LEARNING OBJECTIVES

Upon completion of the chapter, the reader will be able to:

1. Explain the pathophysiology of myelodysplastic syndromes (MDS).
2. Discern the class of chemotherapeutic agents that contributed to the development of MDS given cytogenetic analysis of the bone marrow.
3. Identify symptoms a patient may present with that are consistent with a diagnosis of MDS.
4. Describe testing that should be done to diagnose a patient with MDS.
5. Calculate the International Prognostic Scoring System–Revised risk score for a patient with MDS when given percentage of bone marrow blasts, cytogenetics, and cytopenias.
6. Discern the goals of therapy for a patient with MDS based on age, presence of symptoms, International Prognostic Scoring System–Revised risk score, and eligibility for allogeneic hematopoietic stem cell transplantation.
7. Characterize the benefits of iron chelation in patients with MDS and iron overload.
8. Compare the rates of complete response, hematologic improvement, and overall survival of therapeutic options used to treat MDS.
9. Recommend an appropriate therapeutic regimen for a patient given International Prognostic Scoring System and/or International Prognostic Scoring System–Revised risk category, age, cytogenetic information, and eligibility for allogeneic hematopoietic stem cell transplantation.
10. Determine the likelihood of response to erythropoiesis-stimulating agents based on erythropoietin level and duration of transfusion dependence.
11. Identify the patient population most likely to respond to lenalidomide.
12. Define patient factors predictive of response to antithymocyte globulin.
13. Contrast potential adverse effect profiles of DNA hypomethylating agents, immunomodulatory agents, and immunosuppressive medications used to treat MDS.
14. Assess response in patients given pharmacologic therapy for MDS.
15. Formulate a monitoring plan to provide follow-up care for patients with MDS based on the pharmacotherapeutic plan implemented.