

Looking to the CAR-T future: vaccination, outpatient therapy, artificial intelligence and expanding indications

Jan Styczyński 匝

Department of Pediatric Hematology and Oncology, Collegium Medicum, Nicolaus Copernicus University in Toruń, Jurasz University Hospital 1, Bydgoszcz, Poland

On 28 November 2019, the first CAR-T therapy was carried out in Poland [1-3]. Today, several Polish centers are using this technology, and several others are preparing to do so. CAR-T therapy for children and young adults with acute lymphoblastic leukemia has been reimbursed by the National Health Fund since 1 September 2021, and for adults with non-Hodgkin lymphoma since 1 May 2022.

Today, c.150-200 patients are being treated with CAR-T cells every month in Europe, while more than 1,100 clinical trials are running worldwide. This hottest topic in hematology of the last few years has been traced also in Acta Haematologica Polonica [4-7].

In this issue, a set of five articles on CAR-T technology is presented: Dytfeld et al. [8] on outpatient therapy, Gil et al. [9] on artificial intelligence, Romejko-Jarosińska [10] on mantle cell lymphoma, Styczyński et al. [11] on vaccinations, and Żyłka et al. [12] on primary mediastinal lymphoma.

More indications will need reimbursement; expanding indications in ALL are needed, and multiple myeloma patients are being offered new hope. Although patients with T-cell ALL, AML and solid tumors can today only dream about such therapy, it is only a question of time before this becomes reality.

Authors' contributions

JS - sole author.

Conflict of interest

None.

Financial support None.

Ethics

The work described in this article has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans; EU Directive 2010/63/EU for animal experiments; Uniform requirements for manuscripts submitted to biomedical journals.

References

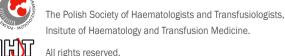
- 1. Styczyński J. Where dreams come true: CAR-T cell therapy in Poland! Acta Haematol Pol. 2020; 51(1): 1, doi: 10.2478/ahp-2020-0001.
- 2. Dytfeld D, Łojko-Dankowska A, Matuszak M, et al. Road to clinical implementation of CAR-T technology in Poznań. Acta Haematol Pol. 2020; 51(1): 24-28, doi: 10.2478/ahp-2020-0006.
- Marschollek P, Liszka K, Gorczyńska E, et al. A dream that came true: 3. Poland's first successful CAR-T cell therapy in child with refractory B-cell acute lymphoblastic leukemia (ALL). Acta Haematol Pol. 2021; 52(3): 211-213, doi: 10.5603/ahp.a2021.0028.
- Styczyński J. A brief history of CAR-T cells: from laboratory to the 4. bedside. Acta Haematol Pol. 2020; 51(1): 2-5, doi: 10.2478/ahp-2020-0002.
- 5. Gil L, Łojko-Dankowska A, Matuszak M, et al. CAR-T cell therapy toxicity and its management. Acta Haematol Pol. 2020; 51(1): 6-10, doi: 10.2478/ahp-2020-0003.
- 6. Styczyński J. Infections following CAR-T cells therapy: current state--of-the-art review and recommendations. Acta Haematol Pol. 2020; 51(1): 11-16, doi: 10.2478/ahp-2020-0004.

*Address for correspondence: Jan Styczyński, Department of Pediatric Hematology and Oncology, Collegium Medicum, Nicolaus Copernicus University in Toruń, Skłodowskiej-Curie 9, 85-094 Bydgoszcz, Poland,

phone +48 52 58 548 60, fax +48 52 58 540 87, e-mail: jstyczynski@cm.umk.pl

Received: 19.04.2022 Accepted: 19.04.2022

This article is available in open access under Creative Common Attribution-Non-Commercial-No Derivatives 4.0 International (CC BY-NC-ND 4.0) license, allowing to download articles and share them with others as long as they credit the authors and the publisher, but without permission to change them in any way or use them commercially.



Copyright © 2022

- Bembnista E. Implementation of CAR-T technology into clinical practice: challenge for cell bank. Acta Haematol Pol. 2021; 52: 263–267.
- Dytfeld D, Gil L. Outpatient CAR-T therapy. Acta Haematol Pol. 2022; 53(3): 180–182, doi: 10.5603/AHP.a2022.0020.
- Gil L, Grajek M. Artificial intelligence and chimeric antigen receptor T-cell therapy. Acta Haematol Pol. 2022; 53(3): 176–179, doi: 10.5603/AHP.a2022.0019.
- Romejko-Jarosińska J. Radiotherapy in mantle cell lymphoma: a literature review. 2022; 53(3): 166–175, doi: 10.5603/AHP.a2022.0018.
- Styczyński J, Styczyński T, Sadlok J, et al. Vaccinations following CAR-T cell therapy: summary of reported cases and a state-of-the-art review of the current recommendations. Acta Haematol Pol. 2022; 53(3): 207–214, doi: 10.5603/AHP.a2022.0025.
- Żyłka K, Dytfeld D, Gil L. Primary refractory primary mediastinal lymphoma treated with CAR-T: new possibilities and challenges. Acta Haematol Pol. 2022; 53(3): 215–217, doi: 10.5603/AHP.a2022.0026.