Immunoglobulin Replacement in the Era of Cellular and Bispecific Therapies

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Intravenous immunoglobulin (IVIG) replacement therapy plays an increasingly important role in the management of secondary immunodeficiency in patients receiving novel immunotherapies for hematologic malignancies. Chimeric antigen receptor (CAR) T-cell therapy and bispecific antibodies (BsAbs), particularly those targeting B-cell antigens such as CD19 or B-cell maturation antigen (BCMA), have demonstrated remarkable efficacy in relapsed or refractory B-cell malignancies and multiple myeloma. However, these therapies frequently induce prolonged B-cell depletion, plasma cell suppression, and hypogammaglobulinemia, resulting in impaired humoral immunity and a substantial risk of infectious complications. Hypogammaglobulinemia may persist for months to years following CAR-T cell therapy due to sustained B-cell aplasia and delayed immunologic reconstitution, while BsAb therapies can cause rapid and profound depletion of polyclonal immunoglobulins during ongoing treatment. Emerging clinical data suggest that immunoglobulin replacement therapy may reduce infection risk and improve clinical outcomes in selected patients with severe hypogammaglobulinemia or recurrent infections. Consequently, regular monitoring of immunoglobulin levels and individualized consideration of IVIG replacement are increasingly recommended as part of supportive care strategies in patients treated with CAR-T cells or bispecific antibodies