



Rheumatoid Arthritis

What is rheumatoid arthritis?

Rheumatoid arthritis (RA) is a progressive, systemic autoimmune disease characterised by inflammation of the membrane lining in joints. This inflammation causes a loss of joint shape and alignment, resulting in pain, stiffness and swelling, ultimately leading to irreversible joint destruction and disability. Characteristics of RA include redness, swelling, pain, and movement limitation around joints of the hands, feet, elbows, knees and neck. In more severe cases of RA, the eyes, lungs or blood vessels may be involved. RA may also shorten life expectancy by affecting major organ systems.

RA is one of the most common forms of autoimmune disease and affects over 21 million people worldwide.¹

The exact cause of RA is unknown, and as yet, there is no cure. However, it is now known that people with RA begin to suffer progressive, permanent joint damage early on in the disease, long before the onset of visible changes, such as joint deformity. Within the first two years, up to 70% of people with RA have X-ray evidence of joint destruction.

Rheumatoid arthritis and osteoarthritis

RA and osteoarthritis are two distinct conditions, although both lead to joint inflammation. RA is an autoimmune disease, in which the body's own immune system attacks healthy tissue, resulting in joint damage and chronic inflammation. In contrast, in osteoarthritis, tissue is destroyed through wear and tear, and is more common in older people.

Impact of RA

The impacts of RA are wide-ranging, causing not only physical problems but also a significant negative impact on quality of life.

The average life expectancy of a person with RA is shortened by three to seven years, and patients with severe RA may die 10 to 15 years earlier than expected.

The Arthritis Foundation recently commissioned a survey to assess the impact of current RA treatments on quality of life.²

The survey, which was undertaken among 500 RA patients, found that despite recent medical advances, there is still a significant unmet need, and that quality of life is compromised as a result of RA symptoms. One in three respondents expressed concern that RA decreases their level of control over their future and almost half of the respondents were apprehensive that they would be unable to care for their family.²

Addressing concerns about their future prospects, it was identified that approximately half of the respondents were worried that they would be unable to take care of themselves, and that they feared being disabled or deformed. Additional concerns include being unable to participate in their favourite activities and hobbies, to continue to do their job, and also to maintain a healthy weight.²

Most patients with RA identified that they continue to experience symptoms on a daily basis that can restrict physical activity, with two-thirds rating their quality of life as moderate or poor.² Nearly half of the respondents noted that they have had to modify their regular household activities to avoid aggravating their RA symptoms and it is estimated that after 10 years of living with RA, fewer than 10% of patients can continue to work or function normally on a daily basis.

Further research has also found that many people with RA believe that their disease has adverse effects on relationships and negatively impacts on their sex life.³

A large number of people experience some damage to their joints as a direct result of RA, whilst one in twenty suffer severe damage in numerous joints.⁴ This may lead to operations for joint replacements, resulting in regular visits to hospitals for surgery and post-operative care, disrupting the family routine and placing additional stress on family / partner relationships.

As well as the impact on the individual, there is also a significant financial impact on national economies including hospital admissions, health care costs and lost

productivity. RA is the cause of over nine million doctor visits in the UK annually⁵ and 500,000 hospitalisations in the US alone.⁶ Estimates of the cost of RA to the economy vary widely across Europe. For example, in the UK in 2000, it was estimated to be £5.5billion.⁵

Diagnosing RA

RA can be challenging to diagnose because it may begin gradually with subtle symptoms. Typical first symptoms can include warmth, swelling and / or pain in the joints. RA should be evaluated by a rheumatologist – a specialist physician with the skills and experience to accurately diagnose and treat the disease.

Although there is no single test to confirm a diagnosis of RA, it is typically established by the presence of certain symptoms, physical examination findings, laboratory tests and X-rays.

There are a number of clinical tests regularly carried out by rheumatologists to help with the diagnosis of RA as well as to monitor the progression of the disease. These may include:

Erythrocyte sedimentation rate (ESR)	A measure of the rate of settling of red blood cells in a tube of blood during one hour. The ESR is an indication of inflammation and increases in cases of RA.
C-reactive protein (CRP)	Examination of reactive proteins that exist in the blood during an inflammatory condition. A high value indicates inflammation (from infection or inflammatory diseases such as autoimmune diseases including RA).
Rheumatoid factor (RF)	RF is an autoantibody identified by a blood test. A positive RF result (<1:80 titer) in addition to the typical clinical findings indicates the likely presence of RA.

Treating RA

There are a number of treatments currently available to manage RA. Some address the symptoms and others modify the course of the disease. These include:

- Nonsteroidal anti-inflammatory drugs (NSAIDs): These manage the signs and symptoms of RA, such as reducing pain, swelling, and inflammation, but do not alter the course of the disease or slow the progression of joint destruction
- Glucocorticoids (corticosteroids): These are anti-inflammatory drugs related to cortisol - a steroid produced naturally in the body - that work by countering inflammation. However, the many side-effects of glucocorticoids include hyperglycemia, osteoporosis, hypertension, weight gain, cataracts, sleep problems, muscle loss, bruising and susceptibility to infections, and these can limit their use
- Traditional disease-modifying anti-rheumatic drugs (DMARDs): These relieve symptoms and help control RA by delaying disease progression. While effective in controlling the symptoms of the disease, many patients either fail to respond or have an inadequate response to these therapies. These treatments are often used in combination with one another, or in combination with a biologic agent to improve patient response
- Biologics / biological response modifiers (BRMs): These are genetically engineered drugs that target specific chemicals in the immune system called cytokines, which are produced by cells that affect other cells during an inflammatory response. Examples of specific cytokines targeted by Biologics include tumour necrosis factor (TNF) and interleukin-1 (IL-1). However, approximately 30 to 40% of patients treated with TNF inhibitors experience either an inadequate response or are intolerant to such therapies.⁷

An unmet need

Data from the Arthritis Foundation survey² identified that just half of the respondents treated with a DMARD or biologic found that the treatment helped reduce pain, which indicates that a substantial segment of the patient population did not derive sufficient benefit from existing therapies, highlighting the need for advances in medical treatment.

The results also show that although RA symptoms improved for some respondents, others continued to experience the effects on a daily basis, including stiffness in the morning (70%), fatigue (67%) and swelling (42%).

Advances in treatment

As research advances into the causes of RA and the ways in which the disease progresses, new treatment approaches are emerging. The selective targeting of B cells, which appear to play an important role in the pathogenesis of RA, is showing promise in clinical trials, offering hope to the millions of people affected by the condition.

References

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