Immunological Disorders and Immunotherapy

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Commentary

Importance of Tumor Therapy: Precision Oncology

Anthony Letai*

Department of Health Research Methodology, Evidence, and Impact, McMaster University, Hamilton, Ontario, Canada

DESCRIPTION

Immunotherapy has revolutionized the field of hematology oncology. Before the recent advent of immunotherapy, the classic triad of cancer treatments consisted of chemotherapy, radiotherapy, and surgery. Although the therapeutic efficacy of these latter approaches has long been described in terms of destroying or eliminating cancer cells, immune cells play an important role in the process of identifying, killing, and eliminating cancer cells.

This knowledge has led to the emergence of new therapies based on activation or induction of the immune system, successfully expanding the therapeutic arsenal of hematology oncologists. One such example of cancer therapies directly targeting tumor cells is the antibody rituximab, which targets CD20 expressed on the surface of malignant B cells. This drug was approved over 20 years ago and has become a mainstay of treatment for a variety of $CD20^{+}$ lymphomas. Other recent examples of immunotherapy focus on restoring the immune system's ability to identify and eliminate cancer cells, such as checkpoint inhibitor molecules (PD1, PD-L1, CTLA-4, etc.).

In parallel with the immunotherapy revolution, promising therapeutic modalities currently being explored rely on cellular alterations related to cancer cell biology, such as: B. Small molecules that target the Phosphatidylinositol-3-Kinase (PI3K) signaling pathway (i.e., these targeted therapies are being discovered more and more rapidly, aided by novel single-cell genomic approaches that provide new targets). These two new types of cancer treatments, immunotherapy and targeted therapy, can be used synergistically with established treatment regimens for B-cell lymphoma to improve clinical outcomes. Will be here, we review new developments in combination therapy for patients with B-cell lymphoma by reviewing ongoing clinical trials that started in 2015–2020 and focused on combination therapy, including immunotherapy. Search for B-cell lymphoma and combination therapy trials, including ongoing and completed trials that started during this period, updated since 2018 to clarify which combinations are being tested explained to This review provides an overview of the established immunotherapeutic approaches encountered in combination therapy and describes their mechanisms of action to give the reader insight as to why particular combinations are being pursued. Or for those with a particular interest in geriatrics, here, we provide an overview of the current state of combination therapy for B-cell lymphoma through a detailed analysis of combination therapy trials enrolled between 2015 and 2020. Our analysis provides new insights into the rapid evolution of lymphoma therapy driven by novel additions to therapeutic modalities. Also, B-cell lymphoma as an adjuvant therapy to established cancer therapies, immune checkpoint inhibitors, and other immunotherapies is now being incorporated into mainstream treatment in both adult and pediatric patients.

Finally we conclude on the prospects for future clinical trials that are likely to use systematic testing approaches for more combinations of established chemotherapy regimens with novel agents and novel combinations of immunotherapy and targeted therapies. Future studies will be designed as basket or umbrella studies to facilitate the evaluation of new drugs targeting specific genetic alterations in the tumor or associated immune microenvironment. Therefore, lymphoma patients could benefit from receiving tailored therapy based on the synergistic effects of chemotherapy combined with novel agents that target specific aspects of tumor biology and the immune system.

Correspondence to: Anthony Letai, Department of Health Research Methodology, Evidence, and Impact, McMaster University, Hamilton, Ontario, Canada, E-mail: letaianthony@yahoo.com

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