Management of Patients Receiving Antithymocyte Globulin for Aplastic Anemia and Myelodysplastic Syndrome

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Antithymocyte globulin (ATG) is used commonly in patients with severe aplastic anemia and those undergoing renal transplant. Its utility also is being explored in the treatment of myelodysplastic syndrome, conditioning regimens for hematopoietic stem cell transplant, and prophylaxis of graft-versus-host disease. As indications for ATG expand, knowledge regarding its administration and management of associated toxicities is needed. These toxicities range from life-threatening anaphylaxis associated with the infusion to flu-like symptoms that occur one to two weeks after the infusion. Adverse effects are classified according to the severity and system impacted. Mild toxicities respond to comfort measures and include fever, chills, urticarial rash, and vomiting. Moderate toxicities require acute interventions and include fluid-responsive hypotension, nonischemic chest pain, and reversible oxygen desaturation. Severe toxicities require intensive support and include those refractory to earlier intervention. Management of these toxicities usually is limited to fluid resuscitation and noninvasive monitoring. Occurrence of infusion-related toxicities may require premature discontinuation of therapy. Therefore, an educated healthcare team and interdisciplinary clinical management guidelines are important to ensure the safe administration and complete course of ATG.

Key Words: aplastic anemia, antilymphocyte serum, myelodysplastic syndrome

Application in AA and MDS

AA is an acquired hematologic disorder characterized by pancytopenia and hypocellular bone marrow. The pathophysiology of AA is hypothesized as an autoimmune attack mediated by T lymphocytes against the bone marrow (Young, 2002; Young & Maciejewski, 1997). In severe AA, patients may require immediate medical and supportive therapy for life-threatening infection or bleeding. To move beyond supportive care into the realm of treatment, factors such as age, degree of neutropenia, and availability of a human leukocyte antigen- (HLA-) matched donor must be considered. Bacigalupo et al. (2000) presented three treatment recommendations based on two important predictors of outcome: age and neutrophil count (see Table 1). Allogeneic HSCT is the recommended therapy for patients with AA and MDS.