

Immune Globulin IV Therapy: Optimizing Care of Patients in the Oncology Setting

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Purpose/Objectives: To review major clinical applications of immune globulin IV (IGIV) therapy, properties of currently available IGIV preparations, procedures for dosing and administration, management of infusion-related adverse effects, and strategies for effective patient education.

Data Sources: Published articles, abstracts, and textbook chapters.

Data Synthesis: IGIV therapy supports immune function by providing immunoglobulin G antibodies for protection against pathogens and modulation of autoimmune and other potentially damaging host responses. Licensed uses include treatment of primary immune deficiencies and autoimmune conditions and prophylaxis against viral infection.

Conclusions: The safety and effectiveness of IGIV therapy depend on selection of an appropriate product, dosage, and infusion rate; patient comorbidities and other risk factors; and patient education and treatment adherence.

Implications for Nursing: Nurses have an essential role in the safe and effective use of IGIV, from educating patients about the rationale for and effects of therapy to administering the product and monitoring for adverse effects.

Key Points . . .

- ▶ All available immune globulin IV (IGIV) products display the same immune-supportive properties, but specific product differences can affect the volume of infusion, the rate of infusion, the product's suitability for peripheral or central infusion, and the need for a filter during administration.
- ▶ Patients usually receive initial infusions of IGIV in a hospital or ambulatory care setting, where nurses can provide close supervision and potential infusion complications can be managed safely.
- ▶ Before beginning infusions, nurses should verify physicians' orders, check for clinical contraindications to IGIV therapy, and assess patients' renal, hepatic, cardiovascular, respiratory, and neurologic functions.

Since its introduction in the early 1980s, immune globulin IV (IGIV) therapy has become an important means for treating a variety of disease states manifested by deficient production of immunoglobulins or by aberrant production of autoantibodies (autoimmune disorders). Among the conditions are primary immune deficiency (PID), idiopathic (or immune) thrombocytopenic purpura (ITP), Kawasaki disease, chronic lymphocytic leukemia (CLL), hematopoietic stem cell transplantation (HSCT), and HIV infection in children. This article discusses the medical indications for IGIV therapy, clinical implications of specific IGIV product properties and differences, and practical considerations in IGIV dosage and administration, nursing management, and patient education. Two case reports highlight nurses' role in administering IGIV therapy and monitoring patients for adverse effects.

Immune Function

The body has two major immune response systems: non-specific and specific. Nonspecific immunity includes barriers (e.g., physical barriers such as skin, chemical barriers such as gastric acid) as well as immune responses such as granulocytic phagocytosis and complement protein activation. Nonspecific immunity is essential as the first line of defense against potentially invading pathogens. It is most important for inflammatory reactions and destruction of bacterial microbes.

Lymphocytes are the essential elements of the specific immune response, which targets unique antigenic structures, for-

eign proteins, viral particles, and transplanted tissue. The two arms of the specific immune system are cellular and humoral. Cytokines from T lymphocytes provide protein-specific cytotoxicity (i.e., cellular immunity). B lymphocytes provide targeted cell destruction (i.e., humoral immunity) through creation of antibodies, also known as immunoglobulins. The B cells that conduct the humoral immune response may be activated by a direct encounter with an antigen or by T-cell cytokines. In either case, activated B cells evolve into antibody-producing cells known as plasma cells. If a specific antigen particle or organism enters the body for a second or subsequent time, a

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