

Hematopoietic Stem Cell Transplantation

C O N T E M P O R A R Y H E M A T O L O G Y

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Hematopoietic Stem Cell Transplantation

Second Edition

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Cover illustrations: Liver biopsies in an SCT patient (left) and a patient with prior Mylotarg exposure and severe VOD (right). See discussion and complete captions on pp. 468–469.

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Preface

Since the publication of our first edition of *Stem Cell Transplantation for Hematologic Malignancies, Second Edition*, in 2004, the field of transplantation has witnessed continued advances in the understanding of basic transplantation biology and its clinical applications. These advances have created opportunities to address the formidable challenges of transplantation across histocompatibility barriers, stem cell expansion, prevention of complications (e.g., infection, organ damage, graft-versus-host disease) and generation of graft-versus-tumor activity to eradicate residual disease. Transplant physicians, caregivers and patients have more therapeutic options than they did just a decade ago in areas such as donor selection, stem cell source, graft manipulation, GVH prophylaxis, infectious prophylaxis and non transplant treatment options. These require a rigorous ongoing reassessment of the status of the field.

I am delighted that we have been able to expand and update this new edition to reflect the current state of the science. Nine new chapters have been added. Part I introduces the biologic underpinnings of hematopoietic cell transplantation, and includes newly added chapters on basic stem cell biology, immunobiology and histocompatibility. Part II focuses on indications and results of transplantation for specific diseases with the intention of placing the current role of transplantation into perspective as new non transplant therapies are developed. In addition to updating chapters on acute leukemia, chronic myelogenous leukemia, lymphoma, and myeloma, this edition includes new contributions on transplantation for myeloproliferative disorders/myelodysplastic syndrome, chronic lymphocytic leukemia, bone marrow failure syndromes and hemoglobinopathies. Part III discusses hematopoietic stem cell sources, and includes chapters on unrelated, haploidentical, and umbilical cord blood transplantation, as well as a chapter comparing the use of bone marrow to mobilized peripheral blood. Part IV is devoted to conditioning regimens, and includes a new contribution on ablative regimens, as well as an update on the expanding use of reducing intensity conditioning. Despite improvements in outcome, the morbidity and mortality of transplantation remain significant. Parts V and VI focus on delayed immune reconstitution leading to infectious and lymphoproliferative disorders, lung and hepatic damage, as well as the pathophysiology and clinical aspects of acute and chronic graft-versus-host disease. Part VII is devoted to immune modulation of grafts, including T cell depletion to reduce GVHD, tumor cell purging to prevent disease recurrence, and donor lymphocyte

infusions to promote immune mediated antitumor activity. Part VIII provides a brief glimpse into potential future applications of bone marrow-derived stem cells in the field of cardiac repair.

We hope this edition of *Stem Cell Transplantation for Hematologic Disorders, Second Edition*, will provide physicians, students and other health care professionals with a firm foundation and comprehensive understanding of the current state of transplantation biology, as well as a clear vision into the future. I am grateful to all the authors for their outstanding contributions to this edition.

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