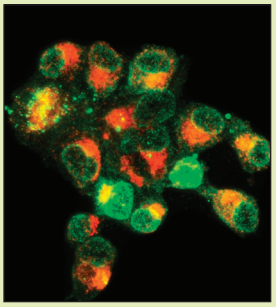
■ Online Exclusive CNE Article

Evidence-Based Guideline Recommendations:
Post-Hematopoietic Stem Cell Transplantation

Mary C. Burkhart, MS, CNP, AOCNP®, John Wade, RN, OCN®, and Virginia Lesperance, MSN



© iStockphoto.com/Thinkstock

Cancer survivorship is expected to increase in coming years. Survivors include recipients of hematopoietic stem cell transplantations, signaling the necessity for evidence-based guidelines that focus on long-term follow-up needs. Studies have shown that evidence-based care can improve cancer survivors' quality of life and long-term outcomes. The implication is that early identification and intervention in chronic health problems such as graft-versus-host disease result in improved outcomes and a higher quality of survivorship. These discoveries signal a need to provide specific care management with appropriate and timely screening and preventive services. Recommendations for long-term follow-up post-hematopoietic stem cell transplantation are an important guide to direct clinical practice with this patient population and optimize their outcomes.

Mary C. Burkhart, MS, CNP, AOCNP®, is a nurse practitioner at the Mayo Clinic in Phoenix, AZ; and John Wade, RN, OCN®, and Virginia Lesperance, MSN, are blood and marrow transplantation coordinators at the Mayo Clinic in Jacksonville, FL. The authors take full responsibility for the content of the article. The authors did not receive honoraria for this work. The content of this article has been reviewed by independent peer reviewers to ensure that it is balanced, objective, and free from commercial bias. No financial relationships relevant to the content of this article have been disclosed by the authors, planners, independent peer reviewers, or editorial staff. Burkhart can be reached at burkhart.mary@mayo.edu, with copy to editor at CJONEditor@ons.org. (Submitted February 2013. Revision submitted March 2013. Accepted for publication March 24, 2013.)

Digital Object Identifier:10.1188/13.CJON.E63-E67

The number of cancer survivors in the United States has exceeded 13 million (Siegel et al., 2012), including post-hematopoietic stem cell transplantation (HSCT) recipients. Allogeneic recipients of HSCT account for about 8,860 of those survivors reported and autologous recipients account for about 9,026 (Pasquini, Wang, Horowitz, & Gale, 2010). As the developments of improved and more targeted treatments are discovered, the number of long-term cancer survivors is expected to increase. Like many cancer survivors, those receiving HSCT have been noted by healthcare providers at some stem cell transplantation centers as being lost to follow-up for various reasons (Majhail et al., 2012). The contributing societal trends identified by Majhail et al. (2012) include an increasingly mobile society, living in healthcare-disparaged locations, and loss of income.

Evidence-based care has been shown to improve the quality of life and long-term outcomes of cancer survivors (Gobel, Beck, & O'Leary, 2006). Principles of ancillary and supportive care studies (i.e., providing interdisciplinary therapies or prescriptive interventions) indicate that early identification and intervention in chronic health problems, such as graft-versus-host disease (GVHD), result in less need for systemic therapy, improved outcomes, and higher quality of survivorship (Carpenter & Couriel, 2009). The reality of those facts supports the need to provide appropriate and timely screening and preventive services to HSCT recipients to optimize their outcomes.

Late Effects

Immune recovery generally occurs gradually during the 12–18 months post-HSCT (Rizzo et al., 2006). Experts agree that good markers for evaluating immune reconstitution include monitoring the CD4 level and the CD4:8 ratio prior to the replacement of immunizations about one year post-HSCT, looking for CD4 greater than 400 as an indication of immune recovery (Rizzo et al., 2006). Late effects and complications can occur in HSCT recipients six months or more after transplantation. After that time, the main complications that remain risks include chronic GVHD, relapsed disease, and infections such as *Pneumocystis jiroveci* pneumonia, varicella zoster virus, cytomegalovirus, and encapsulated bacteria.

Chronic GVHD occurs in 30%–70% of all allogeneic HSCT recipients. Proper treatment of chronic GVHD is associated with a lower relapse rate and mortality (Tomblyn et al., 2009). Conversely, uncontrolled chronic GVHD is associated with increased impairment of health-related quality of life and higher morbidity.

Other late effects after HSCT can be regimen-related toxicity, prolonged immunodeficiency, and bone disease. Possible