

allogeneic vs autologous cell therapy

Allogeneic vs Autologous Cell Therapy: A Critical Analysis of Current Trends

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Abstract (Summary)

This critical analysis explores the key differences and current trends in allogeneic vs autologous cell therapy, focusing on their respective advantages and disadvantages across various applications, particularly in oncology. We examine the manufacturing complexities, clinical efficacy, cost-effectiveness, and regulatory hurdles associated with each approach. The analysis highlights the growing dominance of allogeneic cell therapy, driven by its potential for scalability and off-the-shelf availability, yet also acknowledges the persistent challenges related to immune rejection and manufacturing consistency. The future direction of the field, emphasizing personalized allogeneic strategies and innovative manufacturing technologies, is also discussed.

1. Introduction: The Rise of Cell Therapy

Cell therapy, a powerful modality harnessing the body's own cells or engineered cells to treat disease, is rapidly transforming healthcare. Two distinct approaches dominate the field: autologous and allogeneic cell therapy. Allogeneic vs autologous cell therapy represents a fundamental dichotomy influencing clinical translation, cost, and accessibility.

2. Autologous Cell Therapy: A Personalized Approach

Autologous cell therapy utilizes cells harvested directly from the patient. This personalized approach minimizes the risk of immune rejection, a major concern in allogeneic therapies. The most prominent example is autologous CAR T-cell therapy, where a patient's own T cells are genetically engineered to target cancer cells. While highly effective in certain hematological malignancies, autologous approaches face significant limitations:

Long Manufacturing Time: The lengthy process of cell collection, expansion, and genetic modification results in considerable delays in treatment initiation, potentially impacting patient outcomes.

High Cost: The personalized nature of autologous therapies translates to high manufacturing costs, restricting access for many patients.

Patient-Specific Variability: The quality and quantity of cells harvested can vary significantly between patients, affecting treatment efficacy and reproducibility.

3. Allogeneic Cell Therapy: An Off-the-Shelf Solution

In contrast, allogeneic vs autologous cell therapy highlights the key differences. Allogeneic cell therapy uses cells from a donor, offering a potential "off-the-shelf" solution. This approach promises several advantages:

Reduced Manufacturing Time: Pre-manufactured allogeneic cell products significantly shorten treatment timelines.

Lower Cost: Mass production potentially reduces the cost per treatment, making it more accessible.

Scalability: Allogeneic cell therapies can be produced at larger scales, addressing the limitations inherent in autologous approaches.

However, allogeneic therapies face their own challenges:

Immune Rejection: The primary hurdle is the risk of graft-versus-host disease (GvHD), where the donor cells attack the recipient's tissues. Innovative strategies, such as immune suppression and genetic engineering to reduce immunogenicity, are actively being explored to mitigate this risk.

Manufacturing Consistency: Ensuring consistent quality and potency across multiple batches of allogeneic products remains a crucial manufacturing challenge.

HLA Matching: Finding suitable HLA-matched donors can be challenging, limiting the applicability of certain allogeneic cell therapies.

4. Allogeneic vs Autologous Cell Therapy in Oncology

The contrast between allogeneic vs autologous cell therapy is particularly pronounced in oncology. Autologous CAR T-cell therapy has demonstrated remarkable efficacy in treating certain types of leukemia and lymphoma. However, its limitations—cost, lengthy manufacturing time, and patient selection criteria—have spurred significant interest in allogeneic alternatives. Allogeneic CAR T-cell therapies are undergoing rigorous clinical evaluation, aiming to provide an off-the-shelf option with potentially broader applicability. However, challenges related to immune rejection and the development of effective strategies to prevent GvHD remain critical areas of research.

5. Beyond CAR T Cells: Expanding Applications

The comparison of allogeneic vs autologous cell therapy extends beyond CAR T cells. Both approaches are being explored in various therapeutic areas, including regenerative medicine, autoimmune diseases, and cardiovascular disease. Allogeneic stem cell therapies are already established treatments for certain conditions, showcasing the potential of this approach for broader clinical application.

6. Regulatory Landscape and Future Directions

The regulatory pathways for allogeneic and autologous cell therapies differ significantly, reflecting the inherent differences in manufacturing and clinical risks. The development of robust manufacturing processes, standardized quality control measures, and appropriate clinical trial designs are crucial for the successful translation of both approaches.

The future of cell therapy likely involves a convergence of autologous and allogeneic strategies. Personalized allogeneic approaches, leveraging advanced gene editing technologies to create "universal" donor cells that are less immunogenic, hold significant promise. Innovative manufacturing technologies, such as automated cell processing and closed-system platforms, will play a vital role in overcoming current challenges and realizing the full potential of both autologous and allogeneic therapies.

7. Conclusion

The choice between allogeneic and autologous cell therapy depends on several factors, including disease type, patient characteristics, available resources, and the overall therapeutic goal. While autologous approaches offer personalized treatment with potentially higher efficacy in some cases, their limitations in terms of cost, manufacturing time, and accessibility drive the growing interest in allogeneic therapies. The future success of cell therapy relies heavily on overcoming the manufacturing challenges and immunogenicity issues associated with allogeneic approaches, while simultaneously improving the efficiency and affordability of autologous strategies. A balanced approach, incorporating both personalized and off-the-shelf options, is likely to characterize the landscape of cell therapy in the coming years.

FAQs

1. What is the main difference between allogeneic and autologous cell therapy?
Autologous uses the patient's own cells, while allogeneic uses cells from a donor.
1. Which approach is more expensive: allogeneic or autologous? Currently, autologous therapies are generally more expensive due to the personalized manufacturing process.

1. Which approach has a shorter treatment timeline? Allogeneic therapies typically have shorter timelines because the cells are pre-manufactured.
1. What is the risk of immune rejection in allogeneic cell therapy? The risk of graft-versus-host disease (GvHD) is a significant concern in allogeneic therapies.
1. Are allogeneic therapies truly "off-the-shelf"? While aiming for off-the-shelf availability, current allogeneic therapies still require careful donor selection and quality control.
1. Which approach is better for treating cancer? The optimal approach depends on the specific cancer type and patient characteristics. Both autologous and allogeneic therapies show promise.
1. What are the current limitations of allogeneic cell therapy manufacturing? Challenges include ensuring consistent product quality, managing immunogenicity, and scaling up production.
1. What are the advantages of autologous cell therapy? Reduced risk of immune rejection and potential for higher efficacy in some cases.
1. What are some future directions in allogeneic vs autologous cell therapy research? Research focuses on reducing immunogenicity in allogeneic therapies, improving manufacturing efficiency in both approaches, and developing personalized allogeneic strategies.

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allogeneic vs autologous cell therapy: Translational Regenerative Medicine Anthony Atala, Julie Allickson, 2014-12-01 Translational Regenerative Medicine is a reference book that outlines the life cycle for effective implementation of discoveries in the dynamic field of regenerative medicine. By addressing science, technology, development, regulatory, manufacturing, intellectual property, investment, financial, and clinical aspects of the field, this work takes a holistic look at the translation of science and disseminates knowledge for practical use of regenerative medicine tools, therapeutics, and diagnostics. Incorporating contributions from leaders in the fields of translational science across academia, industry, and government, this book establishes a more fluid transition for rapid translation of research to enhance human health and well-being. - Provides formulaic coverage of the landscape, process development, manufacturing, challenges, evaluation, and regulatory aspects of the most promising regenerative medicine clinical applications - Covers clinical aspects of regenerative medicine related to skin, cartilage, tendons, ligaments, joints, bone, fat, muscle,

vascular system, hematopoietic /immune system, peripheral nerve, central nervous system, endocrine system, ophthalmic system, auditory system, oral system, respiratory system, cardiac system, renal system, hepatic system, gastrointestinal system, genitourinary system - Identifies effective, proven tools and metrics to identify and pursue clinical and commercial regenerative medicine

allogeneic vs autologous cell therapy: Hematopoietic Stem Cell Transplantation in Clinical Practice Jennifer G. Treleaven, A. John Barrett, 2008-09-02 A guide to the practice of stem cell transplantation, its status in the treatment of various disorders and the problems that arise after transplantation, aimed at the whole transplant team. - An up to date guide to best practice in the use of stem cell transplantation, covering current status in the treatment of malignant and non-malignant conditions, practical aspects and problems such as infection and graft versus host disease. - Has a practical, accessible approach with free use of algorithms, list tables. - Aimed at the whole transplant team - this is an interdisciplinary field. - International contributor team with editors in the UK and USA. - Illustrated in colour throughout.

allogeneic vs autologous cell therapy: Chronic Graft Versus Host Disease Georgia B. Vogelsang, Steven Z. Pavletic, 2009-04-20 Chronic graft versus host disease (GVHD) is the most common complication of allogeneic bone marrow transplantation. Because of the protracted clinical course of chronic GVHD, transplant centers and hematology/oncology offices are inadequately equipped to manage these immuno-incompetent patients with a multi-system disorder. Practitioners need to be able to recognize and effectively manage chronic GVHD as a late effect of more than half of allogeneic transplantations. The text is oriented for the clinician, with chapters covering staging, organ site and system-specific manifestations, treatment options, and supportive care. Drs Georgia B. Vogelsang and Steven Z. Pavletic have been pioneers in the recognition of the multi-organ complexity of this disease and have gathered the input of a variety of subspecialist physicians for this book. This book fills the gap in practical literature on chronic GVHD, providing a comprehensive, up-to-date, and clinically relevant resource for anyone who deals with cancer patients post-transplant.

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allogeneic vs autologous cell therapy: Immune Biology of Allogeneic Hematopoietic Stem Cell Transplantation Gerard Socie, Robert Zeiser, Bruce R. Blazar, 2018-11-22 Immune Biology of Allogeneic Hematopoietic Stem Cell Transplantation: Models in Discovery and Translation, Second Edition once again provides clinical and scientific researchers with a deep understanding of the current research in this field and the implications for translational practice. By providing an overview of the immune biology of HSCT, an explanation of immune rejection, and detail on antigens and their role in HSCT success, this book embraces biologists and clinicians who need a broad view

of the deeply complex processes involved. It then moves on to discuss the immunobiology mechanisms that influence graft-versus-host disease (GVHD), graft-versus-leukemia effect, and transplantation success. Using illustrative figures, highlighting key issues, describing recent successes, and discussing unanswered questions, this book sums up the current state of HSCT to enhance the prospects for the future. The second edition is fully revised and includes new chapters on microbiome, metabolism, kinase targets, micro-RNA and mRNA regulatory mechanisms, signaling pathways in GVHD, innate lymphoid system development, recovery and function in GVHD, genetically engineered T-cell therapies, immune system engagers for GVHD and graft-versus-tumor, and hematopoietic cell transplant for tolerance induction in solid organ grafts. - Brings together perspectives from leading laboratories and clinical research groups to highlight advances from bench to the bedside - Guides readers through the caveats that must be considered when drawing conclusions from studies with animal models before correlating to clinical allogeneic hematopoietic stem cell transplantation (HSCT) scenarios - Categorizes the published advances in various aspects of immune biology of allogeneic HSCT to illustrate opportunities for clinical applications

allogeneic vs autologous cell therapy: Stem Cells Mariusz Z. Ratajczak, 2020-01-02 Since different types of stem cells for therapeutic applications have recently been proposed, this timely volume explores various sources of stem cells for tissue and organ regeneration and discusses their advantages and limitations. Also discussed are pros and cons for using embryonic stem cells, induced pluripotent stem cells, and adult stem cells isolated from postnatal tissues. Different types of adult stem cells for therapeutic applications are also reviewed, including hematopoietic stem cells, epidermal stem cells, endothelial progenitors, neural stem cells, mesenchymal stem cells, and very small embryonic-like stem cells. This book also addresses paracrine effects of stem cells in regenerative medicine that are mediated by extracellular microvesicles and soluble secretome. Finally, potential applications of stem cells in cardiology, gastroenterology, neurology, immunotherapy, and aging are presented. This is an ideal book for students and researchers working in the stem cell research field.

allogeneic vs autologous cell therapy: Stem Cells and the Future of Regenerative Medicine Institute of Medicine, Board on Neuroscience and Behavioral Health, National Research Council, Division on Earth and Life Studies, Board on Life Sciences, Committee on the Biological and Biomedical Applications of Stem Cell Research, 2002-01-25 Recent scientific breakthroughs, celebrity patient advocates, and conflicting religious beliefs have come together to bring the state of stem cell research—specifically embryonic stem cell research—into the political crosshairs. President Bush's watershed policy statement allows federal funding for embryonic stem cell research but only on a limited number of stem cell lines. Millions of Americans could be affected by the continuing political debate among policymakers and the public. *Stem Cells and the Future of Regenerative Medicine* provides a deeper exploration of the biological, ethical, and funding questions prompted by the therapeutic potential of undifferentiated human cells. In terms accessible to lay readers, the book summarizes what we know about adult and embryonic stem cells and discusses how to go about the transition from mouse studies to research that has therapeutic implications for people. Perhaps most important, *Stem Cells and the Future of Regenerative Medicine* also provides an overview of the moral and ethical problems that arise from the use of embryonic stem cells. This timely book compares the impact of public and private research funding and discusses approaches to appropriate research oversight. Based on the insights of leading scientists, ethicists, and other authorities, the book offers authoritative recommendations regarding the use of existing stem cell lines versus new lines in research, the important role of the federal government in this field of research, and other fundamental issues.

allogeneic vs autologous cell therapy: Human Pluripotent Stem Cells Philip H. Schwartz, Robin L. Wesselschmidt, 2011-08-09 Almost daily, new technologies are being presented that move the field of human pluripotent stem cell research towards a future that may yield highly-effective, personalized medical treatments. Three enabling technologies at hand for human PSCs are 1) directed reprogramming of somatic cells, which eliminate many of the ethical issues associated with

the derivation and use of human PSCs, increase genetic diversity of the available human PSC lines, and give rise to better in vitro human disease models; 2) the discovery that a Rho-associated protein Kinase (ROCK) inhibitor allows for efficient single cell passaging and cryopreservation, increasing the efficiency and reliability of hPSC culture; and 3) defined, animal-component-free media, which lay the groundwork for simplified scale-up for therapeutic applications, differentiation protocols, and toxicology screens. The aforementioned technologies can be found in *Human Pluripotent Stem Cells: Methods and Protocols*, a compilation of 33 detailed protocols in six categories of PSC research that cover laboratory essentials and the derivation of new PSC lines, including induced PSC lines, as well as their growth, maintenance, characterization, genetic manipulation, and differentiation. Written in the successful *Methods in Molecular Biology*TM series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible protocols, and notes on troubleshooting and avoiding known pitfalls. Authoritative and accessible, *Human Pluripotent Stem Cells: Methods and Protocols* serves as an ideal guide to scientists conducting their own pluripotent cell research programs and makes great strides towards furthering human knowledge and, ultimately, improving the human condition.

allogeneic vs autologous cell therapy: Tissue Engineering and Regenerative Medicine

Phuc Van Pham, 2019-08-14 This new series, based on a bi-annual conference and its topics, represents a major contribution to the emerging science of cancer research and regenerative medicine. Each volume brings together some of the most pre-eminent scientists working on cancer biology, cancer treatment, cancer diagnosis, cancer prevention and regenerative medicine to share information on currently ongoing work which will help shape future therapies. These volumes are invaluable resources not only for already active researchers or clinicians but also for those entering these fields, plus those in industry. *Tissue Engineering and Regenerative Medicine* is a proceedings volume which reflects papers presented at the 3rd bi-annual *Innovations in Regenerative Medicine and Cancer Research* conference; taken with its companion volume *Stem Cells: Biology and Engineering* it provides a complete overview of the papers from that meeting of international experts.

allogeneic vs autologous cell therapy: Cellular Transplantation

Craig Halberstadt, Dwaine F. Emerich, 2011-10-10 There have been tremendous strides in cellular transplantation in recent years, leading to accepted practice for the treatment of certain diseases, and use for many others in trial phases. The long history of cellular transplantation, or the transfer of cells from one organism or region of the body to another, has been revolutionized by advances in stem cell research, as well as developments in gene therapy. *Cellular Transplants: From Lab to Clinic* provides a thorough foundation of the basic science underpinning this exciting field, expert overviews of the state-of-the-art, and detailed description of clinical success stories to date, as well as insights into the road ahead. As highlighted by this timely and authoritative survey, scale-up technologies and whole organ transplantation are among the hurdles representing the next frontier. The contents are organized into four main sections, with the first covering basic biology, including transplant immunology, the use of immunosuppressive drugs, stem cell biology, and the development of donor animals for transplantation. The next part looks at peripheral and reconstructive applications, followed by a section devoted to transplantation for diseases of the central nervous system. The last part presents efforts to address the key challenges ahead, such as identifying novel transplantable cells and integrating biomaterials and nanotechnology with cell matrices. - Provides detailed description of clinical trials in cell transplantation - Review of current therapeutic approaches - Coverage of the broad range of diseases addressed by cell therapeutics - Discussion of stem cell biology and its role in transplantation

allogeneic vs autologous cell therapy: Hematopoietic Stem Cell Therapy

Edward David Ball, Ping Law, 2000 This book will be the only current practical guide to a widely used procedure for treating leukemias and disseminated cancers. The contents are organized chronologically, to serve as a step-by-step guide throughout the transplant process. Comprehensive yet concise, it emphasizes the latest techniques, such as peripheral blood stem cell grafts.

allogeneic vs autologous cell therapy: Hematology Ronald Hoffman, 2005

allogeneic vs autologous cell therapy: *Moving Towards Allogeneic Cellular Therapies: Opportunities and Challenges* Federico Simonetta, Alice Bertaina, Peter Bader, 2022-08-09

allogeneic vs autologous cell therapy: Cellular Therapy Ellen M. Areman, Kathy Loper, 2009

allogeneic vs autologous cell therapy: Cord Blood Transplantations Mitchell Horwitz, Nelson Chao, 2017-07-21 In this book, experts in the field express their well-reasoned opinions on a spectrum of important and complex issues in the area of cord blood transplantation. The aim is to provide practicing hematologists, including hematopoietic transplant physicians, with clinically relevant and immediately applicable information that will assist in the delivery of optimal care. The book opens by offering a historical perspective and examining current concepts and practices in cord blood banking. Sections are then devoted to strategies for cord blood graft selection and to areas of consensus and controversy in cord blood transplantation for neoplastic diseases - and nonmalignant - in children and adults. Attention is drawn to the implications of high-impact clinical trials whenever such trials are available. The readily intelligible text is complemented by numerous helpful tables, algorithms, and figures. This book will appeal to all residents, fellows, and faculty members responsible for the care of hematopoietic cell transplant patients and will offer a robust, engaging tool to aid vital activities in the daily work of every hematology and oncology trainee.

allogeneic vs autologous cell therapy: Stem Cell Therapies Adam C. Berger, Sarah H. Beachy, Board on Health Sciences Policy, Steve Olson, Board on Life Sciences, Division on Earth and Life Sciences, Institute of Medicine, National Academy of Sciences, 2014-06-18 Stem cells offer tremendous promise for advancing health and medicine. Whether being used to replace damaged cells and organs or else by supporting the body's intrinsic repair mechanisms, stem cells hold the potential to treat such debilitating conditions as Parkinson's disease, diabetes, and spinal cord injury. Clinical trials of stem cell treatments are under way in countries around the world, but the evidence base to support the medical use of stem cells remains limited. Despite this paucity of clinical evidence, consumer demand for treatments using stem cells has risen, driven in part by a lack of available treatment options for debilitating diseases as well as direct-to-consumer advertising and public portrayals of stem cell-based treatments. Clinics that offer stem cell therapies for a wide range of diseases and conditions have been established throughout the world, both in newly industrialized countries such as China, India, and Mexico and in developed countries such as the United States and various European nations. Though these therapies are often promoted as being established and effective, they generally have not received stringent regulatory oversight and have not been tested with rigorous trials designed to determine their safety and likely benefits. In the absence of substantiated claims, the potential for harm to patients - as well as to the field of stem cell research in general - may outweigh the potential benefits. To explore these issues, the Institute of Medicine, the National Academy of Sciences, and the International Society for Stem Cell Research held a workshop in November 2013. *Stem Cell Therapies* summarizes the workshop. Researchers, clinicians, patients, policy makers, and others from North America, Europe, and Asia met to examine the global pattern of treatments and products being offered, the range of patient experiences, and options to maximize the well-being of patients, either by protecting them from treatments that are dangerous or ineffective or by steering them toward treatments that are effective. This report discusses the current environment in which patients are receiving unregulated stem cell offerings, focusing on the treatments being offered and their risks and benefits. The report considers the evidence base for clinical application of stem cell technologies and ways to assure the quality of stem cell offerings.

Additional Resources

Allogeneic Stem Cell Transplant: Procedure & Recovery - Cleveland Clinic

Mar 24, 2025 · An allogeneic stem cell transplant is treatment for certain blood cancers and blood disorders. It uses donated healthy stem cells to replace unhealthy stem cells.

Allogeneic stem cell transplant - Type - Mayo Clinic

Jan 31, 2025 · An allogeneic stem cell transplant uses healthy blood stem cells from a donor to replace bone marrow that's not producing enough healthy blood cells. An allogeneic stem cell ...

Allogeneic vs. Autologous Stem Cell Transplant: What Is the ...

May 14, 2021 · There are two types of stem cell transplants used to treat leukemia, allogeneic and autologous. In an allogeneic stem cell transplant, stem cells come from a donor. In an ...

ALLOGENEIC Definition & Meaning - Merriam-Webster

The meaning of ALLOGENEIC is involving, derived from, or being individuals of the same species that are sufficiently unlike genetically to interact antigenically. How to use allogeneic in a ...

Allotransplantation - Wikipedia

Allotransplant (allo- meaning "other" in Greek) is the transplantation of cells, tissues, or organs to a recipient from a genetically non-identical donor of the same species. [1] . The transplant is ...

Allogeneic Stem Cell Transplant: A Guide for Patients

Sep 3, 2024 · Understanding Your Allogeneic Stem Cell Transplant. When you have an allogeneic stem cell transplant, stem cells are harvested (collected) from a donor. "Allogeneic" means ...

Types of Stem Cell and Bone Marrow Transplants

Learn more about different types of stem cell transplants, including autologous and allogeneic transplants, and the pros and cons of each.

Autologous vs. Allogeneic Stem Cell Transplants: What's the ...

Mar 6, 2017 · Autologous vs. Allogeneic Stem Cell Transplants: What's the Difference? An autologous transplant uses a person's own stem cells. An allogeneic transplant uses stem ...

Stem Cell Transplantation | Allogeneic Stem Cell Transplantation ...

Allogeneic SCT is often used to treat blood cancers such as leukemia, myelodysplastic syndromes and myeloproliferative neoplasms. Once it is determined that allogeneic SCT is a ...

Allogeneic | definition of allogeneic by Medical dictionary

allogeneic adjective Referring to genetic differences among individuals of the same species. Two or more individuals are said to be allogeneic when the genes at one or more loci are not ...

Regulatory Considerations for Human Cells, Tissues, and ...

This document was updated December 2017 to correct language to remove references to autologous and non-autologous (allogeneic) products in section V.B. (Compliance and ...

Similar Effect of Autologous and Allogeneic Cell Therapy for ...

Jansen of Lorkeers et al Autologous vs Allogeneic Cell Therapy 81 To help inform the design of future clinical trials, we set out to establish whether, in large animal models, allogeneic cell ...

Chimeric antigen receptor-T cell therapy manufacturing: ...

Changes in the way that CAR-T cell therapies are produced and delivered will have an impact on the overall COG. With allogeneic production, many doses are produced from each donor, ...

Allogeneic CAR T Cells: An Alternative to Overcome

Challenges of CAR T Cell Therapy in Glioblastoma. Front. Immunol. 12:640082. doi: 10.3389/fimmu.2021.640082 Allogeneic CAR T Cells: An Alternative to Overcome ...

Overview - Dana-Farber/Harvard Cancer Center

- Variations needed in this language will be to differentiate autologous vs allogeneic and stem cell vs mononuclear cell collections and whether if on a trial the IND holder has different time ...

Regulatory considerations for developing a phase I ...

manufacturing, handling, delivery, shipping, and storage of the cell therapy product will help ease the path to market approval and also reduce manufacturing expenses in the long run. The ...

Allogeneic Vs Autologous Cell Therapy (Download Only)

Allogeneic Vs Autologous Cell Therapy Book Review: Unveiling the Power of Words In a global driven by information and connectivity, the ability of words has be more evident than ever. ...

Considerations for the Development of Chimeric Antigen ...

Chimeric antigen receptor (CAR) T cell products are human gene therapy. 1. products in which the ... to autologous or allogeneic CAR T cell products are noted in this guidance. This ...

CIRCULAR OF INFORMATION - AABB

Cellular therapy products described in this Circular have been col-lected from human donors for autologous or allogeneic administra-tion. Autologous HPC collection usually occurs after ...

Autologous, allogeneic hematopoietic cell - Semantic Scholar

Autologous, allogeneic hematopoietic cell transplantation and CAR-T/NK therapy: what is their real importance in PTCL? Samuel C. F. Couto^{1,2 †}, Ariel Kowes², Camila S. Aurabi², Theo G. ...

Autologous Stem Cell Transplantation (ASCT) 101

Autologous Stem Cell Transplantation (ASCT) 101 April 24, 2024 What is an Autologous Stem Cell Transplantation and Why is it a Part of Treatment for Myeloma? Types of Stem Cell ...

Hematopoietic Cell Transplantation as Treatment for Blood ...

4 History of HCT Thomas E et al. N Engl J Med.1957;257:491-496. Types of HCT – Autologous vs Allogeneic Appelbaum F. N Engl J Med. 2007;357:1472-1475. Distinct Therapies: 1. ...

AUTOLOGOUS STEM CELL TRANSPLANTS IN AL AMYLOIDOSIS

Allogeneic means “from another person.” This is because allogeneic transplants involve stem cells donated by another person. Autologous means “from the same person.” During an autologous ...

Clinical manufacturing of CAR T cells: foundation of a ...

As a mostly autologous cell-based therapy, the CAR-T cell- manufacturing process starts from the collection of peripheral blood mononuclear cell from the patient, commonly achieved ...

Stem Cell Infusion (Adult, Peds) - Medical Staff Affairs

product is autologous (same donor and recipient) or allogeneic family member or unrelated. This will be done by comparing the hematopoietic cell product label to

Adverse reactions during stem cell infusion in children treated ...

the cellular therapy (marrow) product, followed by slow drainage for removal. Volume reduction was performed if there were concerns about ... (allogeneic vs autologous), stem cell source ...

Manufacturing of Gene Therapies: Ensuring Product Safety ...

In terms of autologous or allogeneic cells used to make ex vivo modified cell- based products, FDA would ask for information about the source of cells, the collection procedure, and ...

Cell & Gene Therapy - saxocell.de

our proven expertise to accelerate and de-risk cell therapy programs 25 30+ cell therapy programs 15+ allogeneic cgm batches released 275+ autologous cgm batches released ...

Stem Cell Therapy for Orthopedic Indications (Including

Note: This evidence review does not address stem cell therapy used for disorders affecting the hematopoietic system that are inherited, acquired, or result from myeloablative treatment, or ...

Chimeric Antigen Receptor T-cell (CAR-T) Therapy - Blue ...

Aug 3, 2020 · chemotherapy and/or allogeneic stem cell transplant; AND • Patient has NOT received prior CD19-directed chimeric antigen receptor T-cell therapy (CAR-T) or any other ...

Mesenchymal stromal cell therapy: Progress to date and ...

suppress Th17 activity.29-31 Patients responsive to MSC therapy have increased Treg relative to Th1 and Th17 cell populations.32,33 Additionally, in acute graft-vs.-host disease (aGvHD) ...

Treatment of Osteoarthritis with Autologous and Allogeneic ...

on the merits of autologous bone marrow-derived MSCs vs. autologous chondrocyte

implantation and observed that MSCs are as effective in cartilage repair as implanted chondrocytes. In ...

Cell and Gene Therapy Catapult

Autologous/ Allogeneic Year Trial Started United Kingdom Site(s) Cell and Gene Therapy Catapult ATMP Clinical Trials Database 2024 Adaptimmune ... Cell-derived Retinal Pigment ...

White Paper Cell and Gene Therapy Logistics Management

Logistics management is a key element of operationalizing cell and gene therapy (CAGT) trials. There are unique logistics requirements for autologous cell therapy modalities and allogeneic ...

Toxicological Assessment of Cell Therapy - Society of ...

CAR T cell therapy -YESCARTA® and KYMRIAH™ 22 Type Indication Proposed Mechanism Preclinical studies CD19-directed genetically modified autologous T-cell immunotherapy ...

Off-the-shelf allogeneic CAR T cells: development and ...

the disease or its therapy. Autologous T cells might not ... Potential risks associated with allogeneic cell therapy have been demonstrated in the context of allogeneic SCT. HLA ...

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Mesenchymal Stem Cell-Based Therapy for Cardiovascular ...

MSCs are considered an attractive option for cell-based therapy because of their ease of isolation and secretion of bioactive molecules and microvesicles that activate tissue repair processes ...

Allogeneic stem cell transplantation in myeloma

therapy and autologous stem cell transplantation Infoguide from Myeloma UK More rarely, a patient may receive stem cells from a donor. A donor is another person who gives (donates) ...

Allogeneic Vs Autologous Cell Therapy [PDF] - x-plane.com

healthcare. Two distinct approaches dominate the field: autologous and allogeneic cell therapy. Allogeneic vs autologous cell therapy represents a fundamental dichotomy influencing clinical ...

Autologous stem cell transplants - Leukaemia Foundation

There are two main types of stem cell transplants: • autologous (au-tol-o-gus) • allogeneic* (al-o-gen-a-ic) This booklet mainly describes autologous stem cell transplants. In 2021, a total of ...

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ONLINE FIRST Comparison of Allogeneic vs Autologous ...

Comparison of Allogeneic vs Autologous BoneMarrow-DerivedMesenchymalStemCells ... a greater extent than autologous cell preparations,13 possibly via formation of alloreactive ...

Toward “off-the-shelf” allogeneic CAR T cells - Wiley Online ...

Chimeric antigen receptor (CAR) T cell therapy represents a major breakthrough in the field of immuno-oncology. Many potential issues are apparent for autologous CAR T cell therapy, ...

Sequential CD7 CAR T-Cell Therapy and Allogeneic HSCT ...

1 patient had autologous hematopoiesis. Three patients had grade 2 HSCT-associated acute GVHD. The median follow-up was 15.1 months (range, 3.1 to 24.0) after CAR ... Sequential ...

92. Infographic Kymriah vs Yescarta - nucleusbiologics.com

Autologous vs. Allogeneic: autologous treatments use a person's own cells, while allogeneic treatments use cells from a donor whose human leukocyte antigens (HLA) are acceptable ...

Pediatric Stem Cell Transplant and Cellular - MD Anderson ...

Autologous Stem Cell Transplant 2 ... • Autologous Transplant Possible Side Effects/Complications Allogeneic Stem Cell Transplant 3 • Human Leukocyte Antigen (HLA) ...

ADI-001: An allogeneic CD20-targeted $\gamma\delta$ CAR T cell therapy ...

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A novel high-titer, bifunctional lentiviral vector for ...

Original Article A novel high-titer, bifunctional lentiviral vector for autologous hematopoietic stem cell gene therapy of sickle cell disease Kevyn L. Hart,¹ ,¹¹Boya Liu,²⁵ Devin Brown,³Beatriz ...

Understanding Cellular Therapy

Chapter 2: CAR T Cell Therapy versus Stem Cell Transplantation. 5 Part 2 — Concepts and Considerations Before CAR T Cell Therapy in Lymphoma ... source of the stem cells: ...

ALLOGENEIC Stem Cell Transplant Handbook - saskcancer.ca

1. Autologous Stem Cell Transplant. Patients have their own stem cells collected and frozen before treatment, to be returned to the patient “re-infused” following high dose chemotherapy. ...

Analytical and Multi-Level Comparability for Genome Editing ...

Chimeric antigen receptor (CAR) T-cell therapy A real treatment option for patients with B-cell malignancies T-cells engineered to express CAR aim to strengthen the power of T-cells to ...

The clinical pipeline for cancer cell therapies - Nature

most cell therapy agents in phase II and beyond in regions outside the United States, such as China, it has not been disclosed whether they are autologous or allogeneic (Supplementary ...

AUTOLOGOUS CELL THERAPY MANUFACTURING - Takeda

The autologous cell therapy is administered back to the same patient. The patient's cells are engineered in a weeks' long process at an o'site facility. The engineered autologous cell ...

Cell Stem Cell Perspective - Cell Press

Allogeneic and autologous T cells thus have their respective advantages and disadvantages. For some cancers, T cells may be isolated from surgically ... Tcellsfor adoptive cell therapy,starting ...

Hematopoietic Progenitor Cells Apheresis Collection (HPC-A) ...

Autologous . means that a patient's own own stem cells are collected. These are frozen and stored until needed for the transplant. • Allogeneic . means that stem cells are collected from a ...

Direct in vivo CAR T cell engineering - Cell Press

Jan 24, 2024 · been limited [9]. Moreover, like autologous CAR T cell therapy, the administration of allogeneic CAR T cells also necessitates lymphodepletion whichcan be associated with ...

Commercial Scale Manufacturing of Allogeneic Cell Therapy

Scale Manufacturing of Allogeneic Cell Therapy. Front. Med. 5:233. doi: 10.3389/fmed.2018.00233 CommercialScaleManufacturingof ... focused on autologous or ...

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