

# Acute Myeloid Leukemia (AML): Chemotherapy



## What is chemotherapy?

Chemotherapy (chemo) uses strong medicines to kill cancer cells. The medicines kill cells that grow quickly, like cancer cells. Some normal cells also grow quickly. Because of this, chemotherapy can also harm those cells. This causes side effects.

## When might chemotherapy be used for AML?

Chemotherapy is the main treatment for many people with acute myeloid leukemia (AML). It isn't always used for some people with a certain subtype of AML known as acute promyelocytic leukemia (APL). APL is often treated with other kinds of medicine.

If the first treatment with chemotherapy doesn't work, your healthcare provider may advise another type of chemo. This might be given in high doses as part of a stem cell transplant. It depends on a variety of factors, such as your age, overall health, and if the first treatment worked at all.

## How is chemotherapy given for AML?

You will meet with a hematologist/oncologist before chemo treatment starts. This healthcare provider specializes in treating blood cancers like leukemia. The healthcare provider will talk with you about your treatment options and what you might expect.

Chemo for AML is often given in phases. This gives the medicines a better chance of working well. The treatment phases of AML include:

- **Remission induction or induction therapy.** The goal of this phase is to quickly kill as many leukemia cells as possible. Strong medicines are used, and you're in the hospital for this phase. You may be there for up to 6 weeks. This often puts the leukemia into remission. Remission means no AML cells can be found in your body.
- **Consolidation (intensification) therapy.** The goal of this phase is to kill any remaining leukemia cells and keep you in remission. High doses of chemo are given in cycles. Your healthcare provider will talk with you about the number of cycles needed.

Chemotherapy can be intense. You may need to spend a lot of time in the hospital. Talk to your provider about what to expect during chemo. Tests will be done to make sure the chemo is working.

## Treatment in the remission induction phase

This first phase of treatment is usually started very soon after finding out you have AML. You'll likely get a combination of chemo medicines. They are used together to make it more likely that the treatment will work. The chemotherapy is put into your blood through a vein by an IV (intravenous) line. Which medicines you get and how long you receive them depends on factors, such as your age, overall health, gene changes in your AML cells (cytogenetics), and how your body responds to treatment.

You'll likely get a medicine called cytarabine. It's given as a continuous infusion for 7 days. Another chemo medicine, usually daunorubicin or idarubicin, will be given for 3 days. This 7-day plus 3-day protocol puts the leukemia cells in contact with medicines at different phases of their growth. This means more cells will be killed. Your healthcare provider may also add another medicine.

You may also need blood transfusions during this time if your blood cell counts get too low. Your healthcare team will watch you closely for side effects. Side effects are more likely if you get high doses of chemo.

A few weeks after treatment, a bone marrow biopsy and aspiration will be done. This is to look for any remaining leukemia cells. If there are still leukemia cells in your bone marrow, you may have a second course of chemo. This is done to try to put the leukemia into remission.

## Treatment in the consolidation (intensification) phase

Once your leukemia is in remission, the next phase of treatment is consolidation. This intense course of chemotherapy is given in cycles. Each cycle includes a treatment time and a rest or recovery time.

Consolidation is done to try to kill any remaining cancer cells. The goal of this phase of treatment is to keep you in remission or to keep the cancer from coming back (prevent relapse). You may get higher doses of chemo for several days. This will be repeated once a month for a few months. Another option may be very high-dose chemotherapy along with a stem cell transplant.

## What are common side effects of chemotherapy?

Chemotherapy medicines attack and kill cells that divide quickly, including cancer cells. These medicines can also affect normal cells that grow quickly. These include hair cells, cells that line your mouth and throat, and bone marrow cells where your new blood cells are made. Chemo side effects are different for everyone. They usually go away over time after treatment ends.

High doses of chemo are used for AML. This can sometimes lead to serious side effects.

The most common short-term side effects of chemo for AML include:

- Hair loss
- Infections from low levels of white blood cells
- Easy bruising or bleeding from low levels of platelets in your blood
- Tiredness from having low levels of red blood cells
- Mouth sores
- Loss of appetite
- Nausea and vomiting
- Diarrhea
- Skin and nail changes
- Inflammation of the membrane covering the eye and lining the eyelid (conjunctivitis)
- Numbness, tingling, or pain in the hands or feet (peripheral neuropathy)

Some side effects may not go away after treatment. The risk depends on the medicines used. For instance, some types of chemo damage the kidneys, liver, testicles, ovaries, brain, heart, or lungs. Healthcare providers try to limit this damage by doing tests to closely watch the way your body responds to chemo. Some medicines cause problems having children in the future (fertility problems), or they can raise your risk of having other kinds of cancer later on. These risks need to be weighed against the benefits these medicines provide in treating your AML.

Be sure to tell your healthcare team about all side effects you have. There may be things you can do to manage or prevent side effects.

## Working with your healthcare provider

It's important to know which medicines you're taking. Write down the names of all the medicines you're taking. Ask your healthcare team what each one is for, how they work, and what side effects you might have.

Talk with your healthcare providers about what signs to look for and when to call them. Make sure you know what number to call with problems or questions, even on evenings, holidays, and weekends.

It may be helpful to keep a diary of your side effects. Write down physical, thinking, and emotional changes. A written list will make it easier for you to remember your questions when you go to your appointments. It will also make it easier for you to work with your healthcare team to make a plan to manage your side effects.

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