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Acute Promyelocytic Leukemia: An Overview With Implications for Oncology Nurses

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Acute promyelocytic leukemia (APL), once described as the form of leukemia with the highest mortality, is now the most potentially curable subtype of adult acute myeloid leukemia. A brief review of the history of APL will describe the advances in research and clinical practice and their impact on patient outcomes. Oncology nurses should familiarize themselves with the nuances of APL because of the critical role nurses play in providing support for patients. This article provides an overview of APL, including the epidemiology and pathophysiology that distinguishes APL from other types of acute leukemia. Clinical presentation and diagnostic workup for patients suspected of having APL will be reviewed, as will the treatment course. Nursing implications and management will be provided related to potential treatment complications specific to APL, including coagulopathies, differentiation syndrome, and QT prolongation with the use of arsenic trioxide, as will the side effects and complications that can occur in any patient with leukemia, such as infection, hyperleukocytosis, tumor lysis, and increased intracranial pressure.

Acute promyelocytic leukemia (APL) was first described by Hillestad (1957) as a fatal disease with an aggressive course and short duration. Pathologically, the disease was characterized by numerous promyelocytes in the blood and bleeding tendencies from a low fibrinogen level and platelet count. Since that time, multiple events have occurred in clinical practice and scientific medicine that have revolutionized the diagnosis and treatment and improved the prognosis for APL, with most patients now being cured from this once-fatal disease (Degos, 2003).

This article provides the oncology nurse with an overview of APL, including the epidemiology and pathophysiology that distinguishes APL from other types of acute leukemia. Clinical presentation and diagnostic workup for patients suspected of having APL will be reviewed, as will the treatment course. Nursing implications and management will be provided for possible treatment complications specific to APL, including coagulopathies, differentiation syndrome, and QT prolongation with the use of arsenic trioxide, as well as several complications that can

At a Glance

- Acute promyelocytic leukemia (APL) was previously considered a highly lethal form of acute myeloid leukemia (AML) but, because of research and drug development, is now the most curable subtype of adult AML.
- APL is pathologically different from other types of AML because of its specific morphology and abnormality on chromosomes 15 and 17.
- The complications of coagulopathy, differentiation syndrome, and QT prolongation are seen more commonly in patients diagnosed in APL compared to other types of leukemia.

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