



## Cancer immunotherapy in review: preface to special edition

As we emerge head first into this new era of immuno-oncology, it seems timely for clinicians and scientists alike to review how far we have come in engineering the immune system to fight cancer. Whether by stem cell transplantation and graft versus tumor effect, monoclonal antibody therapy, vaccines, cellular therapies with CAR-T cells, or checkpoint inhibitors each cancer has had varying levels of success with immune system-related strategies. In this special issue I have guided our authors to consider and review the immune-mediated tools we have recently gained in both solid and hematologic malignancies. Upon review of the treatments available I have also asked each author to catapult us to the next wave of strategies currently in development and in clinical trials. Ultimately each topic chapter touches on a new class of immune toxicities that we have recently discovered as we explore and unleash the power of immunotherapy.

We begin with perhaps the mother of immunotherapy discussing advanced melanoma. Authors demonstrate the gamut of immunotherapy of this disease with a captivating case series that highlights the key strategies and challenges. Then the chapters move on to genitourinary cancers that also have shown some historic and recent advances in using immunotherapy. Unfortunately, some cancers with lower immunogenicity, such as breast cancer, have had smaller advances using immunotherapy strategy; nonetheless, there have been some important lessons learned in recent clinical trials. Gastrointestinal malignancies are also reviewed here with some increasing body of understanding on how to select patients who may maximally benefit from immune strategies. We then move on to head and neck cancer and lung cancer, where immune checkpoint inhibitors are now becoming a commonplace therapy in our everyday clinics.

Blood cancers are then presented and, as cancers of the immune system's own cells gone awry, add another layer of complexity to our discussions. We start with a comprehensive journey on the immunotherapy of chronic lymphocytic leukemia. Then we discuss ALL and some significant strides especially in the refractory pediatric population with regards to CAR-T cellular therapeutics. AML will incorporate lessons from transplantation and some challenges, such as immune evasion, with cellular therapeutics and targeted drug conjugated immunotherapy. Non-Hodgkin's lymphoma immunotherapy approaches are thoroughly reviewed, with perhaps the most excitement on the horizon using new tools already being incorporated in both initial and palliative strategies. The unmet need in refractory Hodgkin's Lymphoma is discussed with checkpoint inhibitors possibly filling some of the void. Finally, it is a burgeoning era in multiple myeloma with new immunotherapy agents recently being approved that are being combined with standard therapies to push the median survival out to decades.

Nevertheless, with some exceptions, we have yet to cure cancer with the advances in immunotherapy. We are better able to extend life and induce durable remissions; however, despite some modest strides this special edition leaves us with the realization that most advanced cancer is not cured. If we can eliminate cytotoxic therapy from our palliative approach and at the same time minimize the symptoms associated with tumor burden that is the start of success. We have certainly enhanced our palliative care of cancer. After reading our edition, I hope you agree that we now have more tools to feel the cure is within arm's reach.

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