

Emerging new therapies give patients greater choice

The recent introduction of biologics and biosimilars is transforming the landscape of RA treatment, offering patients more options than ever before

By Lorena Tonarelli

Rheumatoid arthritis (RA) is an inflammatory condition in which the body's immune system attacks the tissues surrounding the joints, causing pain and stiffness. It cannot be cured, but treatment with disease-modifying antirheumatic drugs (DMARDs) can alleviate symptoms and delay joint damage. There are various types of DMARDs. These include oral drugs (termed conventional DMARDs in this article) and a newer class of drugs known as biologics, which are administered via injection.

Biologics and biosimilars

If conventional DMARDs alone don't work, patients may benefit from additional

treatment with biologics. Like conventional DMARDs, these work by interfering with the disease process. However, they differ in that they are made in living cells, and tend to act more quickly because they can target specific molecules involved in the development of RA.

"Biologics have proved highly effective for the treatment of rheumatoid arthritis and can powerfully help prevent the progressive destruction of the joints," says Professor Peter Taylor, Norman Collisson professor of musculoskeletal sciences at the Kennedy Institute of Rheumatology of the University of Oxford.

Biosimilars represent an alternative treatment option to biologic originators. "If the



An estimated **690,000** people across the UK have Rheumatoid arthritis. **That's almost one in every hundred**

31,000 new cases are diagnosed each year. **That's more than three people every hour**



Onset most commonly occurs when people are in the **prime of their working life** or **with a young family**

£560 million annual cost to the NHS in England

Women are **three times** as likely as men to have RA



£4.8 billion total cost to the UK economy, including the cost of treatment, care and lost productivity

SOURCE: NFRAS



Professor Peter Taylor

Kenedy Institute of Rheumatology, University of Oxford

genetic sequence that codes for a biologic is known, it can be copied," explains Taylor. "The result is a copycat drug, called a biosimilar, which mimics the function of the originator biologic, but is not identical to it."

Biosimilars have comparable efficacy and safety to biologics, but are less expensive, because they only need to undergo a reduced set of clinical trials to demonstrate their similarity to the biologic from which they originate.

Stratified and personalised medicine

Two novel approaches promise to improve patient response to treatment,

by enabling doctors to tailor RA therapies to individual needs: stratified medicine, in which blood, or other, tests can help determine the likelihood that a patient will respond to one drug instead of another; and personalised medicine, which aims to provide the right drug to the right patient at the right time.

As Taylor notes, the latter is being tested in clinical trials and not yet routinely used for RA. But there are examples of stratified medicine in the clinics. For instance, we know that patients who test negative for rheumatoid factor (a protein found in the blood) are less likely to respond well to a B cell depleting biologic drug.

"Over the next five years there is likely to be an expanded choice of biologic drugs"

Greater choice

Today, people with Rheumatoid arthritis have a wide range of treatment options. "Many more drugs are in the pipeline, including biologics, biosimilars and novel oral agents that have a completely new mechanism of action and need to be taken only once or twice a day," says Taylor.

"Over the next five years there is likely to be an expanded choice of biologic drugs, largely because of an increase in the number of available biosimilars, which is expected to encourage low-cost competition. Whether or not we will have access to new oral drugs in the UK will depend on how they are priced."