

Rheumatoid Arthritis

What is Rheumatoid Arthritis?

Rheumatoid Arthritis (RA) is a chronic and systemic disease that causes pain, stiffness, swelling, and limitation in the motion and function of multiple joints. Though joints are the principal body parts affected by RA, inflammation can develop in other organs as well affecting the muscles, lungs, skin, blood vessels, nerves and eyes.

What Causes Rheumatoid Arthritis?

The precise cause of rheumatoid arthritis is not yet known. We know that the inflammation in rheumatoid arthritis appears to be due to a disorder in the body's immune defense system. This leads to an immune reaction to the body's own cells. The continuous inflammation in the joints accounts for the damage of joints.

Even though the answers are not known, one thing is certain: rheumatoid arthritis develops as a result of an interaction of many factors:

1. Genetic (inherited) factors

Scientists have discovered that certain genes are associated with a tendency to develop rheumatoid arthritis. And there is slight increased tendency of getting the disease if their family members also have it.

2. Environmental factors

Viral or bacterial infection appears to trigger the disease process, but the exact agent is not yet known. However, rheumatoid arthritis is not contagious, a person cannot catch it from someone else.

3. Hormonal factors

Female hormone may play a role with evidence as: women are more likely to develop rheumatoid arthritis than men, pregnancy may improve the disease, the disease may flare after a pregnancy and breastfeeding may also aggravate the disease.

Effects of inflammation in rheumatoid arthritis

Early in the disease, most people complain of fatigue, stiffness and aching in the joints. Muscle stiffness commonly occurs in the morning. Usually some of the joints gradually become warm, painful and swollen. Swelling of the joint is partly due to increased fluid in the joint cavity and partly due to thickening of the lining of the joint capsule. The joints most affected are those in the hands and feet. Often the same joints on both sides of the body become affected. That is, the problems occur in both hands, both feet, both elbows and so forth.



香港復康會
The Hong Kong Society
for Rehabilitation
社區復康網絡
Community Rehabilitation Network

電話 - 2549 7744 (香港) 2631 2838 (九龍)
2636 0666 (沙田) 2775 4414 (新界)
網址 - <http://www.rehabsociety.org.hk/crn.html>



香港風濕病基金會
Hong Kong Arthritis &
Rheumatism Foundation Ltd.

電話 - 2346 6336
網址 - <http://www.hkarf.org>

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Who Gets Rheumatoid Arthritis?

Rheumatoid arthritis occurs in all races and ethnic groups. Most commonly it appears between the ages of 25 and 50 with increased frequency in older people, children and young adults also develop it. About 75 percent of those affected are women, and 1-3% of women may develop rheumatoid arthritis in their lifetime. Women are affected about 3 times as frequently as men.

What are the symptoms of Rheumatoid arthritis?

Rheumatoid arthritis affects people differently. Joint swelling is common and the small joints of the hands and feet are those most usually affected, but it can occur in any of the joints. The stiffness seen in active RA is typically worst in the morning and may last from one to two hours to the entire day. This long period of morning stiffness is an important diagnostic clue.

Other symptoms that can occur in Rheumatoid arthritis include:

1. loss of energy
2. low-grade fevers
3. loss of appetite
4. dry eyes and mouth (Sjogren's syndrome)
5. firm lumps called rheumatoid nodules beneath the skin in areas such as the elbow and hands
6. inflammation of the eyes
7. pain in the chest on deep breathing (pleurisy)

For some people, the symptoms last only a few months or a year or two and goes away without causing any noticeable damage. Other people have mild or moderate forms of the disease, with periods of worsening symptoms, called flares; and periods in which they feel better, called remissions. Still others have a severe form of the disease that is active most of the time, lasts for many years or a lifetime, and leads to serious joint damage and disability.

The diagnosis of rheumatoid arthritis

Rheumatoid arthritis can be difficult to diagnose in its early stages for several reasons. First, there is no single test for the disease. In addition, symptoms differ from person to person. Also, symptoms can be similar to those of other types of arthritis and joint conditions, Finally, the full range of symptoms develops over time, and only a few symptoms may be present in the early stages.

There is no single test that "confirms" a diagnosis of RA. Rather, diagnosis is established by skillfully evaluating the appropriate symptoms, physical examination findings, laboratory tests, joint fluid examination and X-rays:

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1. Medical history

Description of pain, stiffness, joint function and how these change over time is critical to the doctor's initial assessment.

2. Physical examination

This includes examination of the joints, skin, reflexes, and muscle strength.

3. Laboratory tests

- Rheumatoid factor (an antibody eventually found in approximately 70% of patients with RA, but in only 30% at the start of the arthritis); and
- Anaemia (a low red blood cell count)
- An elevated erythrocyte sedimentation rate and C reactive protein (a blood test that in most patients with RA tends to correlate with the amount of inflammation in the joints).

4. Joint fluid examination

If the joint is very swollen, the doctor may drain fluid from your joints and examine it to make sure the arthritis is not due to an infection or some other cause.

5. X rays

To determine the degree of joint destruction. They are not useful in the early stages of rheumatoid arthritis before bone damage is evident, but they can be used later to monitor the progression of the disease.

Because of the diagnostic difficulty, American College of Rheumatology (ACR) had developed a diagnostic criteria: patient fulfilling any 4 of the 7 criteria for more than six weeks are having Rheumatoid Arthritis:

1. Morning stiffness
2. Arthritis of 3 or more joints
3. Arthritis of hand joints
4. Symmetric arthritis
5. Presence of rheumatoid nodule
6. Positive rheumatoid factor
7. X-ray show erosion

Medications

Therapy for patients with rheumatoid arthritis has improved dramatically over the past 25 years. Since there is no cure for RA, the goal of treatment is to minimize patients' symptoms and disability by introducing appropriate medical therapy early on, before the joints are permanently damaged. No single therapy is effective for all patients, and many patients will need to change treatment strategies during the course of their disease.

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Some medications are used only for pain relief; others are used to reduce inflammation. Still others, often called disease-modifying antirheumatic drugs (DMARDs), are used to try to slow the course of the disease. The person's general condition, the current and predicted severity of the illness, the length of time he or she will take the drug, and the drug's effectiveness and potential side effects are important considerations in prescribing drugs for rheumatoid arthritis.

For many years, doctors initially prescribed aspirin or other pain-relieving drugs for rheumatoid arthritis, as well as rest and physical therapy. They usually prescribed more powerful drugs later only if the disease worsened.

Today, however, many doctors have changed their approach, especially for patients with severe, rapidly progressing rheumatoid arthritis. Studies show that early treatment with more powerful drugs, and the use of drug combinations instead of one medication alone, may be more effective in reducing or preventing joint damage. Once the disease improves or is in remission, the doctor may gradually reduce the dosage or prescribe a milder medication.

Below are different groups of medication used in rheumatoid arthritis:

1. Non-steroidal anti-inflammatory drugs

These are the first-line treatment to quickly reduce joint inflammation and stiffness. However, they do not have the effect to decrease or prevent the joint damage. They can be given orally or injected into the muscle. The major side effects include gastrointestinal upset, ulcer formation and renal impairment. E.g aspirin, ibuprofen diclofenic acid, piroxicam.

2. COX-II inhibitor

It has similar function to the non-steroidal anti-inflammatory drugs, but without a major ulcer side effect. It can be taken orally. E.g. celecoxib (celebrex), etoricoxib, acoxia.

3. Corticosteroid

Corticosteroids are drugs related to the natural hormone cortisone, They are not often used to treat rheumatoid arthritis unless the disease is severe and has not respond to other drugs. Low dose corticosterids are considered quite effective in controlling the joint, pain, stiffness and swelling. They can be given orally, injected into the muscle or directly into the affected joints. The long term side effects include osteoporosis, cataract, high blood pressure or high glucose level. The decision to start or stop corticosteroids must be made by your physician.

4. Disease Modifying Anti-Rheumatic Drugs(DMARDs)

DMARDs relieve painful, swollen joints and slow the progress of joint damage for the vast majority of patients. Several DMARDs may be used over the disease course, depends on the respond to the treatment and the tolerability of patients. They take a few weeks or months to have an effect, and may produce significant improvement for many patients. Exactly how they

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works still unknown. They are often used in conjunction with NSAID and/or low dose corticosteroids as well. Different DMARDs have different side effect, and monitoring are required for every DMARDs. E.g Methotrexate (Rheumatrex), leflunomide (Arava), hydroxychloroquine (Plaquenil), sulfasalazine (Azulfidine), gold (Auranofin) - given intramuscularly, minocycline (Minocin), azathioprine (Imuran) and cyclosporine (Neoral).

5. Biological agents

Biologic agents are new drugs used for the treatment of rheumatoid arthritis, which can specifically target parts of the immune system, reduce inflammation and structural damage to the joints by blocking the action of cytokines (proteins of the body's immune system that trigger inflammation during normal immune responses). Three of these drugs, etanercept (Enbrel), infliximab (Remicade), and adalimumab (Humira), reduce inflammation by blocking the reaction of TNF- α molecules. Another drug, called anakinra (Kineret), works by blocking a protein called interleukin 1 (IL-1) that is seen in excess in patients with rheumatoid arthritis. In some cases these medications are used alone; in many cases, they are combined with methotrexate for added efficacy. Long-term efficacy and safety are uncertain. Doctor monitoring is important, particularly if you have an active infection, exposure to tuberculosis, or a central nervous system disorder. Evaluation for tuberculosis is necessary before treatment begins.

Treatment

Successful management of RA requires early diagnosis and, at times, aggressive treatment. The optimal treatment of RA often requires more than medication alone. Proper treatment requires comprehensive, coordinated care, patient education and the expertise of a number of providers, including rheumatologists, primary care physicians, and physical and occupational therapists. The goals of treatment include: relieve pain, reduced inflammation, slow down or stop joint damage and improve a person's sense of well-being and ability to function.

Certain activities can help improve a person's ability to function independently and maintain a positive outlook:

1. Adequate Rest

People with rheumatoid arthritis need a good balance between rest and exercise, with more rest when the disease is active and more exercise when it is not. Rest helps to reduce active joint inflammation and pain and to fight fatigue.

2. Exercise

Exercise is important for maintaining healthy and strong muscles, preserving joint mobility, and maintaining flexibility. Exercise can also help people sleep well, reduce pain, maintain a positive attitude, and lose weight. Gentle range-of-motion exercises will keep the joint flexible.

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When feeling better, low-impact aerobic exercises such as walking and exercises to boost muscle strength will improve overall health and reduce pressure on joints.

3. Joint care

Some people use a splint for a short time around a painful joint reduces pain and swelling by supporting the joint and letting it rest. A doctor or a physical or occupational therapist can help a person choose a splint and make sure it fits properly. Other ways to reduce stress on joints include self-help devices (e.g. zipper pullers, long-handled shoe horns); devices to help with getting on and off chairs, toilet seats, and beds; and changes in the ways that a person carries out daily activities.

4. Stress reduction

Disease-fear, anger, and frustration-combined with any pain and physical limitations can increase the stress level. Stress can make living with the disease more difficult . Stress also may affect the amount of pain a person feels. There are a number of successful techniques for coping with stress: regular rest periods, relaxation, distraction, or visualization exercises. Exercise programs, participation in support groups, and good communication with the health care team are other ways to reduce stress.

5. Healthy diet

Nutritious diet with enough-but not an excess of-calories, protein, and calcium is important. Those taking methotrexate may need to avoid alcohol altogether because one of the most serious long-term side effects of methotrexate is liver damage.

6. Heat and Cold Treatment

They are effective means of relaxing muscles and relieving pain in arthritis joints. A hot bath, hot pads, paraffin wax and cold compresses are some methods frequently used.

7. Alternative and complementary therapies

Special diets, vitamin supplements, acupuncture alternative approaches for treating rheumatoid arthritis. Although many of these approaches may not be harmful, controlled scientific studies found no definite benefit to these therapies.

8. Surgery

Several types of surgery are available to patients with severe joint damage. The primary purpose of these procedures is to reduce pain, improve the affected joint's function, and improve the patient's ability to perform daily activities. Commonly performed surgical procedures include joint replacement, tendon reconstruction, and synovectomy.

9. Prevention of osteoporosis

Having rheumatoid arthritis increases the risk of developing osteoporosis for both men and women, particularly if a person takes corticosteroids. Discuss with your doctors for prevention or treatment of osteoporosis.

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What is the Outlook?

Rheumatoid arthritis affects people in a numbers of ways:

1. Pain and disability

Daily joint pain is an inevitable consequence of the disease, Uncontrolled RA can lead to joint deformity, inability to self calf or even bed ridden.

2. Financial

From an economic standpoint, the medical and surgical treatment for rheumatoid arthritis and the wages lost because of disability caused by the disease add up to billions of dollars annually.

3. Psychologically

Most patients also experience some degree of depression, anxiety, and feelings of hopeless.

4. Mortality

Recent research indicates that people with not well controlled RA may have a higher risk for heart disease and stroke.

Suggestions

The diagnosis of a chronic illness is a life-changing event that can cause anxiety and occasionally feelings of isolation or depression. Because the treatments for rheumatoid arthritis have improved dramatically, these feelings usually decrease with time as energy improves and pain and limitation decrease. It is important to discuss there normal reactions to illness with your physician and health care providers, who can provide you with the information and resources you need for support during your treatment.

Rheumatoid arthritis can be mild, moderate or severe. For most people who begin to follow a proper treatment program early in their illness, the amount of permanent joint damage is small. In fact, most of the disabilities due to rheumatoid arthritis are preventable. A small minority of patients develop severely deformed joints. This is because of unusually severe disease or neglect. In the early stages of the disease with appropriate treatment, the majority of patients improve. Most patients with rheumatoid arthritis can look to the future with confidence.

1. Maintain a healthy diet and life style

2. Co-operate with your doctor to design a suitable treatment plan for you

3. Understand the disease more

4. Build a sense of confidence in ability to function and lead full, active and independent lives