Multiple myeloma (MM), a neoplastic proliferation of plasma cells originating from the B-cell line, is associated with deleterious complications and poor outcomes. The failure of conventional combination chemotherapies to improve the overall survival of patients with MM has led to the use of high-dose chemotherapy supported by stem cell transplantation (SCT). Although several novel therapies have emerged since the late 1990s, their survival benefits are undetermined. High-dose chemotherapy with SCT provides better response rates compared to conventional chemotherapy and yields a trend toward greater survival benefits, especially with the use of a tandem (two successive) transplantation strategy. This article discusses standard SCT in patients with MM and some of the new transplantation strategies, including tandem autologous SCTs and reduced-intensity nonmyeloablative allogeneic SCT, and their implications for nursing.

The Role of High-Dose Chemotherapy Supported by Hematopoietic Stem Cell Transplantation in Patients With Multiple Myeloma: Implications for Nursing

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Multiple myeloma is a neoplastic proliferation of plasma cells originating from the B-cell line. An estimated 19,900 new myeloma patients are diagnosed each year in the United States (Siegel et al., 2007). MM is characterized by the accumulation of monoclonal immunoglobulin light chains leading to anemia, hypercalcemia, bone pain, and renal impairment (Gertz, 2004). The optimal treatment for MM remains controversial. In the past, MM was considered an incurable disease, with a median survival of about 3 years. However, with the advent of high-dose chemotherapy and autologous SCT, the survival of patients with MM has improved significantly. In fact, the overall survival of patients with MM has increased from 2.5 to 3 years in the 1970s to 4 to 5 years at present (Barlogie et al., 2004).

In the 1990s, several transplantation-related strategies emerged, including tandem (i.e., two successive) autologous SCTs (ASCTs), autologous followed by allogeneic SCT, nonmyeloablative allogeneic transplantation, and sequential ASCTs followed by nonmyeloablative allogeneic transplantation, all in an effort to improve overall survival (Hari, Pasquini, & Vesole, 2006). Although several novel agents such as thalidomide, bortezomib, and lenalidomide have been shown to improve survival in patients with MM, the impact of these agents on overall survival is unclear (Tariman, 2005).

This article discusses standard SCT in patients with MM and some of the new transplantation strategies, including tandem autologous SCTs and reduced-intensity nonmyeloablative allogeneic SCT, and their implications for nursing.

At a Glance

- Multiple myeloma is associated with deleterious complications and poor outcomes. Patients diagnosed with myeloma tend to be older, with a median age at diagnosis of 66 years.
- Better overall survival has been reported in patients who are aged 60 or younger and treated with tandem autologous stem cell transplantation (SCT).
- Oncology nurses play a key role in ensuring the safety and delivery of high-quality care before, during, and after SCT.

Multiple Myeloma Overview

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