Haematology

Treatments for immune thrombocytopenia (ITP) in adults

Information for patients, relatives and carers

Introduction

Immune thrombocytopenia (ITP) is a rare autoimmune disorder. It causes the immune system to attack and destroy platelets in the blood.

We need platelets to help blood to clot when we bleed. We have a lot more platelets than we need to stay safe. So, having low platelets on its own is not life-threatening and you may not need treatment.

But if you're at high risk of bleeding, your doctor may decide you need treatment. This leaflet aims to introduce some of the treatment options available for treating adults with ITP.

How will an ITP treatment help me?

The aim of ITP treatment is to achieve a platelet count that prevents major bleeding episodes and controls symptoms. Treatment will be tailored to you individually. Some of the factors considered before decision making are:

- your risks of bleeding
- how quickly a rise in platelet count is needed
- the impact of treatment on your quality of life
- considering any side effects

Treatment options for ITP are divided into 'first-line' and 'second line' treatments, based on which ones would be used first. Clinical trial options may also be available.

First-line treatments

- corticosteroids
- intravenous immunoglobulins (IVIg)
- (platelet transfusions in emergency situations)

Second-line treatments and beyond

- thrombopoietin receptor agonists (eltrombopag, avatrombopag and romiplostim)
- immunosuppressants (rituximab, azathioprine, mycophenolate mofetil, fostamatinib)

Treatments used less often

- ciclosporin
- cyclophosphamide
- danazol
- dapsone
- vincristine

Surgical option

- splenectomy

Supportive therapy

- tranexamic acid, norethisterone, iron supplements

First-line treatments

Corticosteroids

Corticosteroids (also called steroids) are the standard first treatment for ITP. They suppress the activity of your immune system, so they are called immunosuppressive. They **increase** the platelet count by:

- reducing the destruction of platelets
- reducing the production of antibodies that attack platelets

They may also reduce bleeding by having a direct effect on your blood vessels.

Examples of corticosteroids

Prednisolone, dexamethasone and methylprednisolone are different corticosteroids used in ITP.

- prednisolone is usually tried first. It is taken as a tablet you swallow (orally)
- dexamethasone has been found to cause a faster rise in platelet count. It is also taken as a tablet you swallow
- methylprednisolone is used when first-line treatments have not worked for a patient. Its response is more short-lived. It is given as an injection or an infusion rather than tablet. It may require maintenance with an oral corticosteroid

Corticosteroids can be well-tolerated in ITP to start with. About 7 to 8 out of 10 patients (70 to 80%) will respond. Most patients respond well to corticosteroids and see a rise in platelet count.

But the platelet count often falls once treatment is stopped, with the majority requiring additional treatment.

What are the side effects of corticosteroids?

Side effects vary with dose and how long the drug is taken. With longer courses of corticosteroids people will often get side effects. The most noticeable are mood change, increased appetite, weight gain, swelling in the ankles and moon shaped face. People may feel more irritable, anxious, low or high due to the changes in mood from steroid therapy. Some people call this 'roid rage'.

Other common side effects (listed A to Z) – adrenal insufficiency ・anxiety ・avascular necrosis (death of bone tissue due to lack of blood supply) ・back fat ・cataracts ・diabetes ・fluid retention ・gastrointestinal (GI) distress and ulcers ・immunosuppression ・ insomnia ・moon face ・opportunistic infections ・osteoporosis (weakening bones) ・psychosis ・raised blood sugar ・skin changes including thinning hair and hair loss.

Drugs to prevent side effects

Extra medicines are prescribed with steroids to try and prevent some of these side effects, including:

- dugs that reduce the amount of acid made in your stomach (proton pump inhibitors, such as omeprazole or lansoprazole)
- calcium and vitamin D supplements for bone health, if you're found to have low levels
- bone protective treatment (bisphosphonate called alendronic acid) may be considered for some patients

Corticosteroids are stopped by gradually reducing the dosage to avoid severe symptoms of withdrawal.

When you're on corticosteroids:

- you'll have regular blood tests to check how they are working
- talk to your doctor if you're worried about psychological changes or other serious side effects
- do not stop taking corticosteroids without telling your doctor first
- avoid close contact with people who have contagious infections, like chicken pox, shingles and measles
- if you're diabetic, tell your doctor, or your diabetic clinic. You may need extra precautions or treatment to control your blood sugar
- try to keep your bones healthy. Consider these lifestyle and dietary measures:
    - do regular weight-bearing exercise (speak to your haematology team first)

- avoid smoking. (For help to quit smoking see www.nhs.uk/better-health/quit-smoking/)
- reduce alcohol intake (discuss with your haematology team)
- make sure you get enough calcium every day (700 –1200 mg)
- make sure you get enough vitamin D every day (800 IU). You can do this through diet or by taking supplements

Intravenous immunoglobulins (IVIg)

IVIg contains purified antibodies obtained from donated blood. It is given by infusion through a vein usually in your arm (intravenously). You usually just have one dose, but this can be repeated if necessary.

- IVIg stops platelet destruction. But we do not understand exactly how this works
- IVIg works quickly. An increase in platelet count can be seen within 24 hours to 3 days
- response to IVIg is usually short lived. Up to 8 out of 10 patients (80%) respond initially to IVIg. About half achieve normal platelet counts. But most patients will relapse 2 to 4 weeks after treatment

We usually give IVIg when a rapid increase in platelet count is needed. For example:

- before a surgery
- when you have significant bleeding symptoms
- if corticosteroids cannot be given

In some patients, using IVIg with corticosteroids may:

- enhance the IVIg response
- reduce infusion reactions
- prevent aseptic meningitis. Aseptic meningitis is when the lining of the brain (meninges) becomes inflamed without there being any bacteria or virus (aseptic).

To reduce the chances of aseptic meningitis, you may be given premedication such as antihistamines, injectable steroid such as hydrocortisone and paracetamol tablets on the day of infusion.

Common side effects of IVIg:

The **most common side effect** is moderate but sometimes severe headaches from aseptic meningitis.

The other less common side effects are (listed A to Z) – blood clots (thrombosis) ・changes in blood pressure, infusion reactions such as chills or allergic rashes ・diarrhoea ・fast heart rate

・fatigue ・fever ・flushing ・low white cell count for a short period of time (transient neutropenia) ・nausea ・poor kidney function (renal insufficiency)

As IVIg comes from donated blood, there is an extremely small risk (1 in many millions) of infections such as hepatitis and HIV.

When you're on IVIg:

- you'll have regular blood tests to check how the treatment is working
- you can contact the helpline (020 3311 77 55) if you experience any severe headaches, with or without feeling or being sick, dizzy spells or fever
- make sure you stay hydrated. Aim for 1.5 L to 2L of fluids every day, unless you've been told otherwise
- **tell your doctor of any persistent or serious side effects**

First-line treatments: in an emergency

Examples of an emergency include when you:

- require surgery
- are at high risk of bleeding
- have active bleeding in the brain, gut or urinary tract

At this time, your doctor may switch your treatment from corticosteroids to IVIg. Or they may combine the first-line therapies. Prednisolone and IVIg are recommended if you have uncontrolled bleeding. High dose methylprednisolone is also effective in these cases.

Your doctor may also consider a platelet transfusion or treatment with tranexamic acid and some second-line treatments.

Second-line treatments

Thrombopoietin receptor agonists (TPO-RA)

Thrombopoietin (TPO) is a protein that regulates platelet production. **Thrombopoietin receptor agonists** (TPO-RA) are drugs that stimulate platelet production by acting on a cell called megakaryocytes that is found in bone marrow. Megakaryocytes are parent cells that produce platelets.

- **eltrombopag** is given as a tablet that you swallow. An initial rise in platelet count is typically seen after 7 to 28 days

- **romiplostim** is given as a weekly under the skin (subcutaneous) injection. An initial rise in platelet count is typically seen after 5 to14 days
- Avatrombopag is an oral tablet that you take regularly. It typically takes 10 to 13 days before a rise in platelet count is noticeable

Some people can come off treatment completely after some time. But there is no test to identify who will be able to do this.

TPO-RA may be used on its own or in combination with other medications if necessary.

Advantages of TPO-RA

- TPO-RA does not suppress the immune system. So, they do not increase the risk of infection and do not cause the same side effects as steroids
- both romiplostim and eltrombopag have been shown to improve health related quality of life. Eltrombopag also improves bleeding and fatigue in some people

Disadvantages of TPO-RA

- due to the way they work, these drugs are considered maintenance therapy, not curative therapy. Though some patients can stop these treatments and their ITP does not come back
- most patients' platelet count drops when the drug is stopped. Approximately 1 in 10 (10%) gradually fall below baseline platelet count. But some patients can discontinue treatment long-term
- all require regular monitoring
- response may be delayed,1 to 4 weeks, depending on the starting dose
- some patients have very fluctuating counts. This means they need more frequent blood tests or dose changes or another treatment

Common side effects of TPO-RA – all types (listed A to Z – headaches (in at least 2 out of 10 patients (20%) ・increased bone marrow reticulin (a type of fibre in the bone marrow

・worsening thrombocytopenia (low platelet counts) after stopping treatment

Eltrombopag – bloating ・cataracts (uncommon) ・fluid retention ・liver function abnormalities ・lower iron levels ・muscle aches and pains

Romiplostim – fatigue ・nosebleeds ・joint pain and bruises, seen in at least 2 out of 10 patients (20%)

When you're on TPO-RA:

- take at the same time each day. If you miss a dose, take it as soon as you remember
- never take additional doses to make up for a missed dose

- eltrombopag (safe to take on an empty stomach)
- do not consume substances containing calcium for 4 hours before and 2 hours after taking your medicine
- do not take with other medications or vitamins
- you will have frequent blood tests at first. Then they will be done at least once a month to monitor your response and identify any side effects
- contact the team for further information if you are on TPO-RA
- **inform your doctor of any persistent or serious side effects**

Immunosuppressants

Immunosuppressive drugs are medicines that work by decreasing the activity of the immune system. They are often used in chemotherapy or other autoimmune conditions.

They work in ITP by suppressing the destruction of your platelets by your immune system. This then helps to increase your platelet count. Several immunosuppressive drugs are used in ITP:

Rituximab

Rituximab is a drug containing manufactured antibodies that target your B cells. These are a type of white blood cell in your body that produce antibodies to help fight infections.

Reducing the number of B cells will reduce the total amount of antibodies you produce. This includes those that target and destroy platelets in ITP.

Rituximab is given through a vein usually in your arm over several hours.

You either have:

- two doses a fortnight apart
- one dose a week for four weeks

The aim is to induce a long-term response.

Between 4 out of 10 and 6 out of 10 patients (40% to 60%) treated with rituximab have a platelet response. Sometimes, a response is seen immediately. But it can take up to 3 months. Other treatments may be considered to control your symptoms while waiting for a response.

About 15 to 20% of responders treated with Rituximab can have long response periods that last more than 3 to 5 years. However, many patients will see a drop in platelet count (relapse) within 1 to 2 years. Not all patients who relapse need treatment, but some responders may require repeated treatment months to years later.

Rituximab and dexamethasone are sometimes used together as they are more likely to achieve a sustained response.

Common side effects of rituximab

Infusion reaction is a common side effect of rituximab. This is the sudden onset of fever, rigors, allergic skin rashes (hives) and chills. This usually happens with the first infusion in about 18 out of 100 patients (18%).

You will be given paracetamol, steroids and antihistamines prior to starting the infusion to reduce the chances of infusion reactions. These medications may be repeated if you experience reactions, depending on the severity. Infusion may be stopped temporarily until symptoms improve and may be restarted at a slower rate. Occasionally, the infusion may be abandoned if the reaction is very severe.

Other side effects are – nausea ・fatigue ・headache ・itching ・breathing difficulty ・runny nose ・being sick (vomiting) ・low blood pressure ・ flushing

Rare but serious side effects include – irregular heart rhythm ・increased risk of infection due to long-term immunosuppression

An incredibly rare but serious side effect of rituximab is an infection of the brain called PML (progressive multifocal leukoencephalopathy). But this almost always happens to patients who have received lots of other immunosuppressive agents as well.

What to do when on rituximab:

- you will be screened for the hepatitis B virus before starting rituximab by doing specific blood tests. If you've been exposed to hepatitis B virus in the past, the virus can come back (be reactivated) when your immunity is weakened by the rituximab therapy. If this is the case, you will be advised to take an antiviral for a period of 18 months. This will stop the disease coming back (prophylactic). The treatment is oral tablets, which is to be taken every day for the recommended period.
- you may need a pneumococcal vaccination before starting rituximab. This vaccine protects you from some types of bacterial infections, like meningitis, pneumonia and sepsis
- use contraception during treatment and for 12 months after treatment (discuss this with your doctor prior to starting treatment)
- avoid breastfeeding during treatment and for 12 months after treatment. Discuss this with your doctor in clinic
- **inform your doctor of any persistent or serious side effects**

Azathioprine

Azathioprine is an immunosuppressant that you take as a tablet. It can be used in combination with steroids or alone.

It's sometimes used in patients who:

- have not responded to other drugs (chronic refractory ITP). Between one third and two thirds of patients with refractory ITP respond to azathioprine
- are pregnant
- are planning a family

It may take a while before your platelet count increases with azathioprine. The first response is seen after 30 to 60 days. You may need to continue treatment for 3 to 6 months before we see a response. Azathioprine is reduced gradually under close monitoring.

Common side effects of azathioprine

Side effects are infrequent and mild. They include (listed A to Z) – abnormal liver function ・bone marrow suppression ・feeling sick (nausea) ・increased risk of infections ・low white blood cells (neutropenia) ・pancreatitis ・sweating ・weakness

There is also an increased risk of developing lymphoproliferative disorders, like lymphoma, and other malignancies, such as – skin cancer ・sarcoma and uterine cervical cancer in situ

Take extra care in the sun as skin cancers often occur parts of the body exposed to the sun.

What to do when on azathioprine:

- you'll have regular blood tests to monitor complete blood count and liver function
- take extra care with sun-exposed skin, as there's an increased risk of skin cancer
- if you are considering getting pregnant, please discuss this with your doctor
- **tell your doctor about any persistent or serious side effects**

Mycophenolate mofetil (MMF)

MMF works by reducing the production of a type of white blood cell, called lymphocytes. These include your antibody-producing B cells and T cells. MMF is taken by mouth.

MMF does not work immediately. It may take up to 12 weeks to see an effective response. Some patients only need treatment for a few years and can come off treatment. Others need more long-term use.

It has been shown to be effective in some refractory ITP. Several studies found 53% to 69% response rates in refractory ITP treated with MMF and 52% response rate in primary and secondary ITP.

It is generally tolerated better than other immunosuppressants. It is easy to stop taking.

Common side effects of MMF

Headache is the most common and dose-limiting side effect. **Others are (listed A to Z)** – backache ・eating disorder (anorexia) ・feeling sick (nausea) ・swollen tummy (abdominal distension)

Other possible side effects include increased risks of infection and cancer.

When you're on MMF

- you'll have monthly blood tests to monitor full blood count, liver function and creatinine levels
- avoid exposure to strong sunlight
- men and women need to use contraception during treatment and 3 months after treatment. There is an increased risk of fetal abnormalities
- **tell your doctor about any persistent or serious side effects**

Fostamatinib

Fostamatinib works by inhibiting macrophages. These are immune cells that can contribute to platelet destruction in ITP. It is taken by mouth. It's been shown to be effective in some refractory ITP patients.

Several studies found 43% to 78% response rates in refractory ITP treated with fostamatinib. It can take between 2 to 8 weeks before we see a response to treatment.

Common side effects to fostamatinib

Very common side effects are – diarrhoea ・ high blood pressure (hypertension)

Others can include (listed A to Z) – abdominal pain ・deranged liver function ・dizziness ・fatigue ・flu-like illness ・headache ・low neutrophil count ・nausea ・rash ・respiratory tract infections

When you're on fostamatinib:

- you'll have monthly blood tests to monitor full blood count and liver function
- monitor your blood pressure
- avoid pregnancy during treatment and for at least 1 month after treatment
- **tell your doctor about any persistent or serious side effects**

Treatments used less often

Cyclosporin A

Cyclosporin A is an immunosuppressant that you take as a tablet. The rate of response depends on the dose. A response may take about 3 to 4 weeks. It is effective on its own or when used with corticosteroids such as prednisolone. About 30 to 50 of 100 people (30% to 50%) will respond to cyclosporin A. But many people have adverse effects.

Common side effects of cyclosporin A

Side effects include (listed A to Z) – abnormal hair growth ・abnormal sensations (paraesthesia) ・enlarged gums ・fatigue・ high blood pressure ・increase in serum creatinine ・indigestion ・ kidney disease (renal insufficiency) ・muscle aches and pain ・tremor and neuropathy

Some of these side effects mean come patients cannot take cyclosporin A, for example, older patients and those with renal insufficiency.

When you're on cyclosporin A:

- you'll have monthly blood tests to monitor your liver, kidney functions and cyclosporin A levels
- avoid excessive exposure to ultraviolet (UV) light, including sunlight
- do not have grapefruit or grapefruit juice when you take the tablet
- monitor your blood pressure regularly
- **tell your doctor about any persistent or serious side effects**

Cyclophosphamide

Cyclophosphamide is an immunosuppressive drug which can be taken by mouth or intravenously. It has been used in patients who have not been responsive to corticosteroids or splenectomy, or both. Time to response varies between 1 to 16 weeks and response rate is around 50 in 100 people (50%).

Common side effects of cyclophosphamide

Mild to moderate side effects include: (listed A to Z): acute blood clot (DVT) ・feeling sick and being sick (nausea and vomiting) ・low white blood cell count (neutropenia)

Acute myeloid leukaemia has also been reported but is rare

When you're on cyclophosphamide:

- you'll have blood tests regularly to monitor for side effects
- avoid using cyclophosphamide if you are pregnant

- stop breastfeeding during treatment and for 36 hours after stopping treatment
- **tell your doctor about any persistent or serious side effects**

Dapsone

Dapsone is an antibacterial agent with some anti-inflammatory effects. Its role in increasing platelet count in ITP is not fully understood. But it's thought to suppress the immune system, stopping it from attacking your platelets. It is given as an oral medication.

Up to half (50%) of patients respond to dapsone. It takes about 3 weeks for platelet counts to increase. About two thirds of responders sustain their increased platelet count after treatment.

Common side effects of dapsone – infrequent and treatable – swollen tummy (abdominal distension) ・feeling sick (nausea) ・anorexia ・and haemolytic anaemia (breaking down of red cells) particularly in those with glucose-6-phosphate dehydrogenase (G6PD) deficiency.

Dose-dependent haemolysis is reported in up to 20% of patients without G6PD deficiency (mostly mild.)

Severe – skin rash (this may require treatment to end)
Others – diarrhoea ・fatigue ・nerve damage (neuropathy) ・shortness of breath (dyspnoea) ・sulfone syndrome

When you're on dapsone:

- you'll be screened for the genetic disorder G6PD before being started on dapsone
- consult your doctor before breastfeeding
- limit alcoholic drinks and avoid the use of marijuana as this can make you more dizzy or tired
- **talk to your doctor about any persistent or serious side effects**

Danazol

Danazol contains a synthesised and weakened form of the hormone testosterone. It is thought to increase platelets by interfering with the action (antagonizing) of oestrogen and immune modulation. It is given as an oral drug, taken 2 to 4 times daily.

Initial response is seen within 14 to 90 days. Nearly 70 out of 100 patients (67%) respond to danazol. Forty six out of 100 (46%) remain in remission after nearly 10 years (119 months). It is often less well-tolerated in women because of the effect on facial hair.

Common side effects of danazol
Common side effects (listed A to Z) – abnormal liver function ・acne ・decreased breast size

・flushing ・increased cholesterol ・increased facial hair ・vaginal dryness and irritation ・voice changes ・weight gain

Tell your doctor **immediately** if any of these unlikely but serious side effects happen – swelling hands, ankles or feet ・menstrual changes (such as spotting, missed periods) ・ mental or mood changes (such as nervousness, mood swings)

When you're on Danazol:

- you can take it with or without food but need to take it the same way each time
- use effective contraception as this drug may harm the unborn baby. Tell your doctor **immediately** if you become pregnant or think you may be pregnant
- consult your doctor before breastfeeding
- **tell your doctor about any persistent or serious side effects**

Vincristine

Vincristine is another drug often used in chemotherapy. It has some immunosuppressive effects that makes it effective in ITP. How it works in ITP is not well understood. It is given intravenously over an hour. About 50 to 70 out of 100 patients will have an initial response to vincristine. A rise in platelet count can be observed within 7 to 14 days, though this is usually short lived.

Common side effects of vincristine (listed A to Z) – being sick (vomiting) ・constipation ・dizziness ・feeling sick (nausea) ・headaches ・increased risk of infection ・loose or watery poo (diarrhoea) ・mouth sores・ temporary hair loss ・weight loss

It is common for this medicine to affect your nerves and muscles**.**

Tell your doctor if you have any of the following – decreased peeing (urination) ・ difficulty walking ・hoarseness・ inability to move your muscles (including the muscles of your face and other parts of your body) ・drooping eyelids loss of coordination or balance, or both ・numbness tingling, burning, pain of the feet or hands pain (including in the joints, back, muscles) ・painful or difficult peeing・ trouble speaking ・weakness

Inform your doctor right away if you experience any serious side effects, such as – easy bleeding or bruising mental or mood changes (such as depression, hallucinations, confusion) severe tiredness ・changes to hearing and vision

Get immediate medical help if you experience any very serious side effects, such as – seizures ・chest, jaw or left arm pain ・ signs of liver problems (such as dark urine, persistently feeling or being sick, stomach and abdominal pain, yellowing of eyes or skin, or both)

Vincristine can affect fertility, so speak to your doctor if you want to have children before starting the drug.

When you're on vincristine:

- avoid contact with people that have infectious disease such as chickenpox, measles, flu
- tell your doctor before having vaccinations
- be careful while using sharp objects and avoid contact sports
- drink plenty of fluids (unless told) to help reduce some of the side effects to your kidneys
- limit alcoholic beverages and avoid the use of marijuana
- use effective contraception (male and female) while on vincristine. It affects the developing baby as well as your sperm and eggs
- do not breastfeed while on the drug
- **tell your doctor about any persistent or serious side effects**

Surgical option

Splenectomy

A splenectomy is an operation to remove your spleen. The spleen is the major organ involved in the production of antibodies against platelets and in the removal of antibody-coated platelets in ITP.

A splenectomy can sometimes have an immediate response. There is the possibility of lifelong remission, or enough response to remove the need for medications in some patients. Although splenectomy is the most predictable way to get lasting remission, we usually wait for at least 12 months after your diagnosis. This is because it is irreversible (cannot be undone) and there is a chance of your ITP going into remission on its own (spontaneous remission).

It is often reserved as a last measure for patients:

- with life-threatening bleeding
- adults who do not respond to corticosteroids
- patients with chronic primary ITP

Success rates

- 8 out of 10 (80%) of patients respond to splenectomy after 1 to 24 days
- 2 out of 3 patients have a sustained response and need no additional therapy after over 5 to10 years

- in a review of 2,623 splenectomised adults, nearly 7 out of 10 (66%) maintained a platelet count of above 100 x 10^9/L up to 29 months after their procedure
- another study shows nearly all (92%) of 1,223 patients had an early rise in platelet count and over 7 out of 10 (72%) maintained an increased platelet count after 5 years

But splenectomy does not eliminate the risk of relapse. Keyhole (laparoscopic) splenectomy is just as effective as open surgery. It is less invasive and needs less time for recovery.

Risks of splenectomy

The spleen in an important organ of the immune system. Taking it out puts patients at lifelong risk of life-threatening infections.

We recommend patients have vaccinations and boosters before and after a splenectomy. Vaccinations against pneumonia and meningitis are particularly important. The reported death rate for splenectomy for ITP is less than 1 in 100 cases (1%). Deaths are mainly due to bleeding during or after the surgery.

Bleeding and local infection are the short-term complications of splenectomy. Other complications are – the need for transfusion ・hernia formation ・damage to nerves (nerve palsies) ・blood clots (thrombosis) ・bands of scar-like tissue inside the abdomen (intra-abdominal adhesions) that can lead to obstructions

All patients should have blood thinning injections (anticoagulation) around the time of the procedure and possibly for some time afterwards. This is to reduce the risk of a blood clot.

What to do after a splenectomy:

- speak to the team if you are travelling, as you might need specific vaccinations
- antibiotic prophylaxis, usually with penicillin, is given after splenectomy. Duration of prophylaxis may vary
- seek emergency help if you see any signs of infection
- if you visit any other hospital, alert the medical team that you are splenectomised. it's a good idea to carry an alert card or a wear a medic alert bracelet

Supportive therapies

Tranexamic acid

Tranexamic acid is a drug used to reduce or stop unwanted bleeding. It does not treat ITP but is used during periods of heavy bleeding or when you are at risk of bleeding heavily.

For example, during periods (menstruation) or when you are having dental work done. Tranexamic acid works by preventing clots from breaking down. This allows clots to form to stop the bleeding.

Common side effects – feeling sick (nausea) ・being sick (vomiting) ・loose and watery poo (diarrhoea)

When you're on tranexamic acid:

- if you're at risk of heavy bleeding during your periods, take tranexamic acid daily, typically for up to 4 days. Start on a heavy day
- tranexamic acid may be recommended if you are having dental work. To be taken as tablets or a mouthwash
- **tell your doctor about any ongoing or serious side effects**

How do I contact my team?

Emergency contact: at Hammersmith Hospital, we operate a 24-hour emergency triage service for our patients**.** Call the service on 020 3311 7755.

For non-urgent queries, email the team on imperial.immunehaematology@nhs.net

Haematology secretaries: 020 3313 8117

Haematology day care: 020 3313 4594

Haematology clinic reception: 020 3313 3297

How do I make a comment about my visit?

If you have any **suggestions** or **comments** about your visit, please either speak to a member of staff or contact the patient advice and liaison service (**PALS**). The PALS team will listen to your concerns, suggestions or queries. They are often able to help solve problems for you.

call: **020 3313 0088** email: imperial.pals@nhs.net

Or, if you need to **complain**, contact the Complaints department.

call: **020 3312 1337 / 1349** email: ICHC-tr.Complaints@nhs.net

write: Complaints department, fourth floor, Salton House, St Mary's Hospital, Praed Street, London W2 1NY

Alternative formats

This leaflet can be provided on request in large print or easy read, as a sound recording, in Braille or in alternative languages. Please email the communications team: imperial.communications@nhs.net

Wi-fi

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