

EDITORIAL

RHEUMATOID ARTHRITIS: NEWER MEDICATIONS

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Rheumatoid arthritis is an autoimmune disease, is a long-term condition that causes pain, swelling and stiffness in the joints. The condition usually affects the hands, feet and wrists.^{1,2} There may be periods where symptoms become worse, known as flare-ups or flares.³ A flare can be difficult to predict, but with treatment it's possible to decrease the number of flares and minimize or prevent long-term damage to the joints. It is more common in females and in people with positive family history. There's no permanent treatment for rheumatoid arthritis. However, early diagnosis and appropriate treatment enable many people with the condition to have periods of months or even years between flares. This can help them to lead full lives and continue regular employment.

Treatments for rheumatoid arthritis can help reduce inflammation in the joints, relieve pain, prevent or slow down joint damage and reduce disability.⁴ Although there's no cure for rheumatoid arthritis, early treatment and support (including medicine, lifestyle changes, supportive treatments and surgery) can reduce the risk of joint damage and limit the impact of the condition. The main treatment options include:

- Medications: Disease modifying anti-rheumatic drugs and biological medicines.
- Supportive treatments: such as physiotherapy and occupational therapy.
- Surgery: like synovectomy, osteotomy, arthroplasty and Arthrodesis.

The Disease-modifying anti-rheumatic drugs (DMARDs) transiently relieves the symptoms of the rheumatoid arthritis and slow down its progression. DMARDs works by blocking the mediators released by immune mechanism of a body.⁵ The commonly

used DMARDs include the following:

- Methotrexate
- Leflunomide
- Hydroxychloroquine
- Sulfasalazine

Biological medicines, such as *adalimumab*, *etanercept* and *infliximab*, are a newer form of treatment for rheumatoid arthritis.^{6,7} They're usually taken in combination with methotrexate or another DMARD, and are usually only used if DMARDs have not been effective on their own. Newer rheumatoid arthritis (RA) medications include Janus kinase (JAK) inhibitors (like *tofacitinib* and *upadacitinib*), other targeted biologics such as B-cell and T-cell inhibitors, and a new class of drugs called Bruton's tyrosine kinase (BTK) inhibitors. Other advancements involve novel drug delivery systems, such as newer infusions and injections.

- **Janus kinase (JAK) inhibitors:** These are oral medications that block the Janus kinase pathway, which is involved in inflammation. Examples include *tofacitinib* (Xeljanz), *baricitinib* (Olumiant), and *upadacitinib* (Rinvoq).
- **B-cell depleting agents:** These medications target and remove B-cells, which are immune cells involved in RA. An example is *rituximab* (Rituxan), which is delivered via infusion.
- **T-cell costimulatory blocking agents:** These drugs block the activation of T-cells. An example is *abatacept* (Orencia), which is administered through infusion.
- **Bruton's tyrosine kinase (BTK) inhibitors:** This is a newer class of targeted, small-molecule drugs currently being investigated.

KEY WORDS: Autoimmune disease; Early diagnosis; Inflammation; Lifestyle; Rheumatoid arthritis.

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Other new developments

- **Targeted therapies:** Newer biologics are designed to target specific molecules in the immune system, which can lead to more targeted treatment and potentially fewer side effects compared to traditional broad-acting immunosuppressants.
- **Biosimilars:** These are biologic medicines that are highly similar to an already approved biologic medicine, offering more treatment options.

- **Neurostimulation:** This is an experimental therapy for RA that involves using electrical stimulation to influence the nervous system and reduce inflammation.

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CONFLICT OF INTEREST

Authors declare no conflict of interest.

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AUTHORS' CONTRIBUTION

The following authors have made substantial contributions to the manuscript as under:

Conception or Design:	MSK
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All the authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.



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