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An Overview of Hematopoietic Stem Cell Transplantation

Carolyn M. Canonica, MMSc, PA-C

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#### ACCEPTED MANUSCRIPT

## An Overview of Hematopoietic Stem Cell Transplantation

Carolyn M. Canonica, MMSc, PA-C
Adult Bone Marrow Transplant Service
Department of Medicine
Memorial Sloan Kettering Cancer Center
1275 York Ave.
New York, NY 10065
canonice@mskcc.org

#### **Contact Information:**

475 Main Street, Apt 16P New York, NY 10044 (516) 524-1539 carolyn.canonica@gmail.com

#### **Disclosure Statement:**

The author has nothing to disclose.

#### **Key Words:**

Bone Marrow Transplantation (BMT), Hematopoietic Stem Cell Transplantation (HSCT), Peripheral Blood Stem Cell Transplantation (PBSCT), Autologous Transplant, Allogeneic Transplant, Complications of Transplant

#### **Key Points:**

- -Outline the stem cell transplantation process, from stem cell collection and pre-transplant conditioning through post-transplant care, with a strong focus on post-transplant complications
- -Describe variables of stem cell transplant, including conditioning regimen, donor type, stem cell source, stem cell product manipulation, and immunosuppressant regimen
- -Introduce common medications used as prophylaxis and treatment in stem cell transplant patients during periods of neutropenia
- -Discuss new areas of research in the stem cell transplant field

#### **Synopsis:**

This article provides an introduction to the field of hematopoietic stem cell transplantation and is aimed at healthcare providers working both within and outside the Oncology realm. I outline the stem cell transplantation process, spanning from pre-transplant stem cell collection, through stem cell infusion and subsequent neutropenic period, to engraftment and the post-transplant clinical course. As the stem cell transplantation process varies based on a myriad of patient-specific factors, I also discuss key transplant variables, including type of donor, stem cell source and product manipulation, infection and immunosuppressant prophylactic regimens, and risk for post-transplant complications. This article concludes with a discussion of transplant complications and ongoing advancements in the field.

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