



Treating Acute Myeloid Leukaemia (AML) - A Quick Guide

Contents

This is a brief summary of the information on 'Treating Acute Myeloid Leukaemia (AML)' from CancerHelp UK. You will find more detailed information on the website.

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Which treatment for acute myeloid leukaemia

The main treatment for AML is chemotherapy. Other treatments for AML include growth factors, radiotherapy, and bone marrow or stem cell transplants. The treatment for acute myeloid leukaemia varies depending on your type of AML, your general health, and your age and level of fitness.

The phases of treatment for AML

Acute myeloid leukaemia treatment has two main phases. The first phase is called 'induction'. The aim is to get rid of all signs of the leukaemia. The first treatment you have is chemotherapy. If it works, you are said to be 'in remission'.

Then you have 'consolidation treatment' to stop your leukaemia coming back. This may mean more chemotherapy, or a transplant of bone marrow or stem cells from a donor. Rarely, you may have a transplant with your own blood stem cells. Bone marrow and stem cell transplants are known as intensive treatment.

Treating AML that comes back or resists treatment

Sometimes leukaemia cells are left in the bone marrow after your treatment. This is called resistant leukaemia. You may have more chemotherapy, or your doctor may suggest a stem cell transplant as part of a clinical trial. If the leukaemia comes back after a period of remission it is called a relapse. Again, you may have more chemotherapy or a stem cell transplant.



Statistics and outlook for acute myeloid leukaemia

Outlook means your chances of getting better. Your doctor may call this your prognosis. The likely outcome with AML depends on several things, including how advanced the leukaemia is when it is diagnosed, the type of AML you have, and how well it responds to chemotherapy.

On CancerHelp UK, we have quite detailed information about the likely outcome AML. The statistics we use are taken from a variety of sources, including the opinions and experience of the experts who check every section of CancerHelp UK. They are intended as a general guide only. For the more complete picture in your case, you'd have to speak to your own specialist.

How reliable are cancer statistics?

No statistics can tell you what will happen to you. Your leukaemia is unique. The statistics cannot tell you about the different treatments people may have had, or how that treatment may have affected their prognosis. There are many individual factors that will affect your treatment and your outlook.

About chemotherapy for acute myeloid leukaemia

Chemotherapy uses anti-cancer drugs to destroy cancer cells.

How you have chemotherapy

You usually have chemotherapy directly into your bloodstream for leukaemia. To give chemo directly into the blood, you have a central line put in. This thin plastic tube goes into a large vein in your chest. It can be attached to a tube with a bag of fluid (a drip), or to a syringe. You have the tube put in under local or general

anaesthetic. It stays in for as long as you need it.

Getting rid of the AML (induction)

Your first treatment aims to get your leukaemia into remission. You have several different chemotherapy drugs in cycles of treatment. You have treatment for a few days, then a rest period. Then you may have more treatment, and so on. The treatment causes side effects. You may need to stay in hospital for about a month while you have this treatment and then recover from it.

Treatment to stop AML coming back (consolidation)

When your leukaemia has gone into remission you have 'consolidation treatment'. You may have high doses of one of the chemotherapy drugs that you had as part of your induction treatment. Or you may have intensive treatment, with a bone marrow or stem cell transplant.

Side effects of chemotherapy for acute myeloid leukaemia

Most people with acute myeloid leukaemia have a combination of 2 or more chemotherapy drugs. CancerHelp UK lists the drugs you are most likely to have, and has links to information about their specific side effects.

AML chemotherapy side effects

Drugs affect people in different ways. It is not possible to tell how you will react until you have a particular drug. The common side effects with treatment for AML are

- A drop in your blood cell counts
- Feeling and being sick



- Complete hair loss (the hair grows back after treatment)
- A sore mouth and mouth ulcers
- Diarrhoea
- Tiredness
- Changes in fertility (the treatment will probably make you infertile)

All the drugs used to treat AML will make your blood cell counts fall. You will be at risk of infection for a few weeks after your treatment. During AML treatment, most people will need antibiotics into a vein for infection at some time.

You may need blood transfusions to top up your red blood cells. You will also have a low platelet count at some point in your treatment. This means you are at risk of bleeding or bruising. You can have platelet transfusions to top up your platelets.

Questions for your doctor about chemotherapy for acute myeloid leukaemia

- Why do I need chemotherapy?
- How much treatment will I need?
- What will the side effects be?
- What can I do to help with side effects?
- Who can help me manage side effects?
- Can you prevent any of the side effects?
- Will any of the side effects be permanent?
- How long will the treatment take?
- When will you know if it has worked?
- What will happen if it doesn't work?
- What drugs are you going to give me?
- Is there written information I can have about these drugs?
- What should I do if I am at home and worried about a side effect?

- What should I do if I get a temperature?
- Will you give me growth factors and why?
- Will I have to stay in hospital and if so, for how long?
- Can I have any of this treatment as an outpatient?
- Will I need high dose chemotherapy and why?
- How long will I have to be off work / college etc?

Steroid therapy for acute myeloid leukaemia

Steroids are substances made naturally in the body. They can also be made artificially and used as drugs. Steroids may sometimes be used with chemotherapy to treat AML. Steroids can be tablets or injections.

Side effects of steroids

Because you will not be taking the steroids for very long without a break, you are not likely to have bad side effects from them. But there are quite a few side effects you may notice. These can include increased appetite, increased energy and wakefulness, and indigestion. When you have been taking steroids for some time you may notice some swelling in your hands, feet or eyelids. You may also put on weight. These symptoms are result of water retention caused by the steroids.

Steroids are irritating to the lining of your stomach. You should not take them on a completely empty stomach. Try to have at least a slice of bread, or a glass of milk with them. If you can't manage food, your doctor may give you another tablet to stop the steroids damaging your stomach. You **must** tell your doctor if you get stomach pains after taking steroids. Your doctor will



be looking out for other side effects of your steroids such as raised blood pressure, and sugar in your urine or raised sugar in your blood.

It is important for any doctor treating you for any reason to know you are taking steroids. So you will be given a card to carry to say you are taking steroids.

Growth factors for acute myeloid leukaemia

Growth factors are natural substances that stimulate the bone marrow to make blood cells. Doctors can make some growth factors artificially and use them as treatments. They increase the number of white blood cells and stem cells in the blood. A commonly used growth factor is filgrastim (G-CSF or Neupogen).

You have growth factors as an injection under the skin. This is usually in the tummy or into an arm or a leg. You may have growth factors as part of your treatment for two reasons

- To help you make white cells more quickly after chemotherapy
- To produce extra stem cells before having stem cells collected (a stem cell harvest).

Growth factor side effects

Growth factor injections can have side effects. Some people have itching around the injection site. You may have some pain in your bones after you have had a few injections. Your bone marrow is making so many blood cells that it can get quite crowded and make your bones ache. You can usually control the pain easily with a mild painkiller, such as paracetamol. It usually lasts a few days.

Some people get a high temperature (fever) when they have growth factors. Tell your doctor if this happens to you, because fever can also be a sign of infection.

Radiotherapy for acute myeloid leukaemia

Radiotherapy uses high energy rays to treat cancer. You may have radiotherapy as part of a bone marrow transplant. You have radiotherapy to your whole body. This is called whole body irradiation (WBI) or total body irradiation (TBI). The radiotherapy kills off all your bone marrow, including the leukaemia cells. You then have donor marrow (or your own marrow back) through your drip. You may have TBI twice a day for 3 or 4 days, or as a single treatment.

Doctors use radiotherapy to treat AML that has spread to the central nervous system (CNS). It is not common for AML to spread in this way. If it does, doctors use chemotherapy more often than radiotherapy to treat it.

AML radiotherapy side effects

The side effects of radiotherapy depend on the part of the body being treated. Both TBI and treatment to the brain and spine most often cause sickness and tiredness. They also cause hair loss. But you will have already lost your hair from your chemotherapy.

TBI can have long term effects. You should not sunbathe for several months after treatment. Talk to your specialist about the exact precautions you should take. There is a risk of the lens of your eye clouding over (cataract) many years later. This can be easily treated with simple surgery.



Bone marrow or stem cell transplants for AML

What intensive treatments are

If you have AML your doctors may suggest intensive treatment to try to cure it. Intensive treatment is high dose chemotherapy, and sometimes total body radiotherapy. This treatment kills off all your bone marrow cells. The bone marrow is the spongy substance inside your bones. It contains the stem cells that make all your blood cells. Your doctors need to replace the stem cells so you survive the treatment. You have the stem cells replaced by a drip (transfusion) of

- Someone else's bone marrow or stem cells
- Your own bone marrow
- Your own stem cells - this is not common for AML

The choice between a donor transplant and having your own bone marrow or stem cells depends on a number of different factors, including

- The type of leukaemia you have
- Whether you have a close relative whose blood cells closely match yours

There is information on CancerHelp UK on how stem cells and bone marrow are collected.

Having your transplant

After your chemotherapy and radiotherapy, you have the bone marrow or stem cells through a drip, into a vein. The cells find their own way to the centre of your bones. They begin to make blood cells after a few days or weeks. You usually have to stay in

hospital for a few weeks while your blood cell counts are very low.

Side effects of acute myeloid leukaemia treatment

Side effects are unwanted effects that happen as a result of medical treatment. They vary depending mainly on the type of treatment you've had, but also according to the dose and from person to person.

There are a lot of immediate side effects with acute leukaemia treatment, including tiredness, increased risk of infection, anaemia, bleeding and bruising, sickness, hair loss, a sore mouth and taste changes.

Long term side effects can come on months or years after your treatment finished. Again, the risk of these depends on the specific treatment that you had. Doctors are always working to reduce unwanted treatment effects. People treated for leukaemia these days are less likely to have long term effects than people treated in the past.

Long term effects of treatment for AML

Long term side effects can develop months or years after you had treatment and may be permanent. Your risk of these effects depends on the exact treatment you had, including the particular drugs your doctor prescribed.

Tiredness (fatigue) is the most common problem after cancer treatment and is especially likely in people who have had a bone marrow or stem cell transplant. You are also likely to have lowered resistance to infection for at least 6 months to a year after your transplant.



People treated for AML after puberty will probably be unable to have children (infertile).

Other less common long term treatment effects include thyroid problems, lung problems, heart problems and clouding of the lens of the eye (cataract). There is a risk of getting another cancer because of your treatment but this is rare.

Children can have growth problems because the treatment may change their hormone levels.

Questions for your doctor about AML treatment side effects

- What short term side effects can I expect from my AML treatment?
- What long term side effects can I expect from my AML treatment?
- Are there treatment side effects that are permanent?
- Is there anything I can do to lower my risk of side effects?
- Are there any 'normal' activities that I should avoid after acute myeloid leukaemia treatment – for example, crowded public places, contact sports? If so, for how long?
- What infection precautions should I take and for how long?
- Is there anything I can do to relieve fatigue after being treated for AML?
- What are my chances of being infertile?
- Is there anything I can do to preserve my fertility before I start leukaemia treatment?
- What are the most important signs of side effects to look out for and tell you about?

- Should I contact you between check ups if I'm worried about side effects?
- What number should I ring and who should I ask for?

Acute myeloid leukaemia follow up

After your treatment has finished, you will need to have regular check ups. This is because it is possible that the leukaemia could come back. And if you had chemotherapy or other intensive treatment, your doctors need to keep an eye on you to make sure you don't have any complications.

How often you will have check ups

Your check ups will continue for several years. At first, they will be every few weeks. If all is well, you will go less and less often. Let your doctor or nurse know straight away if you are worried, or notice any new symptoms between appointments. You don't have to wait until the next appointment.

What happens during your check up

Check ups are likely to include blood tests and bone marrow tests. Your doctor will examine you and make sure you don't have any new symptoms. They will also ask about any side effects you may have from your treatment.

Coping with worry

Many people worry about going for their check ups. You may find it helpful to tell someone close to you how you are feeling. It is common for people to have counselling after leukaemia treatment. Find out more in the 'coping with cancer' section of CancerHelp UK.



Acute myeloid leukaemia research

All treatments must be fully researched before they can be adopted as standard treatment for everyone. This is so that we can be sure they work better than the treatments we already use. And so we know that they are safe.

First of all, treatments are developed and tested in laboratories. Only after we know that they are likely to be safe to test are they tested in people, in clinical trials.

There is research looking into new chemotherapy drugs, biological therapies, treating older people, and dealing with problems during treatment.

Questions for your doctor about treating acute myeloid leukaemia

- What type of acute leukaemia do I have?
- What treatment would you recommend and why?
- What are the risks and benefits of this treatment?
- Are there any other treatment options?
- How long will I be in hospital for?
- How often will I have to come back to hospital?
- What are the side effects of this treatment?
- How long will they last?
- What are the long term side effects?
- What do you expect the treatment to achieve?
- What is the chance of the leukaemia coming back after I have been treated?
- Will I be able to go back to work after this treatment?
- Will I still be able to have children after this treatment?
- Will the treatment cause an early menopause? If so, how will you treat this?
- Can you arrange sperm banking for me before I start my treatment?
- Will I have any hair loss? If so, when will my hair grow back?
- Can you arrange a wig for me on the NHS?
- Will I have difficulties with eating and drinking? If so, what can I do about my diet?
- Is there a clinical trial I may be suitable for and will it help me?



Notes

More information

For more information about acute myeloid leukaemia, visit our website
<http://cancerhelp.cancerresearchuk.org>

You will find a wide range of detailed, up to date information for people affected by cancer, including a clinical trials database that you can search for cancer trials in the UK. You can view or print the information in a larger size if you need to.

For answers to your questions about cancer call our Cancer Information Nurses on
0808 800 4040 9am till 5pm Monday to Friday

Adapted from Cancer Research UK's Patient Information Website CancerHelp UK in September 2010. CancerHelp UK is not designed to provide medical advice or professional services and is intended to be for educational use only. The information provided through CancerHelp UK and our nurse team is not a substitute for professional care and should not be used for diagnosing or treating a health problem or disease. If you have, or suspect you may have, a health problem you should consult your doctor.
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