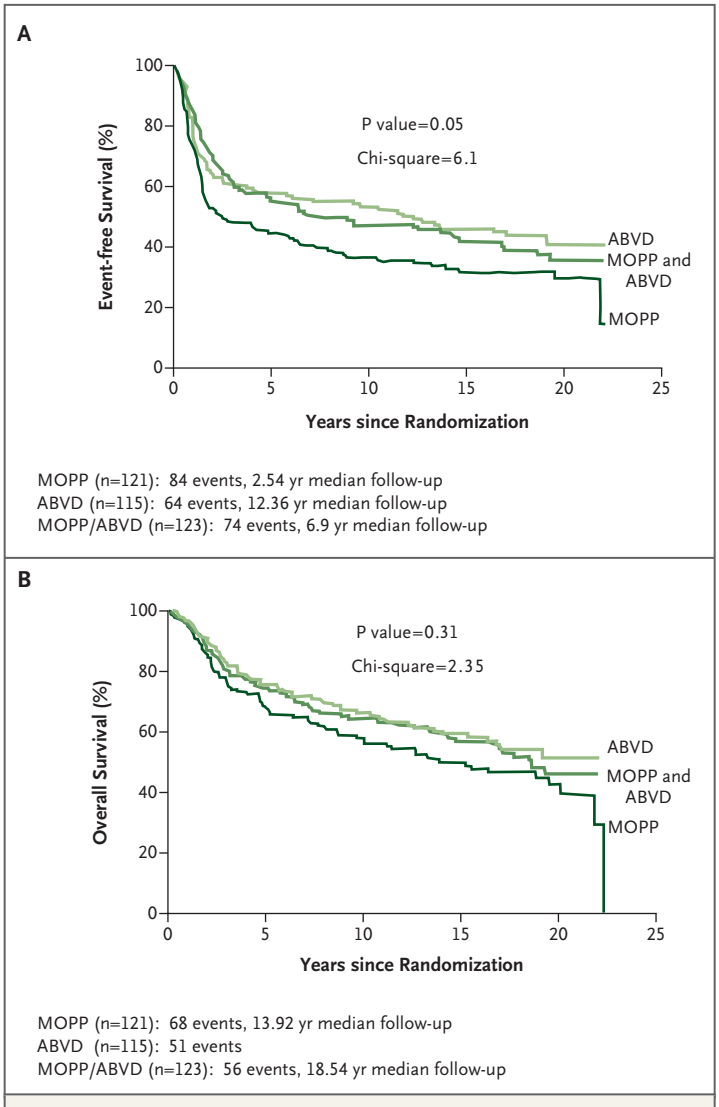

Figure 1. Event-free Survival and Overall Survival in Patients with Hodgkin's Lymphoma, According to Treatment Regimen.

Panel A shows a continued advantage in event-free survival associated with doxorubicin, bleomycin, vinblastine, and dacarbazine (ABVD) as compared with mechlorethamine, vincristine, procarbazine, and prednisone (MOPP) alone or MOPP alternating with ABVD. Panel B shows no statistical difference in overall survival according to treatment.

We analyzed the results from a follow-up period of at least 20 years. The fact that overall survival was still equivalent among the three groups despite a higher failure rate associated with MOPP is a testimony to the effective salvage treatments for Hodgkin's lymphoma. A review of the 12 consecutive series of prospective, randomized therapeutic trials involving a total of 6200 patients with advanced Hodgkin's lymphoma that have been published since 2003 revealed only one trial in which a small statistically significant difference in overall survival was noted.[3] Relatively small but statistically significant differences in event-free survival, if seen, were corrected in terms of overall survival by effective salvage therapy.

Long-term results with the use of ABVD alone in the above-mentioned CALGB trial are often used to compare newer regimens. This comparison is not valid, since the trial began in 1982. The 5- and 10-year rates of both event-free and overall survival have increased from 73.5% and 62.0%, respectively, between 1980 and 1984 and, more recently, from 85.0% and 80.0%, respectively, in the 2000–2004 interval as shown in the Surveillance, Epidemiology, and End Results program.[4]

More intensive and toxic chemotherapy may confer a statistical event-free survival advantage but, unless overall survival is improved, the greater toxicity could compromise quality of life without a survival benefit. However, the identification of high-risk patients on the basis of persistently positive findings on positron-emission tomography

during therapy may warrant an alternative, more intensive, approach.

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1. Canellos GP, Anderson JR, Propert KJ, et al. Chemotherapy of advanced Hodgkin's disease with MOPP, ABVD, or MOPP alternating with ABVD. N Engl J Med 1992;327:1478-84.
2. Canellos GP, Niedzwiecki D. Long-term follow-up of Hodgkin's disease trial. N Engl J Med 2002;346:1417-8.
3. Diehl V, Franklin J, Pfeundschuh M, et al. Standard and increased-dose BEACOPP chemotherapy compared with COPP-ABVD for advanced Hodgkin's disease. N Engl J Med 2003;348:2386-95. [Erratum, N Engl J Med 2005;353:744.]
4. Brenner H, Gondos A, Pulte D. Ongoing improvement in long-term survival of patients with Hodgkin disease at all ages and recent catch-up of older patients. Blood 2008;111:2977-83.

INSTRUCTIONS FOR LETTERS TO THE EDITOR

Letters to the Editor are considered for publication, subject to editing and abridgment, provided they do not contain material that has been submitted or published elsewhere. Please note the following:

- Letters in reference to a *Journal* article must not exceed 175 words (excluding references) and must be received within 3 weeks after publication of the article.
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- A letter can have no more than five references and one figure or table.
- A letter can be signed by no more than three authors.
- Financial associations or other possible conflicts of interest must be disclosed. Disclosures will be published with the letters. (For authors of *Journal* articles who are responding to letters, disclosures appear in the published articles.)
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CORRECTIONS

Intensity of Renal Support in Critically Ill Patients with Acute Kidney Injury (July 3, 2008;359:7-20). In the Results section, under the subheading "Complications of Therapy" (page 13), the percentages in the second sentence (for hypotension reported as a complication of therapy) should have been 17.4% and 17.7%, respectively, rather than 18.5% and 18.9%. These percentages were also reported in Table 6 in the Supplementary Appendix. The article has been corrected and the Supplementary Appendix replaced at NEJM.org.

Case 25-2008: A 43-Year-Old Man with Fatigue and Lesions in the Pituitary and Cerebellum (August 14, 2008;359:736-47). The penultimate sentence of the third paragraph in the "Presentation of Case" section (page 737) should have read, "the angiotensin-converting enzyme level was normal," rather than "the acetylcholinesterase level was normal." The article has been corrected at NEJM.org.

NOTICES

Notices submitted for publication should contain a mailing address and telephone number of a contact person or department. We regret that we are unable to publish all notices received. Notices also appear on the Journal's *Web site (NEJM.org/meetings). The listings can be viewed in their entirety or searched by location, month, or key word.*

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The meeting will be held in Monterey, CA, May 31–June 4. Deadline for submission of abstracts is Dec. 31.

Contact the Brain-Computer Interface Laboratory, Wadsworth Center, New York State Department of Health, P.O. Box 509, Albany, NY 12201-0509; or see http://bcimeeting.org/2010.

HISTORY OF SCIENCE AND MEDICINE

A researcher working on a history of American graduate medical education is seeking diaries, journals, or correspondence written by physicians during their internships and/or residencies about their experiences in U.S. training programs between 1945 and 2003.

Contact Heather Varughese, Program in the History of Science and Medicine, Yale University, 333 Cedar Street, Room L 132, New Haven, CT 06520-8015; or call (203) 785-4338; or e-mail heather.varughese@yale.edu.

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Contact Mayo School of CME, Mayo Clinic, 13400 E. Shea Blvd., Scottsdale, AZ 85259; or call (480) 301-4580; or fax (480) 301-8323.