Resource

Biologics

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Print

Rheumatoid arthritis (RA) is usually treated with one or more of the many disease modifying anti-rheumatic drugs (DMARDs) that are available. In various ways, these drugs 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 drugs 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.

The NICE RA Guideline states that to be eligible for biologic drugs, patients with RA should have high levels of persistent disease activity. This is measured by a scale known as the Disease Activity Score in 28 joints (DAS 28 for short), which must be 5.1 or higher if you are to be eligible for biologic therapy. (See page 13 for more about DAS28.) You must also have failed on two disease modifying anti-rheumatic drugs (DMARDs), one of which must be methotrexate taken for at least six months unless it is contraindicated for some reason.

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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, produced by cells in the joint. Among these chemicals, proteins called cytokines were discovered, whose job is to 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 drugs are given by subcutaneous injection or some as an infusion into a vein. They cannot be taken by mouth.

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 or biosimilar, for the first time, it's likely that you will be started on one of the anti-TNFs 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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Article

'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

B cell inhibitor: 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, where it is used in a much lower dose. It is given by infusion in hospital.

Article

IL6 receptor inhibitors tocilizumab and sarilumab

Tocilizumab was approved for use in patients with RA in 2009, while sarilumab was approved in 2017. Both drugs target the IL6 cells that make up part of the immune system's response in the body.

Article

T-cell blocker: abatacept

Abatacept was approved for use in rheumatoid arthritis in 2007. It was initially only available by infusion but his now also available for use by injection in syringe or pen form. It targets the T-cells.