Resource

Biologics

Biologic drugs for the treatment of rheumatoid arthritis (RA) work by blocking the activity of a key part of the immune system involved in inflammation. They are often referred to as ‘targeted’ therapies.

Print

Rheumatoid arthritis (RA) is usually treated with one or more of the many disease modifying anti-rheumatic drugs (DMARDs) that are available. These medicines calm down the activity of the immune system so that it stops attacking and damaging the joints.

Conventional DMARDS for RA (such as methotrexate and sulfasalazine) and medicines such as steroids are effective, but they tend to suppress many aspects of the body’s immune response at once. As we have learnt more about the abnormal immune response that happens in RA, it has become possible to develop treatments that target very specific aspects of it: these are biologic therapies.

NICE have produced several guidelines for the use of biologics to treat RA. They can only be used to treat RA in people who meet the eligibility criteria set out in the guidelines:

- You must have not responded to, or not tolerated at least two DMARDs. One of these should be methotrexate, unless you cannot tolerate it.
- You must have persistently high levels of RA disease activity, measured using the DAS28.
- Patients with a DAS28 between 3.2 and 5.1 can be treated with a small range of biologics.
- Patients with more active disease (a DAS28 of 5.1 or more) can be treated with any of the biologics currently available.

Biologic medicines for the treatment of rheumatoid arthritis (RA) are made from proteins produced by genetically-engineered cells grown in a laboratory. They work by blocking the activity of a key chemical messenger involved in inflammation that gives rise to joint swelling and other symptoms. They are powerful and specific therapies that target very particular parts of the immune system.

In the 1980s it was discovered that the actively inflamed joints of people with rheumatoid arthritis contain many different chemicals that cause inflammation or contribute to it. These are produced by cells in the joint. Among these chemicals are proteins called cytokines, which send chemical messages from one cell to another. There are many different cytokines: some switch off inflammation while others are particularly potent at causing it.

Biologic medicines are given by subcutaneous injection or some as an infusion into a vein. They cannot be taken by mouth. These medicines have to be prescribed by your rheumatology team and most are delivered by homecare delivery companies.

NICE and the SMC guide the prescription of biologics and biosimilars and the order in which they are prescribed. However, when moving onto a biologic for the first time, it's likely that you will be started on one of the anti-TNF biologics or a biosimilar anti-TNF.

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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'My Story' animation

This story has been created by Pfizer and is a fictional story of a patient, containing insights from real patients.

Article

Anti-TNFs

The anti-TNF drugs were the first of the biologic drugs to be introduced for RA, the first of which came in 1999. They work by targeting the 'TNF?' cells.

Article

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.

Article

Tocilizumab and sarilumab

Tocilizumab was approved for use in patients with RA in 2009, making it a more recent biologic drug, with sarilumab being more recent, having been approved in 2017.

Article

Abatacept

Abatacept was approved for use in rheumatoid arthritis in 2007. It was initially only available by infusion but has more recently become available for use as an injection in both syringe and pen devices.