Standard of Care and the Current Clinical Trial Landscape of CAR-T Cell Therapy

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Aim/Introduction:
Since 2021, CAR-T cell therapy has been approved for the treatment of relapsed, refractory multiple myeloma by the US FDA and EMA. Idecabtagene vicleucel (ide-cel, Abecma) was approved based on the results of the KarMMa-1 study; and ciltacabtagene autoleucel (cilta-cel, CARVYKTI) was approved based on the results from CARTITUDE-1 study. In this presentation, Dr. Lin will present updated data from the clinical trials of these CAR-T, including emerging data on the use of CAR-T in the current era of other BCMA targeting therapy.

Expert

Name/title: Yi Lin, MD, PhD
Affiliation: Division of Hematology, Mayo Clinic

Brief self-introduction:
I have been involved in the registration studies that led to the approval of CD19CART in aggressive lymphoma and BCMA-CART in myeloma. Happy to discuss the standard of care practice in the use of these CART in the clinic, as well as the current clinical trials landscape of CART in myeloma and running a clinical trials program for cell therapy.

Related publications:
1) Anti-BCMA CAR T-Cell Therapy bb2121 in Relapsed or Refractory Multiple Myeloma, N Engl J Med, 2019; 380: 1726-1737.
2) Ciltacabtagene autoleucel, a B-cell maturation antigen-directed chimeric antigen receptor T-cell therapy in patients with relapsed or refractory multiple myeloma (CARTITUDE-1): a phase 1b/2 open-label study, Lancet, 2021; 398: 314-324.
3) Idecabtagene Vicleucel in Relapsed and Refractory Multiple Myeloma, N Engl J Med, 2021; 384: 705-716.

Facilitator

Name/title: Reona Leo Sakemura, MD, PhD
Affiliation: Division of Hematology, Mayo Clinic

Brief self-introduction:
I am a junior faculty at the Mayo Clinic. My research is focused on adoptive cellular therapy and allogeneic transplantation for hematological malignancies. Specifically, my projects focused on the development of strategies to enhance chimeric antigen receptor T (CAR-T) cell efficacy and reduce its toxicity.

Related publications:
1) Targeting Cancer-Associated Fibroblasts in the Bone Marrow Prevents Resistance to Chimeric Antigen Receptor T-Cell Therapy in Multiple Myeloma, Blood, 2022; 139: 3708-3721.
2) Development of a Clinically Relevant Reporter for Chimeric Antigen Receptor T-cell Expansion, Trafficking, and Toxicity, Cancer Immunol Res, 2021; 9: 1035-1046.
3) GM-CSF inhibition reduces cytokine release syndrome and neuroinflammation but enhances CAR-T cell function in xenografts, Blood, 2019; 133: 697-709.