



Introduction to a How I Treat series on managing complications in patients with lymphoid cancer

Beyond the complexity of disease management, lymphoid malignancies pose the additional challenge of recurring complications, either as a predilection due to the underlying malignancy or as a consequence of therapy. The topics in this How I Treat series tackle common complications encountered, providing guidance for evaluation and management. The articles within this series are as follows:

- Lakshmi Nayak and Tracy T. Batchelor, "How I treat neurologic complications in patients with lymphoid cancer"
- Edit Porpaczy and Ulrich Jäger, "How I manage autoimmune cytopenias in patients with lymphoid cancer"
- Robert A. Schmidt and Agnes Y. Y. Lee, "How I treat and prevent venous thrombotic complications in patients with lymphoma"
- Joerg Herrmann, Kristen B. McCullough, and Thomas M. Habermann, "How I treat cardiovascular complications in patients with lymphoid malignancies"
- Nancy Law and Randy A. Taplitz, "How I treat infection risk and prophylaxis in patients with lymphoid cancer"

Neurologic complications are some of the most challenging and potentially devastating events related to lymphoma care. They can present as a direct effect of lymphoma involvement, or as indirect complications, including paraneoplastic syndromes and vascular events. In addition, an expanding list of lymphoma treatments, including immunotherapies, can cause neurologic side effects that may be life-threatening or have a major impact on quality of life. Management is often complicated by a broad differential diagnosis, inability to penetrate the blood-brain barrier, or limited therapeutic options, but in most situations timely recognition and intervention are paramount.

Autoimmune complications can occur at any time during the disease course and can present a diagnostic dilemma. The pathophysiology may vary with potential contributing factors being the underlying malignancy, an autoimmune disorder, antilymphoma therapy, or a combination of the above. Although autoimmune complications can manifest as rheumatologic, endocrinologic, or neurologic conditions, autoimmune cytopenias are most frequently encountered. Autoimmune hemolytic anemia, immune thrombocytopenia, and, less commonly,

autoimmune granulocytopenia may require treatment directed at the autoimmune condition, may be an indication for lymphoma treatment, or both.

Venous thromboembolism is a common complication of lymphoma, with the cancer diagnosis, treatment, procedures, and immobilization all potentially contributing to risk. As therapy for lymphoma has continued to evolve, so has the management of lymphoma-associated venous thromboembolism. A patient-centered approach is essential to optimize selection of anticoagulant. In all cases, the risk of thrombosis must be weighed against the risk of a bleeding complication when treating an acute event or considering prophylaxis.

Cardiovascular toxicities are a significant cause of morbidity and mortality in patients with lymphoid cancer and are becoming increasingly relevant as life expectancy continues to improve. Therapeutic agents, such as anthracyclines, hematopoietic stem cell transplantation, and radiation therapy, can contribute to the development of cardiac arrhythmias, coronary artery disease, and cardiomyopathy. Baseline risk stratification and an awareness of treatment-related toxicities are important to ensure appropriate prevention strategies, surveillance, and management.

Infection has long been recognized to be a major threat for patients with lymphoid cancer. Immune dysregulation due to lymphoma and treatment-related effects can contribute to a heightened risk of bacterial, fungal, viral, and atypical infections. In addition to chemotherapy and steroids, a growing list of novel targeted agents and immunotherapies is associated with unique infectious concerns. The role of infectious disease screening, requirements for growth factor support, and antimicrobial prophylaxis are important considerations. Accurate diagnosis and optimal treatment of acute infection are essential to minimizing infection-related morbidity and mortality.

The 5 articles in this series explore state-of-the-art management of these important complications arising in patients with lymphoid cancer. Using case-based scenarios, recommendations for diagnosis, prevention, and treatment are provided. This How I Treat series aims to provide clinicians with practical advice to optimize care for patients with lymphoma.

Laurie H. Sehn
Associate Editor, *Blood*