RTP On Demand

The Emerging and Potential Role of Chimeric Antigen Receptor T-Cell Therapy in the Management of Hematologic Cancers

CME Information

TARGET AUDIENCE

This activity is intended for medical oncologists, hematology-oncology fellows and other allied healthcare professionals involved in the treatment of hematologic cancers.

OVERVIEW OF ACTIVITY

The recent success of checkpoint inhibitors in treating a number of types of cancer has sparked massive interest in the development of new immunotherapies. One promising approach is chimeric antigen receptor (CAR) T-cell therapy, in which a patient's T lymphocytes are removed and reprogrammed ex vivo with genetically modified receptors that enable the cells to recognize a predetermined tumor antigen and mount an antitumor response. Recent data sets documenting the efficacy of CAR T-cell therapies across several hematologic cancers suggest that this treatment may significantly benefit patients with otherwise limited options. However, the unique nuances, toxicities and practical considerations surrounding this novel therapeutic method present a challenge to community-based clinicians. To bridge the gap between research and patient care, this special RTP On Demand program features one-on-one discussions with leading CAR T-cell therapy investigators. By providing information on the latest clinical developments in the context of expert perspectives, this CME activity allows medical oncologists, hematologists and hematology-oncology fellows to expand their knowledge, eliminate practice gaps and prepare themselves to deliver state-of-the-art care.

LEARNING OBJECTIVES

- Develop an understanding of the biologic rationale for the development of CAR T-cell therapy as a strategy to eliminate targeted cancer cells, and appreciate the basics of the manufacturing and treatment process.
- Appraise existing and emerging efficacy and safety data from early trials testing the use of CAR T-cell therapy in patients with relapsed/refractory B-cell cancers.
- Recognize adverse events and other common side effects associated with CAR T-cell therapy, and implement supportive strategies to prevent and/or manage these complications.
- Compare and contrast the mechanisms of action and toxicity of various CAR T-cell therapy platforms and other immunotherapies to help determine the potential utility of each in clinical practice.
- Recall the scientific rationale for and new data supporting the ongoing investigation of novel applications of CAR T-cell therapy, and counsel appropriately selected patients about study participation.

ACCREDITATION STATEMENT

Research To Practice is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

CREDIT DESIGNATION STATEMENT

Research To Practice designates this enduring material for a maximum of 5 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

AMERICAN BOARD OF INTERNAL MEDICINE (ABIM) — MAINTENANCE OF CERTIFICATION (MOC)

Successful completion of this CME activity, which includes participation in the evaluation component, enables the participant to earn up to 5 Medical Knowledge MOC points in the American Board of Internal Medicine's (ABIM) Maintenance of Certification (MOC) program. Participants will earn MOC points equivalent to the amount of CME credits claimed for the activity. It is the CME activity provider's responsibility to submit participant completion information to ACCME for the purpose of granting ABIM MOC credit.

Please note, this program has been specifically designed for the following ABIM specialty: **medical oncology**.

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HOW TO USE THIS CME ACTIVITY

This CME activity consists of a video component. To receive credit, the participant should review the CME information, watch the video, complete the Post-test with a score of 80% or better and fill out the Educational Assessment and Credit Form located at **ResearchToPractice.com/RTPODCART117/Video/CME**.

CONTENT VALIDATION AND DISCLOSURES

Research To Practice (RTP) is committed to providing its participants with high-quality, unbiased and state-of-the-art education. We assess conflicts of interest with faculty, planners and managers of CME activities. Conflicts of interest are identified and resolved through a conflict of interest resolution process. In addition, all activity content is reviewed by both a member of the RTP scientific staff and an external, independent physician reviewer for fair balance, scientific objectivity of studies referenced and patient care recommendations.

FACULTY — The following faculty (and their spouses/partners) reported relevant conflicts of interest, which have been resolved through a conflict of interest resolution process:

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Hardware/Software Requirements:
A high-speed Internet connection
A monitor set to 1280 x 1024 pixels or more
Internet Explorer 7 or later, Firefox 3.0 or later, Chrome, Safari 3.0 or later
Adobe Flash Player 10.2 plug-in or later
Adobe Acrobat Reader
(Optional) Sound card and speakers for audio

Last review date: February 2018

Expiration date: February2019

Select Publications

Abramson JS et al. **CR rates in relapsed/refractory (R/R) aggressive B-NHL treated with the CD19-directed CAR T-cell product JCAR017 (TRANSCEND NHL 001).** *Proc ASCO* 2017;**Abstract 7513**.

Berdeja JG et al. **First-in-human multicenter study of bb2121 anti-BCMA CAR T-cell therapy for relapsed/refractory multiple myeloma: Updated results.** *Proc ASCO* 2017;**Abstract 3010**.

Buechner J et al. **Global registration trial of efficacy and safety of CTL019 in pediatric and young adult patients with relapsed/refractory (R/R) acute lymphoblastic leukemia (ALL): Update to the interim analysis.** *Proc EHA* 2017;**Abstract S476**.

Fan F et al. **Durable remissions with BCMA specific chimeric antigen receptor (CAR)-modified T cells in patients with refractory/relapsed multiple myeloma.** *Proc ASCO* 2017;**Abstract LBA3001**.

Fitzgerald JC et al. **Cytokine release syndrome after chimeric antigen receptor T cell therapy for acute lymphoblastic leukemia.** *Crit Care Med* 2017;45(2):e124-31.

Fraietta JA et al. **Ibrutinib enhances chimeric antigen receptor T-cell engraftment and efficacy in leukemia.** *Blood* 2016;127(9):1117-27.

Gardner R et al. **Decreased rates of severe CRS seen with early intervention strategies for CD19 CAR-T cell toxicity management.** *Proc ASH* 2016;**Abstract 586**.

Gill S et al. **CD19 CAR-T cells combined with ibrutinib to induce complete remission in CLL.** *Proc ASCO* 2017;**Abstract 7509**.

Lee DW et al. **Current concepts in the diagnosis and management of cytokine release syndrome.** *Blood* 2014;124(2):188-95.

Locke FL, Davila ML. **Regulatory challenges and considerations for the clinical application of CAR T-cell and anticancer therapy.** *Expert Opin Biol Ther* 2017;17(6):659-61.

Locke FL et al. **Clinical and biologic covariates of outcomes in ZUMA-1: A pivotal trial of axicabtagene ciloleucel (axi-cel; KTE-C19) in patients with refractory aggressive non-Hodgkin lymphoma (r-NHL).** *Proc ASCO* 2017;**Abstract 7512**.

Maude SL et al. **Pembrolizumab to augment response to CD19-targeted chimeric antigen receptor (CAR) T cells in relapsed acute lymphoblastic leukemia (ALL).** *Proc ASCO* 2017;**Abstract 103**.

Maude SL et al. **Chimeric antigen receptor T cells for sustained remissions in leukemia.** *N Engl J Med* 2014;371(16):1507-17.

Neelapu SS et al. **Chimeric antigen receptor T-cell therapy — Assessment and management of toxicities.** *Nat Rev Clin Oncol* 2017;[Epub ahead of print].

Park JH et al. **Durable long-term survival of adult patients with relapsed B-ALL after CD19 CAR (19-28z) T-cell therapy.** *Proc ASCO* 2017;**Abstract 7008**.

Porter DL et al. **Randomized, phase II dose optimization study of chimeric antigen receptor (CAR) modified T cells directed against CD19 in patients (pts) with relapsed, refractory (R/R) CLL.** *Proc ASCO* 2016;**Abstract 3009**.

Schuster SJ et al. **Global pivotal phase 2 trial of the CD19-targeted therapy CTL019 in adult patients with relapsed or refractory (R/R) diffuse large b-cell lymphoma (DLBCL) — An interim analysis.** *Proc EHA* 2017;**Abstract LB2604**.