
Polycythaemia Vera (PV)

**A Guide for
Patients**

Leukaemia Care
YOUR Blood Cancer Charity

Introduction

Being diagnosed with polycythaemia vera (PV) can be a shock, particularly when you may never have heard of it before, and may even have had no obvious symptoms. If you have questions about PV – what causes it, who it affects, how it affects your body, what symptoms to expect and likely treatments – this booklet covers the basics for you.

You'll also find useful advice about how to get the best from your haematologist, plus practical advice on how to help important people in your life understand such a rare condition. For more information, talk to your haematologist, clinical nurse specialist (CNS) or hospital pharmacist.

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Consultant Haematologist at Guy's and St Thomas' NHS Foundation Trust. Subsequently peer reviewed by Manos Nikolousis, Consultant Haematologist at Heart of England NHS Trust. The rewrite has been done by Lisa Lovelidge and reviewed by Claire Harrison. We are also grateful to Andrew Walker and Daigon North for their valuable contributions as patient reviewers.

If you would like any information on the sources used for this booklet, please email communications@leukaemiacare.org.uk for a list of references.

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About Leukaemia Care

Leukaemia Care is a national charity dedicated to ensuring that people affected by blood cancer have access to the right information, advice and support.

Our services

Helpline

Our helpline is available 9.00am - 10.00pm on weekdays and 9.30am - 12.30pm on Saturdays. If you need someone to talk to, call **08088 010 444**

Nurse service

We have two trained nurses on hand to answer your questions and offer advice and support, whether it be through emailing **nurse@leukaemicare.org.uk**, over the phone on **08088 010 444** or via LiveChat.

Patient Information Booklets

We have a number of patient information booklets like this available to anyone who has been affected by a blood cancer. A full list of titles – both disease specific and general information titles – can be

found on our website at **www.leukaemicare.org.uk/support-and-information/help-and-resources/information-booklets/**

Support Groups

Our nationwide support groups are a chance to meet and talk to other people who are going through a similar experience. For more information about a support group local to your area, go to **www.leukaemicare.org.uk/support-and-information/support-for-you/find-a-support-group/**

Buddy Support

We offer one-to-one phone support with volunteers who have had blood cancer themselves or been affected by it in some way. You can speak to someone who knows what you are going through. For more information on how to get a buddy call

08088 010 444 or email
support@leukaemicare.org.uk

Online Forum

Our online forum, **www.healthunlocked.com/leukaemia-care**, is a place for people to ask questions anonymously or to join in the discussion with other people in a similar situation.

Patient and carer conferences

Our nationwide conferences provide an opportunity to ask questions and listen to patient speakers and medical professionals who can provide valuable information and support.

Website

You can access up-to-date information on our website, **www.leukaemicare.org.uk**, as well as speak to one of our care advisers on our online support

service, LiveChat (9am-5pm weekdays).

Campaigning and Advocacy

Leukaemia Care is involved in campaigning for patient well-being, NHS funding and drug and treatment availability. If you would like an update on any of the work we are currently doing or want to know how to get involved, email **advocacy@leukaemicare.org.uk**

Patient magazine

Our quarterly magazine includes inspirational patient and carer stories as well as informative articles by medical professionals. To subscribe go to **www.leukaemicare.org.uk/communication-preferences/**

What is PV?

Polycythaemia vera (PV) belongs to a group of conditions called the myeloproliferative neoplasms (MPNs), which also includes essential thrombocythaemia (ET) and myelofibrosis (MF). PV is a chronic condition that is characterised by too many red blood cells (needed to transport oxygen around the body), and sometimes platelets and white cells in the blood.

There has been some debate about whether or not MPNs are types of cancer. This is because the word 'neoplasm' (new growth) is a term used both for cancers (malignant neoplasms) and noncancerous tumours (benign neoplasms). Because PV is characterised by uncontrolled cell growth, most haematologists and cancer organisations do classify them as a blood cancer. Whatever it's called, remember that the symptoms and prognosis can vary widely.

How common is PV?

PV is considered to be a rare disease. The number of people diagnosed each year is around two cases in 100,000 people. This may explain why you might not have heard of PV or met anyone with the condition.

PV is rarely diagnosed before

the age of 40 years, and is most common in those aged over 60. It is found in more men than women.

What causes PV?

While we don't know the exact causes of PV, research has found that about 95% of people who have PV have a change (commonly referred to as a mutation) in a protein that regulates blood cell production. This protein is known as JAK2 - short for Janus Kinase 2 - and the mutation is known as JAK2 V617F.

It is also important to note that PV is not inherited and is not passed on from parent to child, although some families do seem to develop the disease more readily than others. Finally, some researchers believe MPNs may also be triggered by past exposure to ionising radiation

(a type of radiation that has very high energy, like medical x-rays or nuclear fallout) or to some chemical substances such as benzene and toluene.

If you would like more information about ET or MF, you can order our dedicated booklets by calling the helpline on **0808 010 444** or by emailing Patient Services **support@leukaemiacare.org.uk**

Symptoms and diagnosis of PV

Before we discuss the symptoms of PV, it's important to understand how PV affects the body, compared to someone who doesn't have PV.

In someone without PV, bone marrow (the soft, fatty tissue inside your bones) contains blood stem cells that in time develop into mature blood cells – red blood cells (to carry oxygen to the tissues of your body); white blood cells (to fight infection and disease); or platelets (to help prevent bleeding by causing blood clots to form). Production of new blood cells is very closely controlled to balance the loss of worn-out cells or cells lost by bleeding or damage. About one in 5,000 cells in the bone marrow is a blood-forming stem cell; these can divide to produce more stem cells or to develop into working blood cells. An average adult produces about one trillion new blood cells each day. The healthy number of different types of blood cells varies between people but is usually kept within fairly narrow limits.

In someone with PV, the bone marrow makes too many red blood cells (although white blood cell and platelet counts may also increase),

making the blood thicker than normal. In 30% of patients with PV, this excess of red blood cells may cause blood clots to form more easily. Clots can block blood flow through the arteries and veins, potentially leading to heart attacks or strokes. Also, thicker blood doesn't flow as quickly as normal blood, preventing your organs from getting enough oxygen, which may lead to other serious problems such as angina (chest pain) and heart attacks or strokes.

What are the most common complications and symptoms of PV?

Many patients with PV have no symptoms at the time when they are diagnosed. Typically these patients are identified following abnormal results from a routine full blood test for something else.

The excess red cells, platelets and white blood cells found in people with PV may cause blood clots (thrombosis), which can block a vein or an artery and stop blood flowing - or it may cause excess bleeding. Blood clots and bleeding are major complications of PV, and are more likely to occur in

people aged over 60 years or those who have a history of thrombosis. People considered to be at low risk of developing thrombosis are those who are aged below 60 years, with no history of thrombosis, and without other risk factors for cardiac disease, such as high blood pressure, diabetes, high cholesterol or smoking.

The most common complications of PV are blood clots in the:

- **Arteries** - Arterial thrombosis, which may lead to heart attacks, strokes or damage of intestinal tissue, such as gangrene.
- **Veins** - Venous thrombosis.
- **Lungs** - Pulmonary embolism, which travels through the blood stream and causes a blockage in one of the arteries of the lungs.

An enlarged spleen (splenomegaly) is another problem that affects up to 75% of PV patients. When the bone marrow does not function correctly, the spleen over compensates by producing red blood cells, causing it to enlarge.

More rarely, the liver may also be

affected and become enlarged (hepatomegaly).

Common symptoms include:

- Fatigue
- Night sweats
- Headaches
- Bone pain
- Itching
- Fever
- Swollen spleen
- Weight loss
- Dizziness or light headedness
- Reddish or purple skin
- Bleeding or clotting

Remember, everyone is different, so not everyone has the same combination of symptoms to the same degree or severity.

Diagnosing PV

PV is often suspected if a routine blood test shows that a patient has a high red blood cell count, sometimes in conjunction with raised white cell and platelet counts. PV is diagnosed using

Symptoms and diagnosis of PV (cont.)

laboratory tests including:

- **Blood tests** - Blood tests can identify an increase in blood cells and exclude other causes of a high cell count.
- **Bone marrow biopsy** - A bone marrow biopsy may be done to look for classical signs of PV or precursors to blood cells. During a bone marrow biopsy you may have either a bone marrow aspiration or a bone marrow trephine biopsy. During a bone marrow aspiration, the doctor or nurse takes some bone marrow cells up into a syringe. A bone marrow trephine is when they remove a 1-2cm core of bone marrow in one piece. The sample is then sent to the laboratory for testing.
- **Gene mutation analysis of blood cells** - You may also be tested for gene mutations like JAK2.

What happens next?

If you have no symptoms at the time of diagnosis, you may not need to start treatment

straightaway. However, if you're experiencing symptoms from PV, you will require treatment.

The disease may remain stable or gradually progress over time. Due to this, you may never experience some of the symptoms mentioned in this booklet, and may live a normal life for many years without experiencing any complications.

When properly monitored and treated, PV patients have an excellent chance of longevity, but prognosis can be affected by a variety of things, including your individual situation, health history and the way you respond to treatment.

PV is a chronic condition, so it is important for you to regularly consult with your haematologist and report any different or new symptoms.

PV can develop into a more aggressive disease, including myelofibrosis (MF) or acute myeloid leukaemia (AML), but don't panic, as this is rare. Your consultant will be able to give you more information if this applies to you.

Treating PV

The majority of treatments for PV are aimed at managing symptoms and reducing complications, so that your quality of life is better. In particular, therapy will aim to prevent the thrombotic complications of PV. If there are no symptoms when you are first diagnosed, a 'watch and wait' approach is often recommended. This usually involves regular check-ups and blood tests, as well as your haematologist advising on ways to live a healthy lifestyle.

Our booklet, Watch and Wait, tells you all you need to know. Get your copy by calling **08088 010 444**, emailing **support@leukaemiacare.org.uk** or downloading it at **www.leukaemiacare.org.uk**

Treatments for PV aim to slow the production of blood cells to help to maintain a normal blood volume. There are a number of medications

available as well as a procedure called phlebotomy or venesection. Some of these treatments are self-administered at home and some will be done in the hospital. Information about your treatment regime will be given to you by your medical team.

Treatment options for PV

Treatment will be based on an assessment of your risk factors – i.e. your risks of thrombosis including a history of clotting, or advanced age (over 60 years). Other risks will include cardiovascular risk factors, such as high cholesterol levels, diabetes, smoking, obesity or hypertension, which are all considered by many haematologists as additional risk factors for thrombosis. Along with treatment of PV, these cardiovascular risk factors will also be treated.

Phlebotomy/venesection

Phlebotomy is the removal of blood from a vein. It is the usual starting point of treatment

Treating PV (cont.)

for most patients. A volume of blood is drawn at regular intervals and the haematocrit (viscosity or 'thickness' of the blood) concentration is brought down to normal values within a period of weeks to months. The procedure is identical to that used for donating blood to a blood bank. The immediate effect of phlebotomy is to reduce the haematocrit concentration, which usually results in the improvement of certain symptoms such as headaches, ringing in the ears and dizziness. Eventually, phlebotomy results in iron deficiency. Phlebotomy may be the only form of treatment required for many patients, sometimes for many years. Acceptable disease control may be achieved with withdrawal of a volume of blood every few months. Patients may feel tired afterwards and need to rest for a short time.

Aspirin

Along with venesection, daily, low-dose aspirin will usually be prescribed for PV when treatment is started. Low-dose aspirin may reduce your risk of developing a blood clot in an artery (thrombosis).

It acts by making platelets less likely to clump to an artery wall.

Common side effects of aspirin

Minor side effects

Low-dose aspirin does have some side effects. The most common side effects of this drug are bleeding and indigestion. You may find that you bruise more easily and that you bleed for a long time if you cut yourself. It can help to keep a supply of sterile bandages on hand so that you can apply pressure to any small cuts or wounds. If you develop indigestion or worsening indigestion on aspirin it is important to inform your haematologist.

More serious side effects

Aspirin can have more serious side effects. Some people are allergic to aspirin. Aspirin can also cause gastric irritation and bleeding in the stomach and contribute to ulcers. You may also need to be checked if you develop stomach pain or bleeding. Aspirin can also make the symptoms of asthma worse for those who suffer with it.

Your haematologist will tell you if aspirin is safe for your particular situation. He or she may suggest similar medications such as dipyridamol and clopidogrel if you suffer from side effects when taking this drug. If you are planning surgery, your doctor may advise that you stop aspirin therapy temporarily to prevent bleeding problems.

Antihistamines

Antihistamines or related drugs may be prescribed to relieve itching. Side effects may include a dry mouth, drowsiness, dizziness and restlessness. Some antihistamines can impair your ability to drive or operate heavy machinery.

Phototherapy

The use of light, called phototherapy, can be used to treat itching. It involves exposing the skin to ultraviolet light on a regular basis under medical supervision. It works temporarily to ease generalised itching. Ask your haematologist for more information.

Allopurinol

This can be used to help prevent gout (a complication of PV). It may be given before treatments for PV that work by destroying blood cells, such as chemotherapy. If you do have an episode of gout you may be prescribed allopurinol to take long-term to help prevent further episodes occurring.

Myelosuppressive drugs

Myelosuppressive drugs are agents that can reduce red cell or platelet concentrations. In some patients, phlebotomy alone can't control the overproduction of red cells and can contribute to the platelets' overproduction. Myelosuppressive agents may be used if you have an extremely high platelet count, complications from bleeding, blood clots or other serious complications that don't respond to low-dose aspirin or phlebotomy. Your haematologist may either combine drug therapy with phlebotomy or use it to replace phlebotomy to suppress your marrow's red cell and platelet production.

Treating PV (cont.)

Chemotherapy Hydroxycarbamide (also known as hydroxyurea)

This is the most commonly used chemotherapy drug to treat PV and is taken orally as a tablet. It can cause side effects, but generally these are mild. Side effects can include lowered resistance to infection, mouth and leg ulcers, reduced red blood cell numbers (anaemia), diarrhoea or constipation. Hydroxycarbamide may also affect fertility. If you are taking it, you will be advised not to get pregnant or father a child, as there may be a risk of harming the developing baby. It's advisable to use effective contraception while taking the drug and also for a few months afterwards. If hydroxycarbamide is used either alone or in combination with other chemotherapy drugs over a long period of time, it may increase the chance of the PV developing into a leukaemia.

Busulfan

The chemotherapy drug busulfan

may also be used. Busulfan is usually given as a tablet, but it can be given as an injection into a vein. It can cause similar side effects to hydroxycarbamide. Your haematologist can advise you if busulfan is suitable for you, and they will monitor your progress carefully while you take it.

It can reduce the blood count very dramatically and for this reason patients should be closely supervised whilst taking this drug. It is thought to increase the risk of leukaemia and can cause lung scarring.

Non chemotherapy treatment

Interferon alpha

Interferon is a natural substance made by the body. It is also made as a medicine. It can be used to reduce the rate at which blood cells are made. Interferon is given as an injection under the skin. Side effects can include flu-like symptoms, headaches, vision disturbances, depression, liver and thyroid disease, dizziness and tiredness.

Radioactive phosphorus (32P)

This may be used in some situations. Radioactive phosphorus is given as an injection. It irradiates (expose to radiation) the bone marrow and can lower the number of blood cells being produced. The effects of a single injection can last from months to years. Treatment with radioactive phosphorus over many years can cause an increased risk of leukaemia, but this is rare.

JAK2 inhibitors

JAK2 inhibitors were developed as a result of the discovery of the link between the JAK2 mutation and incidence of PV. They control the number of blood cells that the body makes. Currently, there is one JAK2 inhibitor for PV called ruxolitinib that can be prescribed by some doctors when hydroxycarbamide cannot be used or is not tolerated or effective.

New treatments and treatments on the horizon

Potential new JAK2 inhibitors for PV are currently being developed

and tested as a result of the discovery of the link between the JAK2 mutation and incidence of PV. These drugs are currently in early stages of testing for PV. There is, however, emerging data supporting the ability of JAK2 inhibitors to control both myeloproliferation (a disease found in the bone marrow, characterised by excess blood cells being produced) and symptoms in patients with PV.

Histone deacetylase inhibitors such as panobinostat, vorinostat, and givinostat in patients with PV is growing as a single therapy or in combination with other therapies. They are shown to stop the rapid reproduction and stimulate cell death. Pegylated interferon is also being considered as a treatment in those with high risk disease. By attaching polyethylene glycol to the drug, pegylation causes the degradation of the drug to slow down in the body, increases its duration of action and reduces the risk of side effects. Imetelstat, which is a drug called a telomerase inhibitor that stops cancer cells proliferating, is currently being researched as a treatment for PV.

Living with PV

After a diagnosis of PV, you may find that it affects you both physically and emotionally. This chapter will talk about both of these aspects.

Emotional impact of PV

Being told you have cancer can be very upsetting. Although the outlook for many PV patients is a positive one, it is a blood cancer and a rare condition and, because of this, you may need emotional, as well as practical, support. Being diagnosed with a rare disease can affect the whole of you, not just your body, and can impact you emotionally at any point of your 'journey'. It is likely that you will experience a range of complex thoughts and emotions, some of which may feel strange or unfamiliar to you. It is important to know that these feelings are all valid and a normal response to your illness.

It is important to remember that with current treatments, you can expect a good response and live a long, normal life.

Looking after you

You can live a long and normal life with PV but you may want to make

changes to your lifestyle to try to stay as well as possible after your diagnosis and during treatment. Don't try to change too much at once. Adopting a healthy way of living is about making small, manageable changes to your lifestyle.

A healthy lifestyle includes having a well-balanced diet and being physically active. With some of the side effects you may be experiencing, the idea of getting out and being active may be the last thing you want to do, but it is important to try and stay as active as possible to make you feel better and reduce some of the symptoms or side effects you may be experiencing.

"People with an MPN should not smoke and should exercise to maintain their general fitness and improve their vitality and cardiovascular performance - this also reduces their increased risk of cardiovascular disease."
- Professor Claire Harrison

One of the most commonly reported side effects of the treatment of PV is fatigue. This isn't normal tiredness and doesn't improve with sleep.

Some general tips on how to deal with fatigue include:

- Have a regular lifestyle – try going to bed and waking up approximately the same time every day and try to avoid lying in.
- Take part in regular, gentle exercise to maintain your fitness levels as much as possible.
- Reserve your energy for what you find important and build rest periods around those times.
- Before going to bed avoid stimulants such as alcohol, coffee, tea or chocolate, or using laptops, tablets or mobile phones.
- Keep your bedroom quiet and at a comfortable temperature.
- Talk about your worries with

family, friends or your doctor or nurse, or patient support groups.

- Discuss your fatigue with your doctor or nurse.

Practical support Work and finances

Being diagnosed with PV can sometimes lead to difficulties relating to your work life. Your diagnosis may lead to temporary sick leave or a reduction in working hours but it can also mean that you have to stop work altogether. You may need to make an arrangement with your employer for times when you may need to go into hospital or for those times when you may not be well enough to go into work.

Your consultant or your GP can arrange letters to your employers to confirm your diagnosis and the effects it may have on your work life. It is often worth taking time to explain PV to your employer, as it is likely they will never have heard of the disease.

Living with PV (cont.)

It is important for you to know that people with any form of cancer are covered by law by the Equality Act. This means that legally your employer cannot discriminate against you and must make reasonable arrangements and adjustments relating to your disease.

Macmillan has published a booklet about financial support following a diagnosis of cancer. They can also give you personal advice over the phone via their helpline and you can discuss which benefits you are eligible for. Some Macmillan centres can arrange face-to-face meetings with a benefits advisor. They can also provide financial assistance in the form of grants – ask your nurse in the hospital how to apply.

As PV is regarded as a cancer, you will also be entitled to apply for a medical exemption certificate which means that you are entitled to free NHS prescriptions. Your GP or specialist nurse at the hospital can provide you with the details on how to apply for this.

Talking about PV

Talking to your haematologist

PV is a rare condition. It is important for you to develop a good working relationship with your haematologist so you are given the best treatment possible for you.

The following gives advice on working well with your haematologist:

- If it's an initial consultation, take along a list of your current medications and doses, and a list of any allergies you may have.
- If you have a complicated medical history, take a list of diagnoses, previous procedures and/or complications.
- Make a list of questions to take to your appointment. This will help the discussion with your haematologist.
- It can be useful to repeat back what you have heard so that you can be sure that you fully understood.
- Note information down to help

you remember what was said.

- Be open when you discuss your symptoms and how you are coping. Good patient-doctor communication tends to improve outcomes for patients.

Other tips:

- Bring someone along to your appointment. They can provide support, ask questions and take notes.
- Don't be afraid to ask for a second opinion – most haematologists are happy for you to ask.

You need to tell your haematologist if...

You're having any medical treatment or taking any products such as prescribed medicines, over the counter treatments or vitamins. It is important to understand that treatments, including complementary therapies, which are perfectly safe for most people, may not be safe if you are being treated for PV. Remember, if you choose to start any form of complementary therapy outside of your

Talking about PV (cont.)

medical treatment, consult your haematology consultant or CNS prior to beginning it. It is important to understand the difference between complementary therapies, used alongside standard treatment, and alternative therapies, used instead of standard treatment. There is no evidence that any form of alternative therapy can treat PV.

Talking to other people

Telling people you have a rare condition like PV can be hard to explain. You might find it useful to let your close family and friends, as well as your employer, know about your health condition. It might be easier to provide people with basic information and give them information leaflets about PV if they want to know more in-depth details.

It is probably best to focus conversations on the symptoms that you are experiencing, how the condition affects you and how you feel about it. Often people misunderstand and, unfortunately, it will mostly fall to you to educate them as best as you can. Where possible, it's

advisable to let people know what you find helpful and unhelpful, in terms of what others say and do. Often people make assumptions and do what they think helps. For example, saying you look well, recounting stories of others they know with a similar diagnosis, encouraging you to look ahead and stay positive isn't always what people really want to hear. In many ways, the more you communicate with them the better.

These points may help you:

- Explain that you have a condition that means your bone marrow does not function properly, and this affects the number of blood cells it produces.
- Explain your symptoms (maybe you are tired, or have a lot of pain).
- Explain what you need (maybe more help day-to-day, or someone to talk to).

You could also consider the following when telling people about your diagnosis:

- **Find out more** - Try to find out as much as you can about your condition, from reliable internet sources, charitable organisations or your consultant haematologist. The more you know, the more you can share.
- **Have a print-out to hand** - It may help to have a factsheet to hand to share with family and friends. This will take the pressure off you having to remember everything they may want to know.
- **Explain your needs** - Try and be clear about what your needs may be. Perhaps you need help with the weekly food shop, help with cooking dinner, or someone to drive you to and from appointments. You may find that friends and family are pleased that they can do something to help you.
- **Be open about how you feel** - Don't be afraid of opening up about how you feel, as people who care will want to help you

as best they can. Talk as and when you feel comfortable, so those around you will know when you need them most.

If you're struggling to come to terms with your diagnosis and prognosis, you can speak to us on our helpline. Call us on **08088 010 444**

Glossary

Anaemia

A medical condition in which the red blood cell count or haemoglobin is less than normal.

Fatigue

Extreme tiredness, which is not alleviated by sleep or rest. Fatigue can be acute and come on suddenly or chronic and persist.

Full blood count or FBC

A blood test that counts the number of different blood cells.

Neutropenia

A condition in which the number of neutrophils (a type of white blood cell) in the bloodstream is decreased.

Pancytopenia

Deficiency of red cells, white cells, and platelets in the blood.

Platelet

A disc-shaped element in the blood that assists in blood clotting. During normal blood clotting, the platelets clump together (aggregate).

Red blood cell

The blood cell that carries oxygen. Red cells contain haemoglobin, which permits them to transport oxygen (carbon dioxide).

Thrombocytopenia

Deficiency of platelets in the blood.

White blood cell

One of the cells the body makes to help fight infections. There are several types of white blood cells. The two most common types are the lymphocytes and neutrophils.

Tell us what you think!

If you would like to give us some feedback about this patient information booklet, please hover over the code to the right using your phone or tablet's camera. Click the link as it appears and this will take you to a short web form to fill in.

Suitable for Android, iPhone 7 and above.



Useful contacts and further support

There are a number of helpful sources to support you during your diagnosis, treatment and beyond, including:

- Your haematologist and healthcare team
- Your family and friends
- Your psychologist (ask your haematologist or CNS for a referral)
- Reliable online sources, such as Leukaemia Care
- Charitable organisations

There are a number of organisations, including ourselves, who provide expert advice and information.

Leukaemia Care

We are a charity dedicated to supporting anyone affected by the diagnosis of any blood cancer.

We provide emotional support through a range of support services including a helpline, patient and carer conferences, support group, informative website, one-to-one buddy service and high-quality patient information. We also have a nurse on our help line for any medical queries relating to your diagnosis.

Helpline: **08088 010 444**
www.leukaemicare.org.uk
support@leukaemicare.org.uk

Bloodwise

Bloodwise is the leading charity into the research of blood cancers. They offer support to patients, their family and friends through patient services.

020 7504 2200
www.bloodwise.org.uk

Cancer Research UK

Cancer Research UK is a leading charity dedicated to cancer research.

0808 800 4040
www.cancerresearchuk.org

Macmillan

Macmillan provides free practical, medical and financial support for people facing cancer.

0808 808 0000
www.macmillan.org.uk

Maggie's Centres

Maggie's offers free practical, emotional and social support to people with cancer and their families and friends.

0300 123 1801
www.maggiescentres.org

Citizens Advice Bureau (CAB)

Offers advice on benefits and financial assistance.

08444 111 444
www.adviceguide.org.uk

Leukaemia Care is a national charity dedicated to providing information, advice and support to anyone affected by a blood cancer.

Around 34,000 new cases of blood cancer are diagnosed in the UK each year. We are here to support you, whether you're a patient, carer or family member.

Want to talk?

Helpline: **08088 010 444**

(free from landlines and all major mobile networks)

Office Line: **01905 755977**

www.leukaemiacare.org.uk

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Registered charity
259483 and SC039207

Leukaemia Care
YOUR Blood Cancer Charity

