

## Rituximab treatment

Your doctors have suggested that you are likely to benefit from a monoclonal antibody treatment called Rituximab. Rituximab can be given on its own, in combination with chemotherapy or as maintenance treatment. Your doctor or specialist nurse will discuss this with you. They have weighed the expected benefits, in terms of treating your disease, against the possibility of side effects. If you are still unsure about the benefits of this treatment, then please ask. This factsheet explains what you can expect from the treatment you will receive.

### Monoclonal antibodies

Monoclonal antibodies such as Rituximab recognise a protein called CD20 that is found on the surface of white blood cells called B Lymphocytes. CD20 is found on both normal B Lymphocytes and abnormal (cancerous) B cells. The antibody 'locks on' to the protein (like a key in a lock). This process may trigger the body's immune system to attack the cells. Rituximab attacks both abnormal (malignant) and normal B-cell lymphocytes. The body replaces any normal white blood cells which may be damaged, so the risk of side effects from this treatment is small.

Rituximab is used to treat many different types of B cell Lymphomas or Lymphoid malignancies that have the CD20 protein. It is also used to treat non-malignant conditions such as EBV (Epstein Barr Virus).

### Treatment plan

Rituximab is given in a day setting; it is given as an infusion (drip) into your vein through a cannula (fine tube). Some people can have an allergic reaction to this treatment. To reduce the risk of this, the first dose is given slowly over a number of hours. You will be given steroids, antihistamines and paracetamol before the treatment begins to reduce the effects of any reaction. Further doses can be given over one and a half to two hours if there are no complications with the first infusion.

Your doctor or nurse will discuss with you the number and frequency of infusions you are likely to have.

### Side effects of Rituximab

All drugs can have side effects and this is true of Rituximab. Potential side effects you may experience are as follows:

- Allergic reactions - These can occur while the infusion is in progress, but should not last for long. This is due to the reaction of your body to a foreign antibody. You will be closely monitored for the following symptoms and you should report them immediately if they occur:



- Flu like symptoms such as fever, chills, headache, dizziness
- Feeling breathless or wheezy
- Feeling sick (nauseas)
- Development of a rash or itchy skin
- Feeling of swelling in the tongue, throat or lips
- Tightness or pain in the chest.

The infusion may need to be stopped and then restarted once the symptoms have gone. Any lingering effects should disappear once treatment is completed. If, however, you experience any of these symptoms or feel unwell at home following the infusion, please contact your nurse as soon as possible.

- Low blood pressure – This may happen during the infusion. Your blood pressure will be checked regularly. If you normally take any medication to lower your blood pressure, please tell your doctor or nurse.
- Nausea and vomiting – Rituximab can sometimes cause this. It can usually be managed with anti-sickness (anti-emetic) drugs. For further information please visit Macmillan Cancer Support at [www.macmillan.org.uk](http://www.macmillan.org.uk)
- Headaches – If you have a headache for more than 24 hours you must inform the doctor or Clinical Nurse Specialist.

### Later side effects

Risk of infection – Rituximab can reduce the number of normal white blood cells, particularly B lymphocytes. These cells are responsible for fighting infections, particularly viruses, so you may be more prone to colds. It can also lower your immunity by reducing the levels of one antibody in your blood called IgG; this can further increase your risk of infection. If your IgG level is found to be low and you have frequent infections, you may require immunoglobulin infusions or low dose antibiotics. If you feel unwell at home, please contact your nurse as soon as possible.

### Rare side effects

- Thrombocytopenia – Low platelet count which may increase your tendency to bleeding and you may need platelet transfusions.
- Low red cell count – Anaemia; you may require a blood transfusion.
- Neutropenia – Low white blood count; this may increase your risk of infection.
- Reactivation of hepatitis infection - If you have ever had Hepatitis in the past, this can be reactivated following Rituximab infusions. For this reason we test all patients receiving this treatment for Hepatitis B and C.
- Progressive Multifocal Leukoencephalopathy (PML) – This is a rare side effect causing serious brain infection. If you notice any of the following side effects, you must report and tell your medical team immediately:
  - Memory loss, confusion or difficulty thinking
  - Loss of balance, weakness in one side of the body or difficulty walking
  - Changes in speech
  - Loss of vision.



- Heart problems – You must inform your doctor or nurse if you are known to have heart problems. In some patients, irregular heartbeats or chest pain may occur particularly in those known to have these conditions already.
- Pregnancy – Rituximab can cross the placenta to an unborn baby. It is therefore important to use effective contraception during treatment with Rituximab and for at least twelve months after treatment finishes.
- Breastfeeding – Rituximab can cross into breast milk and therefore you should not breastfeed whilst on treatment.

### Blood clots

Both the lymphoma and the antibody can increase the risk of developing blood clots. Blood clots can occur in the veins causing problems such as deep vein thrombosis (clot in the leg causing swelling of the leg) or pulmonary embolus (clot in the lung causing shortness of breath or chest pain). Blood clots can also occur in the arteries leading to a heart attack, stroke or impairment of the blood supply to a limb. Blood clots can be life threatening but can usually be treated by drugs that thin the blood. If you are concerned about any of the above, please inform your doctor immediately.

Airline travel is also associated with an increased risk of blood clots. It is important that you inform your hospital team of any travel plans while you are on treatment.

We have listed the most common side effects of this chemotherapy. You may experience some or several of these side effects listed above and they may be mild, moderate or severe. Some can occasionally be life-threatening. As with all drugs, there may be other side effects not mentioned here that you may experience. Because of the risk of side effects, it is important that you:

- Always tell your doctor if you suffer from any of these side effects, or if you have experienced any new symptoms since your last visit. Your doctor can help you by giving you medication or advice to reduce or stop these side effects from occurring in the future.
- Always tell your doctor about any other medicine you are taking or planning to take, including herbal and complementary therapies.
- Always consult your doctor before having any other procedure, for example, dental work or vaccinations.

### Contact details

Please contact your Clinical Nurse Specialist if you have any concerns or queries.

Sutton: 020 8661 3987

Chelsea: 020 7808 2247

Alternatively, please call:

**The Royal Marsden Macmillan Hotline:** 020 8915 6899

(available 24 hours a day, 7 days a week)

