

Medical Treatments for Chronic Myelogenous Leukemia

Chronic myelogenous leukemia (CML), also known as chronic myeloid leukemia, is a cancer of the white blood cells. It begins in the bone marrow, where blood cells are made. From the bone marrow, it enters the blood and may also spread to other organs. Every year about 4,570 people in the United States get CML.

CML has three phases: chronic (the cancer is slow-growing and patients can live with it for a long time); accelerated (cancer cells start to grow more quickly); and blastic (cells are dividing at a rapid rate). Most people diagnosed with CML are in their 60s, and about 90% of cases are in the chronic phase.

What causes CML?

CML is caused by a genetic alteration. Every human cell contains 23 chromosomes (packets of genetic material). In CML, pieces of two chromosomes are switched around. This change results in what's called a Philadelphia (Ph) chromosome, which allows cancer cells to grow and invade the blood. Almost everyone who gets CML has this genetic alteration. It's a change that happens during your lifetime – you don't inherit it from your parents or pass it on to your children.

What are the treatments options for chronic-phase CML?

Imatinib mesylate (Gleevec®)

Imatinib, taken as a daily pill, is the standard treatment for people newly diagnosed with CML. Part of the new generation of targeted treatments, this drug works by blocking the Ph chromosome and causing cancer cells to die. In eight out of 10 patients treated with imatinib, the Ph chromosome disappears completely. Research shows that 93% of people with CML who take imatinib continue to do well even five years after treatment. Imatinib's side effects are usually mild and can be treated. Always tell your doctor about any side effects you are having. He or she should order blood tests every three to six months to check that the drug is still working.



Dasatinib (SPRYCEL®)

As long as imatinib continues to work, CML won't come back, and the chances that it will come back actually lessen over time. For a few patients, though, imatinib may not work, may stop working or may cause very bad side effects. In those cases, dasatinib (SPRYCEL®), a twice-daily pill, is often prescribed. Like imatinib, dasatinib is a targeted treatment and works by blocking the Ph chromosome; however, this drug is many times more powerful than imatinib. Many patients who had stopped responding to treatment with imatinib improved after receiving dasatinib. Researchers are currently studying how well this drug

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performs over the long term. If you're prescribed dasatinib, your doctor will watch your blood counts carefully because sometimes red blood cell counts can drop rapidly. Dasatinib can also cause fluid to collect around the lungs. If you're taking dasatinib and you get a dry cough or begin to feel short of breath, call your doctor right away. He or she may order a chest X-ray.

Bone Marrow Transplant

Imatinib is a very effective treatment for CML, but it's not a cure. Some patients with CML can be cured by a bone marrow transplant. Transplants are risky, and they are more successful in patients under age 60. To be eligible for a transplant, you need a matched donor – usually a close relative like a brother or sister. Not everyone's brother or sister, however, is a close enough match to be a bone marrow donor. Most doctors recommend imatinib treatment before considering a transplant. If a patient is young (under 35) and imatinib stops working, a transplant should be considered.



Other Treatments

Before imatinib was introduced, CML was often treated with a chemotherapy called hydroxyurea (Hydrea®). This drug can restore blood counts, but it doesn't affect the Ph chromosome. Another treatment, interferon, stimulates the body's immune system to fight CML. Doctors now mostly use hydroxyurea and interferon only if other treatments have stopped working.

A new drug, nilotinib (Tasigna®), is being tested in clinical trials in patients with CML and may become another treatment option.

What about treatments for CML in the accelerated and blastic phases?

Many of the same treatments described above are used for CML in the accelerated and blastic phases. Sometimes, chemotherapy used to treat other fast-growing leukemias, such as acute myeloid leukemia, are used.

CancerCare Can Help

CancerCare's professional oncology social workers can help you cope with a diagnosis of CML. Our staff provides people with cancer and their loved ones with counseling and support groups by telephone, online or in person. CancerCare also offers education, information and referrals to other resources that can help you cope with cancer.

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