

TREATMENT METHODS OF RHEUMATOID ARTHRITIS IN LATE STAGES

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Abstract: Rheumatoid arthritis (RA) is a chronic autoimmune disorder that primarily affects the joints, leading to inflammation, pain, and eventual joint destruction. In its late stages, RA can cause severe disability, extra-articular manifestations, and reduced quality of life. Managing late-stage RA requires a multidisciplinary approach that includes pharmacological treatments, surgical interventions, and lifestyle modifications. This article explores the various treatment options for late-stage RA, focusing on disease-modifying anti-rheumatic drugs (DMARDs), biologic agents, corticosteroids, pain management strategies, and surgical interventions. Additionally, we discuss rehabilitation and supportive care strategies to enhance the quality of life for patients with advanced RA.

Key words: Rheumatoid arthritis, late-stage RA, DMARDs, biologic agents, joint replacement, pain management, rehabilitation.

Introduction

Rheumatoid arthritis (RA) is a progressive autoimmune disease characterized by chronic inflammation of the synovial joints. If left untreated or inadequately controlled, the disease progresses through several stages, ultimately leading to joint deformity, severe pain, and disability. The late stages of RA are particularly challenging, as joint damage becomes irreversible, and systemic complications may arise (Smolen et al., 2016).

Effective management of late-stage RA focuses on controlling inflammation, alleviating pain, preserving joint function, and preventing further complications. While early-stage RA treatment aims to slow disease progression, late-stage treatment primarily involves symptom management and functional support. This article provides an in-depth review of the treatment strategies available for patients with advanced RA.

Pharmacological Treatment Options

1. Disease-Modifying Anti-Rheumatic Drugs (DMARDs)

DMARDs remain the cornerstone of RA treatment even in its late stages. These drugs slow disease progression and reduce inflammation, preventing further joint damage (Singh et al., 2016).

Methotrexate (MTX): The most commonly used conventional DMARD, methotrexate helps control inflammation and may be combined with biologic agents (Aletaha & Smolen, 2018).

Leflunomide: An alternative for patients who cannot tolerate methotrexate, leflunomide also modulates the immune response.

Sulfasalazine and Hydroxychloroquine: These are often used in combination therapy but are less effective as monotherapy in advanced RA.

2. Biologic Agents and Targeted Synthetic DMARDs

Biologic DMARDs target specific immune pathways involved in RA pathogenesis. They are particularly beneficial for patients who have not responded adequately to conventional DMARDs.

Tumor Necrosis Factor (TNF) Inhibitors: Drugs like infliximab, adalimumab, and etanercept block TNF-alpha, a key cytokine involved in inflammation (Favalli et al., 2019).

Interleukin (IL) Inhibitors: Tocilizumab (IL-6 inhibitor) and anakinra (IL-1 receptor antagonist) are used in cases resistant to TNF inhibitors.

Janus Kinase (JAK) Inhibitors: Tofacitinib and baricitinib are oral small-molecule inhibitors that modulate immune signaling pathways (Fleischmann et al., 2017).

3. Corticosteroids

Corticosteroids, such as prednisone, provide rapid relief from inflammation and pain. However, long-term use is associated with side effects like osteoporosis, diabetes, and cardiovascular risks (Kirwan et al., 2019). In late-stage RA, corticosteroids are often used for short-term symptom control or in low doses as part of combination therapy.

4. Nonsteroidal Anti-Inflammatory Drugs (NSAIDs) and Analgesics

NSAIDs help alleviate pain and stiffness but do not prevent disease progression. In late-stage RA, they are often combined with DMARDs and corticosteroids for symptom relief. Stronger analgesics, including opioids, may be used in cases of severe pain, but their long-term use is discouraged due to dependency risks (Kolasinski et al., 2020).

Surgical Interventions

When medical management fails to control symptoms and joint damage leads to severe disability, surgical interventions become necessary.

1. Joint Replacement Surgery (Arthroplasty)

Total joint replacement, particularly of the knee and hip, is a common procedure for RA patients with end-stage joint damage. This surgery significantly improves mobility and quality of life (Gulati et al., 2020).

2. Synovectomy

In some cases, removing the inflamed synovium (synovectomy) can help reduce pain and delay joint destruction. This is usually performed on joints like the knee, elbow, or wrist.

3. Arthrodesis (Joint Fusion)

Fusion of joints, particularly in the wrists or ankles, can provide pain relief and stability when joint replacement is not a viable option (Morse et al., 2018).

4. Tendon Repair

RA often leads to tendon damage and ruptures. Surgical tendon repair can restore function in severely affected hands and feet.

Rehabilitation and Supportive Care

1. Physical Therapy and Exercise

Physical therapy is essential for maintaining joint function and preventing stiffness. Low-impact exercises such as swimming and yoga can improve flexibility and muscle strength (Cooney et al., 2021).

2. Occupational Therapy

Occupational therapists help RA patients adapt to daily activities by recommending assistive devices and ergonomic modifications.

3. Assistive Devices

Using braces, splints, canes, and orthotic shoes can help reduce strain on affected joints and improve mobility.

4. Pain Management Techniques

Non-pharmacological pain relief strategies include:

Heat and Cold Therapy: Heat relaxes muscles, while cold reduces inflammation.

Transcutaneous Electrical Nerve Stimulation (TENS): This therapy uses electrical impulses to reduce pain perception.

Acupuncture and Massage: Some RA patients benefit from complementary therapies like acupuncture and massage.

5. Psychological and Emotional Support

Chronic pain and disability can lead to depression and anxiety. Support groups, counseling, and cognitive-behavioral therapy (CBT) can help patients cope with the emotional impact of late-stage RA (Matcham et al., 2019).

Conclusion

Managing late-stage rheumatoid arthritis is complex and requires a combination of pharmacological, surgical, and supportive therapies. While DMARDs and biologic agents remain central to treatment, pain management, rehabilitation, and surgical interventions play crucial roles in preserving function and improving quality of life. Future research aims to develop more effective and personalized treatments, offering hope for better outcomes in patients with advanced RA.

A multidisciplinary approach involving rheumatologists, orthopedic surgeons, physical therapists, and mental health professionals is essential for optimal care. By integrating medical advancements with holistic patient support, individuals with late-stage RA can achieve better symptom control and maintain independence for as long as possible.

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