

COMMENT



Hematopoietic stem cell transplantation and cellular therapies for autoimmune diseases (Taylor & Francis eBooks, ISBN 9781138558557, 2021, 686 Pages; Richard Burt, Dominique Farge, Riccardo Saccardi, Milton Ruiz and John Snowden, editors)

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Over the past 25 years, the utilization of hematopoietic stem cell transplantation (HSCT) specifically for the treatment of autoimmune diseases has gradually evolved from an initial state of 'salvage therapy' for severely affected patients towards a 'standard procedure' for selected patients in the major indications multiple sclerosis (MS) and systemic sclerosis (SSc). The recently published book entitled 'Hematopoietic Stem Cell Transplantation and Cellular Therapies for Autoimmune Diseases' now summarizes all recent developments and achievements in the area and provides the evidence and state-of-the-art of HSCT and emerging cellular therapies. The selected topics comprehensively highlight all relevant aspects of the procedures. The book was developed under the direction of Richard Burt from the Northwestern University, Chicago, one of pioneers and most eminent leaders in the field, in collaboration with the co-editors Dominique Farge, Milton A Ruiz, Riccardo Saccardi and John A Snowden. The book will attract a broad readership, particularly clinical scientists, clinicians and fellows dedicated to HSCT, both from a hematologic or autoimmune disease perspective.

The first part of the book is devoted to the pathophysiology of ADs, and the scientific rationale and general concepts of the different cellular therapies, including HSCT, while the second part explores in detail the indications and results of these treatments for each disease. Initially, a comprehensive coverage of the immunopathology of autoimmune diseases and biology of stem cells is provided, including preclinical research and the potential mode of action underlying HSCT and cellular-based strategies in this context. A major part of the book also focuses on different types of stem cells and immune cells, principles of cell regulation, microbiome profile and post-transplant immune reconstitution.

The book covers all relevant indications and results providing the evidence base for HSCT, most often autologous, rarely allogeneic, in major disease indications, including MS and SSc, where HSCT has become an integral and standard-of-care part of treatment algorithms, along with Crohn's diseases. Other chapters

focus on a wide range of additional disease indications: further rheumatologic indications (systemic lupus erythematosus, juvenile idiopathic arthritis, rheumatoid arthritis, Behçet's syndrome), further neurologic indications (chronic inflammatory demyelinating polyradiculoneuropathy, neuromyelitis optica, myasthenia gravis, Stiff Person spectrum disorder), dermatological diseases (psoriasis and pemphigus vulgaris), and other rarer indications, such as autoimmune type 1 diabetes, celiac disease or psychiatric disorders. A section is also dedicated to allogeneic HSCT, covering HLA-typing, graft-versus-host disease, monogenic autoimmune disorders, and immune mediated aplastic anemia.

Transplant techniques, collection and storage of cells, conditioning protocols, infections, early and late complications are widely covered in the relevant chapters. The advantages of HSCT over conventional therapies are thoroughly described. The references that accompany each chapter are current for the most part. More recent developments like advanced cellular therapies, including mesenchymal stem cells (MSC) and innovative strategies (i.e., regulatory T-cells, chimeric antigen receptor T-cells, neural stem cells), have their own chapters, stimulating investigative efforts. Additional chapters focus on international registries and regulatory issues, including ethical and economic aspects of the procedures.

Overall, this book summarizes all relevant milestones in the field, extensively covering HSCT and cellular therapies in ADs, a field characterized by ongoing progress. It reflects on the dramatic developments and achievements of cellular therapies in recent years, along the dynamics of modern biologic and targeted therapies for ADs. The book is a valuable reading, serving as an ideal manual of good practices for hematologists, disease specialists, as well as researchers and young physicians. Finally, the book acknowledges the contributions and efforts of individual experts and personalities, first and foremost Richard Burt, all the co-editors and the authors of the book, to whom we bow for this work.

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DATA AVAILABILITY

This comment is a book review for the textbook 'Hematopoietic Stem Cell Transplantation and Cellular Therapies for Autoimmune Diseases' (Taylor & Francis eBooks, ISBN 9781138558557, 2021, 686 Pages; Richard Burt, Dominique Farge, Riccardo Saccardi, Milton Ruiz and John Snowden, editors).

AUTHOR CONTRIBUTIONS

RG and TA were involved in writing the comment, revising it critically, and approval of the submitted and final versions. The authors contribute this comment on behalf of Autoimmune Diseases Working Party (ADWP) of the European Society for Blood and Marrow Transplantation (EBMT) (<https://www.ebmt.org/working-parties/autoimmune-diseases-working-party-adwp>).

COMPETING INTERESTS

RG discloses speaking honoraria from educational events supported by Biotest, Pfizer, Medac and Magenta. TA declares speaking honoraria from Amgen, Roche, Pfizer, travel grants from Neovii, and study support from Amgen, Janssen-Cilag and Miltenyi Biotec.

ADDITIONAL INFORMATION

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