Resource

Rituximab

Rituximab was originally approved as a cancer drug in 1998 (and is still used in this way today). It was approved for use in RA in 2006. As with methotrexate, the dose is much lower when used to treat RA.

Print

Original Biologic drug	Method of administration
Rituximab (Mabthera)	Infusion (Mabthera is also available by injection)

Background

Rituximab was originally approved as a cancer treatment in 1998 and is still used for this today. It was approved for use in rheumatoid arthritis in 2006 and has since been approved to treat other rheumatological conditions including systemic lupus erythematosus and some types of vasculitis. As with methotrexate, the dose is much lower when used to treat RA.

How does it work?

Rituximab works in a slightly different way to other biologic medicines. Rituximab targets a protein called CD20 on the surface of B-lymphocytes, a type of white blood cell. Rituximab attaches to CD20 and triggers the cells to break down. B-lymphocytes usually produce antibodies against infections but in RA they also produce antibodies that cause other cells in the immune system to start causing inflammation. Rituximab only affects B cells at a mature stage of their development. It is partly for this reason that infusions of rituximab must be 6 months or longer apart, to allow the remaining lymphocyte cells to replenish and mature before the medicine can be given again.

Most commonly reported side effects

As with all medicines, rituximab does have possible side effects. It is important to remember that these are only possible side effects. They may not occur at all

Common side effects may include:

- Reactions to the infusion (particularly the first infusion), which can occur during or within the first 2 hours of the infusion, present with symptoms such as fever, chills and shivering. If you experience any side effects during the infusion, you must tell a member of staff. Infusion reactions can often be managed by slowing the infusion or in some cases the infusion may be

stopped.
- Infections such as pneumonia and urinary tract infection
- Allergic reactions that are most likely to occur during an infusion, but can occur up to 24 hours after
- Changes in blood pressure

Progressive Multifocal Leukoencephalopathy (PML)

In very rare cases, there have been reports of people taking rituximab developing a serious brain infection called PML. Your rheumatology nurse may discuss this with you in more detail. Symptoms of this infection include memory loss, trouble thinking, difficulty walking or loss of vision.

Due to the seriousness of this side effect, it is important to be aware of the symptoms of PML, so that you would know to contact your rheumatology team urgently if you developed them. It is also important to know that this side effect is incredibly rare. Data published in 2018 showed that there had been nine cases of PML in approximately 350,000 patients worldwide who had been given rituximab for RA. All of the patients who developed PML had other risks for developing it apart from being treated with rituximab.

> More information on side effects can be found in the patient information leaflet for rituximab.
>
> Remember to report any concerns about possible side effects to the doctors and nurses.

Rituximab with other medicines

Some biologic medicines are known to interact poorly with other biologics. You may therefore be asked to leave a gap between stopping one medicine and starting another, so that the first biologic has time to start coming out of your system.

Rituximab has been reported to interact with the antipsychotic medicine clozapine.

Your healthcare team can advise you of any known interactions with your medication, so it is important to let them know about all the medicines you are taking, whether they are prescribed or over-the-counter. You should also let them know if you are taking any supplements or herbal medicines as these can also interact with medicines.

If you start taking any new medicines, check with a doctor, nurse or pharmacist that they are safe to take with any medicines you are currently taking.

Rituximab during pregnancy and breastfeeding

There have been very few babies born to people who were treated with rituximab during pregnancy. Additionally, low levels of B-lymphocytes have been reported in some babies born to people exposed to rituximab during pregnancy. It is recommended that rituximab is avoided in people who are pregnant or trying to become pregnant unless the benefits outweigh the risks and there are no alternative treatments.

If rituximab is used in the last three months of pregnancy, live vaccines should not be given to the baby until they are six months old.

Men whose partners are trying to conceive may be able to continue on this medicine. However, this is based on limited data.

It may be safe to breastfeed while being treated with rituximab but this is also based on limited data.

Pregnancy information in this booklet is based on British Society for Rheumatology (BSR) guidelines on prescribing medicines in pregnancy and breastfeeding.

Before starting a family it is recommended that you get advice from the consultant or clinical nurse specialist about when to start a pregnancy.

B cell inhibitors and alcohol

You can drink alcohol on these medications. However, it is not uncommon when taking a biologic medicines to be on other medications, where different guidance applies. Methotrexate, for example, can affect the liver, so for those taking methotrexate alongside their biologic, moderate intake of alcohol is recommended in line with government guidelines.

Rituximab and immunisations/ vaccinations

Live vaccines cannot be given to anyone who is already taking rituximab. The live vaccines used in the UK include: measles, mumps and rubella (MMR), chickenpox, BCG (for tuberculosis), yellow fever, oral typhoid or oral polio (injectable polio and thyroid vaccines can be used). If rituximab has not yet been started, it is important to seek advice on how long a gap to leave after having a live vaccine.

Annual flu vaccine is strongly recommended. It is available in two forms: an injection for adults and a nasal spray for children. The injectable vaccine is not a live vaccine so is suitable for adults taking rituximab. The nasal spray is a live vaccine and not suitable
for adults taking rituximab. You can have a flu vaccination at your GP surgery or local pharmacy.

Annual ‘Pneumovax’ vaccination (which protects against pneumococcal pneumonia) is not live and is strongly recommended. Vaccination with Pneumovax should ideally be given before starting rituximab.

Shingles (Herpes zoster) vaccine is recommended for all adults turning 65, those aged 70 to 79 and those aged 50 and over with a severely weakened immune system. The
vaccination is given as two doses, two months apart. at your GP surgery. It is available as a live or non-live vaccine, so it is important to make sure you are given the non-live version.

Covid-19 vaccines and boosters are not live and are generally recommended for people with RA.

Non-live vaccines can be used while on treatment with rituximab. However, because B lymphocytes are involved in your body’s response to vaccinations, you may not get the same level of protection from the vaccines as if you were not taking rituximab. For this reason it is usually recommended that where possible you have vaccinations at least six months after the last dose of rituximab and wait two

weeks from the vaccination before having further doses of rituximab.

Your GP can advise if you are eligible for free flu, Pneumovax, shingles and Covid vaccinations, depending on the medications you are taking and their doses.

> Vaccination of close family members can help to protect someone with a lowered immune system from infection.

Medicines in rheumatoid arthritis

We believe it is essential that people living with RA understand why certain medicines are used, when they are used and how they work to manage the condition.

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