

## Acute Promyelocytic Leukemia: A Uncommon form of Leukemia

Huang Chuanshu\*

Department of Hematology, Ningbo University, Ningbo, China

### DESCRIPTION

Acute Promyelocytic leukemia (APL) is an severe form of acute myeloid leukemia in which the blood and bone marrow contain an excess of immature blood-forming cells (Promyelocytic). The body's regular white and red blood cells, as well as platelets, are depleted as a result of the accumulation of Promyelocytic. APL is characterized by an increased risk of bleeding and the formation of blood clots. Excessive weariness, soreness in the affected areas, loss of appetite, and weight loss are all possible side effects. APL is most common in middle-aged individuals, but it can strike anyone at any age. It is caused by a mutation that develops over time and usually involves a translocation between chromosomes 15 and 17.

All-trans retinoic acid (ATRA) and arsenic trioxide, as well as anthracycline-based chemotherapy, may be used to treat the condition. APL is caused by chromosomal translocation (material rearrangement) in some of the body's cells at some point throughout a person's existence (a somatic mutation). The fusion of two genes: the PML gene on chromosome 15 and the RARA gene on chromosome 17 is known as translocation. PML-RAR is the name of the protein produced by this fusion. The PML-RAR protein works in a different way than the PML and RARA genes normally do. Blood cells become "stuck" in the Promyelocytic stage and proliferate (reproduce) abnormally as a result of aberrant function. The extra Promyelocytic then build up in the bone marrow, preventing the generation of normal white blood cells and resulting in APL.

Only a few cases of APL have been found to have translocations involving the RARA gene and other genes. APL is not a

hereditary disease. After conception, a translocation in some of the body's cells (somatic cells) causes the disease. A somatic mutation is what this is called. Somatic mutations can cause cancer or other disorders in the individual, but they are not passed down to offspring. We couldn't find any information about the availability of APL predictive testing. APL is not a hereditary cancer, hence predictive genetic testing is mostly for persons at risk for inherited malignancies and other inherited disorders.

If a close relative has had a genetic test that has discovered a specific mutation linked to a hereditary risk to cancer, predictive genetic testing is often accessible. APL is caused by a somatic mutation that occurs during a person's lifetime and is not handed down via the generations. Furthermore, it's impossible to predict when a somatic mutation will occur in a person's lifespan.

There is no information related to APL Predictive Tests. APL is not a hereditary cancer, hence predictive genetic testing is largely for people who are at risk for inherited malignancies and other inherited disorders. If a close relative has had a genetic test that has discovered a specific mutation linked to a hereditary risk to cancer, this testing is often available. APL is caused by a somatic mutation that occurs during a person's lifetime and is not handed down through the generations. And it's impossible to predict when a somatic mutation will arise in a person's lifespan. Those who want to learn more about predictive tests for a specific type of cancer should contact a genetic professional.

**Correspondence to:** Dr. Chuanshu H, Department of Hematology, Ningbo University, Ningbo, China, E-mail: Huangchuanshu.2029@gmail.com

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