14th International Donor Registry Conference & WMDA Meetings
25 – 29 June, 2024 – Cape Town, South Africa
All patients & donors matter
www.capetownidrc.co.za

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Global Perspective on Allogeneic Cell Therapy Product Development

International Society
ISCT
Cell & Gene Therapy®

Your Truly Global, Translation Focused, Expert Guided Community

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TRANSLATION FOCUSED

ISCT empowers the CGT sector to drive translation

Address barriers at every step of the translational pathway and at every stage of the development process to drive translation of advanced therapies to patients.

TRANSLATE ACROSS ALL PHASES OF DEVELOPMENT AND DISCIPLINES:

- SCIENTIFIC
- REGULATORY
- INDUSTRY

ISCT®

GLOBAL REGULATORY INFRASTRUCTURE

Combining expertise from academia, industry, regional, global and ethics perspectives

ISCT®

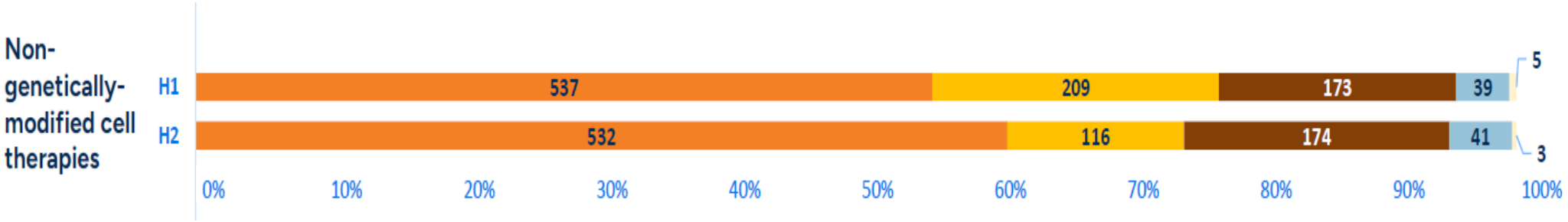
What is Cell Therapy?

- The transfer of autologous or allogeneic cellular material into a patient for medical purposes
- The cell may be genetically modified or not
- By definition it is generally “personalized” or “precision” medicine
- It is considered a living drug

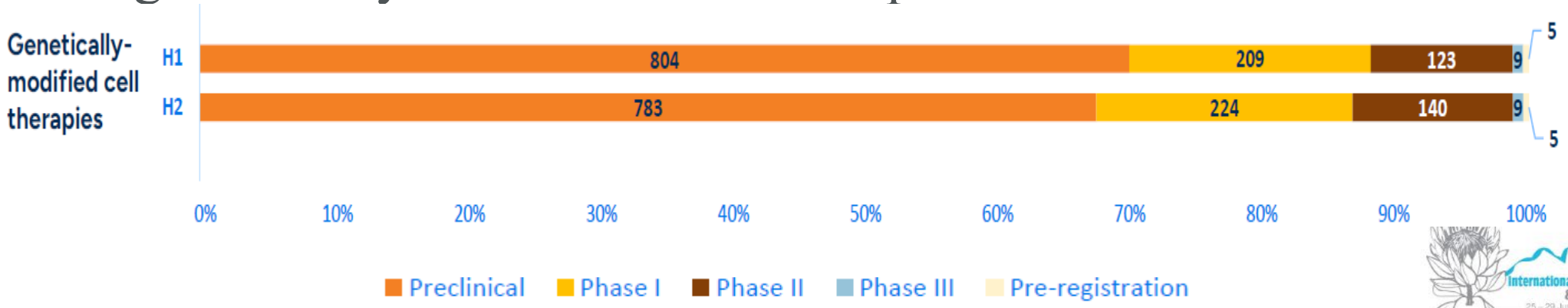
As of December 2023

(compared to June 2023)

- 866 non-genetically modified cell therapies



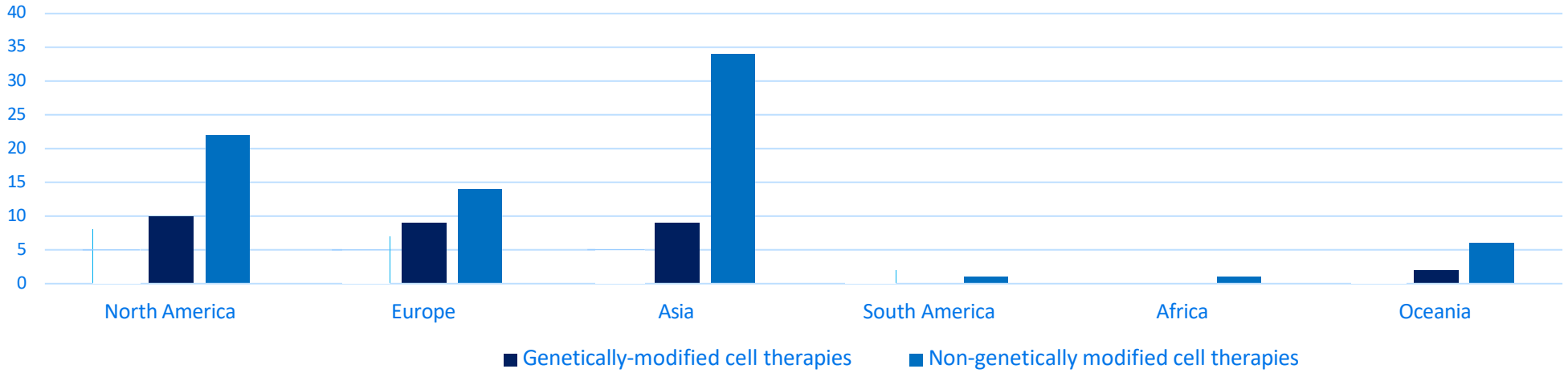
- 1161 genetically modified cell therapies



Source: ISCT Cell and Gene Therapy Global Regulatory Report – December 2023 Edition

Overview of Approved Products (12/23)

- 81 products approved globally
  - 66 non-genetically modified cell products
  - 15 genetically modified cell products
- Similar approval distribution pattern between North America, Europe, and Asia



**Approvals by regions do not necessarily represent the approvals from one or more countries in the regions.*
*****Oceania*** *includes Australia and New Zealand.*

Source: ISCT Cell and Gene Therapy Global Regulatory Report – December 2023 Edition

ISCT Cell and Gene Therapy Global Regulatory Report

- Developed by ISCT in partnership with Citeline, this report provides a global overview of the cell and gene therapy regulatory landscape, including pipeline, late-stage (Phase III and pre-registration), and approved products.
- Published biannually and covers Cell, Genetically-Modified Cell, and Gene Therapies.

Data Partner: CITELINE a norstella company

Examples of non-gene modified cellular products

- Stem cells
- Fibroblasts
- Mesenchymal stem cells
- Dendritic cells
- Tumor Infiltrating Lymphocytes (TIL cells)

Examples of gene modified cellular products

- Chimeric Antigen Receptor T cells (CAR T cells)
- T Cell Receptor (TCR) therapy
- Natural Killer Chimeric Antigen Receptor T cells (NK-CAR T cells)

Pros and Cons of Autologous Cell Therapy

Pros	Cons
Specifically tailored to the patient	Starting material (cells) from the patient may not be of optimal quality (insufficient #s of cells and potential contamination with tumor cells [in oncology])
Minimal risk of autoimmune complications (GVHD)	Each patient has their own product which drives up cost
	Few centers worldwide can manufacture these products which makes patient access difficult
	Time required for manufacture allows for disease progression in the patient

Pros and Cons of Allogeneic Cell Therapy

Pros	Cons
Starting material (cells) from healthy donors allowing for a higher number of functional cells	Increased risk of autoimmune complications (GVHD)
Product could be manufactured locally and shipped to centers for infusion	
Rapidly available (pre-manufactured)	

Key to a successful allogeneic product is an optimal donor
OR
Not all donors are created equal

- The goal is maximum yield of appropriate, functional cells that demonstrate appropriate activity
- Ethnic and Racial matching of the patient and donor population is optimal
- How much information is available about the donors (HLA, Inf Disease status, etc)
- Are the donors contactable?

Donor Eligibility for Allogeneic Products

- Complete history and physical examination and a standard questionnaire that is given to all blood donors
- CBC, platelets, differential
- Basic metabolic panel, Total protein, albumin, total bilirubin, alkaline phosphatase, ALT, AST
- HIV-1 antibody, HIV-2 antibody, HIV NAT, HTLV-1/2 antibodies, HBs antigen, HBc antibody, HCV NAT, CMV antibody, RPR, West Nile virus NAT, and Chagas testing
- ABO and Rh typing
- Pregnancy test for women of child bearing potential

Product Testing

- The nature and extent of cell safety testing needed to provide adequate assurance of product safety will generally depend on the expansion potential of the cells and the number of individuals **the cell-based** medical product is treating.

FDA Guidance: Safety Testing of Human Allogeneic Cells Expanded for Use in Cell-Based Medical Products (April 2024)

What about the donors?

- Apheresis procedure is time consuming
- More than one procedure may be required to obtain the optimal number of cells for a single donation
- Donors may be asked to donate more than once if their product contains optimal characteristics
- Should donors be reimbursed for time and travel?
- Can they be paid for the donation?
- What if a commercially successful product is made?

Thank you.

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