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Prognosis of Diseases Caused by Benzene and Solvents

Benzene and solvents cause many life-threatening illnesses, including acute myelogenous leukemia, acute myeloid leukemia, acute lymphocytic leukemia, chronic myelogenous leukemia and aplastic anemia. A brief definition of each disease and its prognosis follows.

Acute Myelogenous Leukemia

Acute myelogenous leukemia (AML) is a malignant disease of the bone marrow in which hematopoietic precursors are arrested in an early stage of development. Most AML subtypes are distinguished from other related blood disorders by the presence of more than 20% blasts in the bone marrow.

Prognosis of Acute Myelogenous Leukemia

Complete remission of acute myelogenous leukemia occurs in 70-80% of patients. Overall, about 20-30% of people survive free of disease five years after diagnosis. Patients who have not experienced a relapse during this time are considered permanently cured, since most relapses occur within two years of diagnosis. Patients who are less than 60 years of age have a better chance of survival than older patients. This is related to many factors including the ability to tolerate strong chemotherapy medicines. Without treatment, life expectancy is about 3 to 4 months.

Acute Myeloid Leukemia

Acute myeloid leukemia is the most common form of myeloid leukemia in adults (chronic lymphocytic leukemia is the most common form of leukemia in adults overall). In contrast, acute myeloid leukemia is an uncommon variant of leukemia in children. The median age at diagnosis of acute myeloid leukemia is 65 years of age, and approximately 9,000 individuals are affected by acute myelogenous leukemia in the United States annually.

Prognosis of Acute Myeloid Leukemia

Prognostic factors of acute myeloid leukemia include the patient's age, white blood cell count and cytogenetic test results. Other features considered are whether there was an existing preleukemic condition (myelodysplastic syndrome), or whether an earlier cancer was treated with chemotherapy and/or radiation therapy.

Acute Lymphocytic Leukemia

Acute lymphocytic leukemia is a progressive, malignant disease characterized by large numbers of immature white blood cells. These cells can be found in the blood, the bone marrow, the lymph nodes, the spleen and other organs.

Prognosis of Acute Lymphocytic Leukemia

The probable outcome for children is better than for adults, with an 80% cure rate. Eighty percent of adults with acute lymphocytic leukemia achieve complete remission, with 30-50% being cured. Without treatment, life expectancy is about three months.

Chronic Myelogenous Leukemia

Chronic myelogenous leukemia is a chronic malignant disease in which too many white blood cells belonging to the myeloid line of cells are made in the bone marrow. The disease is due to the growth and evolution of an abnormal clone of cells containing a chromosome rearrangement known as the Philadelphia (or Ph) chromosome. Chronic myelogenous leukemia is commonly called CML. It is also known as chronic myelocytic leukemia and chronic granulocytic leukemia.

Prognosis of Chronic Myelogenous Leukemia

The chance of recovering from chronic myelogenous leukemia cancer depends on a number of factors including the phase of chronic myelogenous leukemia, the amount of blasts in the blood or bone marrow, the size of the spleen at diagnosis, the patient's general health and the patient's age.

Aplastic Anemia

Aplastic anemia (AA) occurs when the soft tissue occupying the inner cavities of bones (bone marrow), which is responsible for blood cell production, stops making enough blood-forming stem cells.

Prognosis of Aplastic Anemia

Aplastic anemia can be fatal when it is severe and long lasting. Between 70% and 90% of people who receive a bone marrow transplant from a sibling survive. Survival rates are much lower for people treated with a bone marrow transplant from an unrelated donor. About 50% of patients will respond well to immunosuppressive therapy without a bone marrow transplant. However, long-term survivors receiving immunosuppressive therapy are more likely to develop cancer, especially acute leukemia.

People with severe, chronic aplastic anemia that do not respond to available treatments have an 80% chance of dying within 18-24 months.