

leukemia

Objectives

To know leukemia. •

To know the symptoms of leukemia •

To know Nursing care •

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Leukemia in Children

Leukemia is a cancer of the early blood-forming • cells(stem cells). Most often, leukemia is a cancer of the white blood cells, but some leukemias start in other blood cell types. Leukemia is the most common cancer in children and adolescents. It accounts for about 1 out of 3 cancers in children .

Leukemia is cancer of the blood and develops in the bone marrow. The bone marrow is the soft, spongy center of certain bones that produces the three major blood cells: white blood cells to fight infection; red blood cells that carry oxygen; and platelets that help with blood clotting and stop bleeding. When a child has leukemia, the bone marrow, for an unknown reason, begins to make white blood cells that do not mature correctly, but continue to reproduce themselves. Normal, healthy cells only reproduce when there is enough space for them to fit. The body can regulate the production of cells by sending signals when to stop. With leukemia, these cells do not respond to the signals to stop and reproduce, regardless of space available •

These abnormal cells reproduce very quickly • and do not function as healthy white blood cells to help fight infection. When the immature white blood cells, called blasts, begin to crowd out other healthy cells in the bone marrow, the child experiences the symptoms of leukemia (i.e., infections, anemia, bleeding)

?Who is affected by leukemia

Leukemia is the most common form of cancer in childhood. It accounting for about 30 percent of .childhood cancers •

There are different types of leukemia. •

Acute lymphocytic leukemia (ALL) is the type of leukemia that most commonly affects children, most often between the ages of 2 and 4 years. •

Acute myelogenous leukemia (AML) is the second most common form of leukemia in children. AML generally occurs by the age of 2 years, and is not often seen in older children until the teenage years. AML is the most common type of acute leukemia in adults. •

?What are the symptoms of leukemia

anemia •

When red blood cells are unable to be • produced because of the crowding in the marrow, anemia is present. With anemia, the child may appear tired, pale, and may breathe faster to compensate for the decrease in oxygen carrying capacity. The number of red blood cells on a blood count will be below normal

bleeding and/or bruising •

When platelets are unable to be produced •
because of the crowding in the marrow, bleeding
can occur and the child may begin to bruise more
easily. Petechia are tiny red dots often seen on
the skin of a child with low number of platelets.
Petechia are very small blood vessels that have
bled. The number of platelets on a blood count
will be below normal(Thrombocytopenia)

Recurrent infections •

Although there may be an unusually high number of white blood cells on a blood count of a child with leukemia, these white blood cells are immature and do not fight infection. The child may have had repetitive viral or bacterial infections over the past few weeks. The child with leukemia often shows symptoms of an infection such as fever, runny nose, and cough •

bone and joint pain •

Pain in bones and joints is another common • symptom of leukemia. This pain is usually a result of the bone marrow being overcrowded

Abdominal distress •

Abdominal pain may also be a symptom of • leukemia. Leukemia cells can collect in the kidney, liver, and spleen, causing enlargement of these organs. Pain in the abdomen may cause a child to have loss of appetite and weight loss

swollen lymph nodes •

The child may also have swelling in the lymph nodes under the arms, in the groin, chest, or in the neck. Lymph nodes are responsible for filtering the blood. Leukemia cells may collect in the nodes, causing swelling •

difficulty breathing (dyspnea) •

With T-cell ALL, these leukemia cells tend to •
clump together around the thymus. This mass
of cells present in the middle of the chest can
cause pain and difficulty breathing (dyspnea).
Wheezing, coughing, and/or painful breathing
.requires immediate medical attention

?How is leukemia diagnosed

In addition to a complete medical history and •
physical examination, **diagnostic procedures for leukemia** may include:

- 1-bone marrow aspiration and/or biopsy •
- 2- complete blood count (CBC) •
- 3-blood chemistries, evaluation of liver and •
kidney functions, and genetic studies
- 4-computed tomography scan (CT scan.) •
- 5-magnetic resonance imaging (MRI) •

6-X-ray - a diagnostic test that uses invisible •
electromagnetic energy beams to produce
images of internal tissues, bones, and organs
.onto film

7-Ultrasounds are used to view internal •
organs as they function, and to assess blood
.flow through various vessels

8-lymph node biopsy - a sample of tissue is removed from the lymph node and examined under a microscope •

9-spinal tap/lumbar puncture - a special needle is placed into the lower back, into the spinal canal. A small amount of cerebral spinal fluid (CSF) can be removed and sent for testing to determine if there is an infection or other problems. CSF is the fluid that bathes your child's brain and spinal cord •

Treatment for leukemia

- **1-Treatment usually begins by controlling the presenting symptoms such as anemia, bleeding, and/or infection.**
- 2-chemotherapy
 - (intrathecal medications/chemotherapy
- 3-radiation therapy
- 4-bone marrow transplantation or peripheral blood stem cell transplantation
- 5-targeted therapy
- Medications to prevent or treat damage to other systems of the body caused by leukemia treatment
- medications for nausea and side effects of treatment
- blood transfusions (red blood cells, platelets
- antibiotics (to prevent/treat infections

Nursing care

- 1-Cancer survivorship including later-life effects of childhood cancer, including fertility, cardiac insufficiency, and pulmonary fibrosis •
- 2-Combination therapies •
- 3-Hematologic and immunologic topics •
- 4-Holistic, family-centered supportive care •
- 5-Improvement of quality of life for children and adolescents with cancer •
- 6-Management of side effects from surgery, chemotherapy, and radiation •
- 7-Management of specific symptoms/diseases/co-infections •
- 8-Medication tolerance differences in children and adolescents •
- 9-Pain control •
- 10-Palliative and end of life care issues •
- 11-Pharmacologic agents for pediatrics/clinical trial results •
- 12-Psychological support for the patient, siblings, and families •

The dynamic articles cover a wide range of specific nursing concerns, including :

- 1-Advanced practice issues •
- 2-Clinical issues •
- 3-Clinical proficiency •
- 4-Conducting qualitative and quantitative research •
- 5-Developing a core curriculum for pediatric hematology/oncology nursing •
- 6-Encouraging active patient participation •
- 7-Ethical issues •
- 8-Evaluating outcomes •
- 9-Professional development •
- 10-Stress management and handling your own emotions •

Questions

What are the symptoms of leukemia? •

What are the nursing care for child having leukemia? •