5 Treatment Options for Leukemia

by KRYSTINA OSTERMEYER

What to Know About Leukemia Treatment Plans

Leukemia is a type of cancer that targets the blood cells, so treatments tend to be more invasive than other cancer treatments. It's good to know the options for leukemia treatment. Let's take a look at what these options might include.

Stem Cell Transplantation

Blood stem cells are produced in the bone marrow; these cells are special because they can become any type of cell that the body needs. A newer therapy known as stem cell transplantation (SCT), involves the patient receiving infusions of stem cells to replace the damaged cells.

There are two common types of stem cell transplants:

- **Autologous.** This type involves the use of the patient's own stem cells. The stem cells are removed from the body, treated, and returned after receiving a conditioning treatment.
- **Allogenic.** This type involves the use of a donor cells stem cells. The donor is typically a family member or someone who is not related to the patient.

There is a third type of stem cell transplant, though it is rare. A syngeneic transplantation involves the use of stem cell transplantation from identical twins; both the donor and recipient must have identical genetic makeup and tissue types.

Stem cell therapy is a common treatment in those with chronic myelogenous leukemia, though it is becoming less of a mainstay in those who are older. It is one of the most common treatment options in young people who are diagnosed with leukemia.

Radiation Therapy

Radiation is directed right at cancer cells; the exposure to radiation causes the cancer cells to become damaged. This prevents the cells from being unable to grow or reproduce. Unfortunately, as with other treatments for cancer, neighboring cells can become damaged. However, newer therapies have been developed that minimize damage.

Radiation is typically used in conjunction with other therapies, such as chemotherapy. It can also be used to relieve pain that is caused by enlargement of organs such as the spleen, lymph nodes, and liver.

The most common type of radiation used for leukemia is external beam radiation. This is when photon beams are administered using a linear accelerator. Occasionally, proton beam radiation may be used, and this type of radiation is more targeted than photon beam radiation and has less side effects and long-term effects.

Radiation is often used in acute leukemias if cancer has spread to the brain, spinal cord or skin. It is also used to relieve pain when organs have enlarged due to the cancer.

Chemotherapy

Chemotherapy uses drugs in specific combinations and intervals to kill or damage cancer cells. These medications are very strong, so they also may kill helpful cells and tissues in the body. According to the Leukemia & Lymphoma Society, "…successful chemotherapy depends on the fact that cancerous cells are more sensitive to the chemicals in the drug than normal cells are."

The ultimate goal of chemotherapy is to damage or kill enough cancer cells so that there are no cancer cells left or the production of cancer cells has slowed.

Specific chemotherapy agents used to treat leukemia include:

- DNA-damaging agents: chlorambucil (Leukeran), cyclophosphamide (Cytoxan) and melphalan (Alkeran®)
- Antitumor antibiotics: daunorubicin (Cerubidine), doxorubicin (Adriamycin, Doxil), idarubicin (Idamycinv) and mitoxantrone (Novantrone)
- Antimetabolites: methotrexate (Rheumatrex, Trexall), fludarabine (Fludara) and cytarabine (cytosine arabinoside, ara-C, Cytosar-U)
- DNA-repair enzyme inhibitors: etoposide (VP16, Etopophos, Toposar, VePesid) and topotecan (Hycamtin)

Chemotherapy is given in acute leukemias most frequently but may be given in chronic leukemias if other treatments are not tolerated or if lab findings indicate it is needed.

Watchful Waiting

Leukemia is not always treated aggressively; it is treated using a watch-and-wait approach. The watchful waiting approach is often recommended to those who have slowly progressing or chronic forms of leukemia.

Using the watch-and-wait approach for the disease's progression is monitored through physical exams and labs; no medications are prescribed as there are typically no symptoms for those who are prescribed this approach.

Palliative Care

Palliative care is a medical specialty and focuses on keeping the patient comfortable. According to the Leukemia & Lymphoma Society, the goal is to "…improve quality of life for both the patient and the family. Palliative care is provided by a team of specialists, including palliative care doctors, nurses and social workers who work with a patient's other doctors to provide an extra layer of support. It is appropriate at any age and any stage in a serious illness, and it can be provided along with curative treatment."

There is a misconception that palliative care is the same thing as hospice care; palliative care can occur concurrently with hospice care, but by definition, it can also occur concurrently with curative treatment. Hospice care is provided to those who have six months or less to live.

Common symptoms of leukemia include pain, fatigue and low energy, frequent infections, weight loss, depression, and anxiety, as well as a host of other symptoms. Because of the symptomology of leukemia, experts agree that palliative care should be a mainstay of treatment.