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Rheumatoid Arthritis

Key words: Rheumatoid arthritis, arthritis, joint pain, joint swelling, joint deformity, NSAID's, anti-inflammatory, corticosteroids, tenosynovitis, synovitis, joint injection

Rheumatoid arthritis

Rheumatoid arthritis is an inflammatory condition which causes pain, swelling and inflammation of joints. In time, the surface of the affected joints may become damaged. Treatments include medication to ease the pain, reduce the inflammation in the joints or to slow down the progression of the disease. Surgery is needed in some cases if a joint becomes very inflamed, badly damaged or arthritic. The inflammation may also affect tendon sheaths which become inflamed in a tenosynovitis. This sometimes requires surgery to remove the inflamed tendon sheath.

What is rheumatoid arthritis?

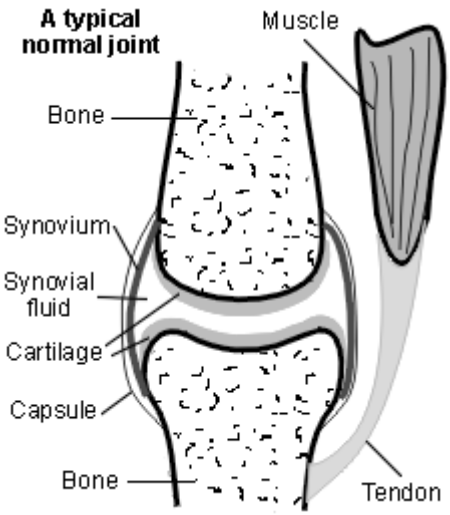
Inflammation is associated with redness, swelling, stiffness and pain around joints. Arthritis is wear and degeneration to joint surfaces. Rheumatoid arthritis (RA) is a common form of arthritis associated with a chronic or long term inflammation around the joints. About 1 in 50 people develop RA at some stage in their life. It can happen to anyone, and it is not a hereditary disease nor is it an infected condition. It can develop at any age, but most commonly starts in middle adult life (aged 40-60). It is three times more commonly encountered in women than in men.

Rheumatoid arthritis (RA) is thought to be an 'autoimmune disease'. The immune system normally makes antibodies to attack bacteria and viruses. In people with autoimmune diseases, the immune system makes antibodies against the tissues of the body. It is not clear why this happens. Some people seem to have a tendency to develop various and often multiple autoimmune diseases.

In people with RA, antibodies are formed against the synovium (the tissue that lines each joint and produces the lubricating fluid). This causes inflammation in and around affected joints. Over time, this inflammation can cause damage to the joint, the articular surface, and erode parts of the bone adjacent to the joint.

Anatomy of joints

A joint is the articulation between two bones. Joints allow movement and flexibility of various parts of the body. The movement of the bones is cased by and controlled by muscles which pull on tendons that are attached to bone. Ligaments assist in controlling the movements of joints.



The articulating ends of the bone which are involved in joints are covered with articular cartilage. This hard, smooth and slippery surface is the “gristle” covering the ends of bone encountered in cooked meats. This articular cartilage should not be confused with the meniscal cartilage in the knee commonly torn in soccer injuries. The cartilage covering the ends of the two bones form a joint. In the joint is a natural fluid lubricant called synovial fluid. This fluid 'lubricates' the joint which allows smooth movement between the bones.

The synovial fluid is produced by the synovium. This is the tissue that lines the joint. Around the joint is the capsule. This is a tough layer which often blends with the supporting ligaments around the joint. This lends support to the joint and controls the movement of the joint.

Which joints are affected in rheumatoid arthritis?

The most commonly affected joints are the small joints of the fingers, thumbs, wrists, feet, and ankles. However, any joint may be affected. The knees are quite commonly affected. Less commonly the hips, shoulders, elbows, and neck are involved. It is often symmetrical. So, for example, if a joint is affected in a right arm, the same joint in the left arm is also often affected.
In some people, just a few joints are affected. In others, many joints are involved. RA often affects the hands, wrists, cervical spine, hips and knees.

What are the symptoms of rheumatoid arthritis?

Joint symptoms

The common main symptoms are pain and stiffness of affected joints. The stiffness is usually worse first thing in the morning, or after resting. The inflammation causes swelling around the affected joints.

Other symptoms

These are known as 'extra-articular' symptoms of RA (meaning 'outside of the joints'). A variety of symptoms may occur. The cause of some of these is not fully understood.

- Inflammation around tendons may occur. This is because the tissue which covers tendons is similar to the synovium around the joints.
- Anaemia and tiredness are common.
- A fever, feeling unwell, weight loss, and muscle aches and pains sometimes occur.
- In a few cases inflammation develops in other parts of the body such as the lungs, heart, blood vessels, or eyes. This is uncommon but can cause various symptoms and problems which are sometimes serious.
- Small painless lumps or 'nodules' develop in about 1 in 4 cases. These commonly occur on the skin over the elbows and forearms, but usually do no harm.

Course of the disease

In most cases the symptoms develop gradually - over several weeks or so. Typically, you may first develop some stiffness in the hands, wrists, or soles of the feet in the morning which eases by mid-day. These symptoms are intermittent and irregular but later may become persistent. Cold or wet weather often makes the symptoms more troublesome. Often holidays in warm dry climates make the symptoms less apparent.

The period between more troublesome flare-ups is irregular. In some people, months or even years may go by between flare-ups. Some damage may be done to affected joints during each flare-up. The amount of disability which develops usually depends on how much damage is done over time to the affected joints. In a minority of cases the disease is constantly progressive, and severe joint damage and disability develop quite quickly, more usually many years pass before significant disability occurs.

In a small number of cases, less common patterns are seen. For example:

- In some cases pain and swelling develops quickly in many joints - over a few days or so.
- Some people have bouts of symptoms which affect several joints. Each bout lasts a few days, and then goes away. Several bouts may occur before persistent symptoms develop.
- In some people, usually young women, the disease affects only one or two joints at first, often the knees.
- The non-joint symptoms such as muscle pains, anaemia, weight loss, and fever are sometimes more obvious at first before joint symptoms develop.

RA can vary greatly from person to person. It is usually a chronic relapsing condition. Chronic means that it is persistent. Relapsing means that at times the disease flares-up (relapses), and at other times it settles down. There is usually no apparent reason why the inflammation may flare-up for a while, and then settles down.
Smoking seems to be a possible factor as, on average, the severity of RA tends to be worse in smokers than non-smokers.

Joint damage

Joint damage develops gradually over time which may lead to clinical deformities. It may become difficult to use the affected joints. For example, the fingers and wrists are commonly affected, so a good grip and other tasks using the hands may become difficult. Damage to the hips or knees may make mobility difficult. Most people with RA develop some damage to affected joints but it is difficult to predict for an individual how badly the disease will progress.

Diagnosis

There is no single test which clearly diagnoses early RA. When joint pains first develop it may be difficult for a doctor to say that you definitely have RA. This is because there are many other causes of joint pains. Blood tests can detect inflammation, characteristic antibodies, and anaemia. These may suggest that you have RA, but do not prove that you definitely have it as these blood results can be caused by other conditions or in the early phase may not be positive.

Associated conditions

The risk of developing certain other conditions is higher in people with RA. These include:

- Carpal tunnel syndrome. This is relatively common. It causes pressure on the main nerve going into the hand. This can cause pain, tingling and numbness in parts of the hand.
- Tendon rupture sometimes occurs on the back of the wrist because of chronic tenosynovitis.
- Cervical myelopathy. This is an uncommon but serious complication of severe, long-standing RA of the cervical spine causing a weakening of the ligaments between the cervical vertebral bones.

Treatment

There is no cure for RA. However, much can be done to help. The aims of treatment are:

1. To maintain function and mobility.
2. To prevent joint damage as much as possible.
3. To reduce pain and stiffness in affected joints as much as possible.

4. To minimise any disability caused by pain, joint damage, or deformity.
5. To reduce the risk of developing associated conditions.

General therapy and health

As mentioned, if you have RA you have an increased risk of developing other diseases and general debility. Therefore, you should consider doing what you can to reduce the risk of these conditions by other means. For example, if possible:

- Eat a good healthy diet and exercise regularly.
- Lose weight if you are overweight.
- Do not smoke.
- As far as possible, try to keep active, strong and flexible. The muscles around the joints will become weak if they are not used. Regular exercise may also improve joint function. Swimming is a good way to exercise many muscles without straining joints too much. A physiotherapist can advise on exercises to keep muscles around joints as mobile and strong as possible. They may also advise on splints to help rest a joint if needed.
- If such things as your grip or mobility become poor, an occupational therapist may advise on adaptations to the home to make daily tasks easier.
- Some people try complementary therapies such as special diets, bracelets, acupuncture, etc. There is little research evidence to say how effective such treatments are for RA.

Immunisations

To prevent certain infections, you should have:

- An annual 'flu jab if you are over the age of 65 years, or are taking immunosuppressive drugs, or are taking steroids equivalent to 20mg or more of Prednisolone each day for more than a month.
- A 'one-off' pneumococcal immunisation if you are over the age of 75 years, or are taking immunosuppressive drugs, or are taking steroids equivalent to 20mg or more of Prednisolone each day for more than a month.

Anti-inflammatory Medication

During a flare-up of inflammation, if you rest the affected joint(s) it helps to ease pain. Special wrist splints, footwear, gentle massage, or applying heat may also help. Medication is also helpful. Medicines which may be advised by your doctor to ease pain and stiffness include the following.

Non-steroidal anti-inflammatory drugs – NSAID

These are sometimes just called 'anti-inflammatories' and are good at easing pain and stiffness. There are many types and brands. Each is slightly different to the others, and side-effects may vary between brands. To decide on the right brand to use, a doctor has to balance how powerful the effect is against possible side-effects and other factors. Usually one can be found to suit. However, it is not unusual to try two or more brands before finding one that suits you best. The most common side-effect is indigestion or stomach pain (dyspepsia). An uncommon but serious side-effect is bleeding from the stomach. The leaflet which comes with the tablets gives a full list of possible side-effects.

Paracetamol, Aspirin or other analgesic (pain-killers) often help. These do not have the anti-inflammatory effect but have fewer side-effects.

Steroids

A course of steroid tablets such as Prednisolone is sometimes used. Steroids are good at reducing inflammation. They may be prescribed to treat a flare-up which has not been helped much by non-steroidal anti-inflammatory painkillers. An injection of steroid directly into a joint is sometimes used to treat a bad flare-up in one particular joint.

The problem with steroids is their side-effects. A short course every 'now and then' for a severe flare-up is usually fine. However, serious side-effects may occur if you take steroids for more than a few weeks, or if you have injections frequently. Side-effects include: thinning of the bones (osteoporosis), thinning of the skin, weight gain, muscle wasting, and other problems. The steroid may help to keep inflammation down, and the low dose may mean that side-effects are less likely.

These drugs including NSAID's, painkillers, and steroids ease the symptoms of RA. However, they do not alter the progression of the disease or prevent joint damage.

Disease modifying drugs.
There are a number of drugs called 'disease-modifying anti-rheumatic drugs' (DMARDs). These are drugs that ease symptoms but also reduce the damaging effect of the disease on the joints. They work by blocking the effects of chemicals involved in causing joint inflammation. They include: sulfasalazine, methotrexate, gold injections, gold tablets, penicillamine, leflunomide and hydroxychloroquine. It is these drugs which have improved the outlook (prognosis) in recent years for many people with RA. Other DMARDs include azathioprine, cyclosporin, and cyclophosphamide. These are usually reserved for people who do not respond well to the more commonly used DMARDs, due to the risk of serious side-effects.

It is usual to start a DMARD as soon as possible after RA has been diagnosed. This is to try and limit the disease process as much as possible. In general, the earlier you start one, the more effective it is likely to be. DMARDs have no immediate effect on pains or inflammation. It can take up to 4-6 months before you notice any effect.

Drugs which have recently been developed include etanercept, infliximab, adalimumab, and anakinra. The long-term benefits are still being evaluated. One problem with these drugs is that they need to be given by injection.

Surgical Treatments

Joint injection
Steroid injection into the joint may reduce the swelling, pain and stiffness experienced. If a particular joint is affected then this may be very beneficial. However repeated injections may accelerate the degeneration within the joint. Steroid injection can also be used into tendon sheaths to reduce the swelling of tenosynovitis. However whilst this can be very effective it may be associated with exacerbating tendon rupture.

Synovectomy
In the early stages pain, swelling and stiffness of joints is often a problem. The fluid is produced and many of the symptoms mediated by the synovium or lining of the joint. Removal of the synovial from the joint is often associated with a reduction in the symptoms and swelling for a period of time. This period is often prolonged. Removal of the synovial lining or synovectomy may be undertaken by a cytotoxic drug injection directly into the joint. Minimally invasive surgery is often available to undertaken a synovectomy by an arthroscopy. In particular this may be appropriate for the wrist, elbow, shoulder, knee or ankle joint.

Joint replacement
When the damage to the joint surfaces has progressed to a degree such that the articular surface has been completely eroded or denuded then pain, swelling, stiffness, deformity and poor joint function of becomes constant. This is associated with poor function and disability. If general therapy, drug treatment, splints and orthotics are ineffective then replacement of the joint is a consideration. Joint replacement is now commonplace and in general a very successful procedure providing rapid, effective and significant relief of symptoms, disability and allow a rapid return to function. Often an improvement in the general heath also occurs.

Joint replacement is often appropriate in descending degree for hip, knee, finger, shoulder, elbow and the ankle joint. The hospital stay is commonly now only 3-5 days following joint replacement. Out patient physiotherapy and rehabilitation after discharge is helpful. In RA patients who are commonly not overweight, have other affected joints and restricted overall function, joint replacement usually does not wear out and can last the remainder of the patient's life.

Joint fusion
In some situations joint replacement is less successful in allowing a return of function and an alleviation of disability. This may be exacerbated by a local disruption of the bone adjacent to the joint by the RA disease. In this situation stiffening or fusion of the joint may be a better option than joint

replacement. This may be appropriate for the wrist, ankle or cervical spine affected by chronic RA with joint destruction.

Prognosis of rheumatoid arthritis?

The outlook for patients is perhaps better than many people imagine.

- About 2 in 10 people with RA have a relatively mild form of the disease, and can continue to do most normal activities for many years after the condition first starts.
- Only about 1 in 10 people with RA become severely disabled.
- Most others will have to modify their lifestyle to some extent, but can expect to lead a full life for many years
- In some cases the disease becomes less troublesome over time and seems to burn itself out.

In summary

- Rheumatoid arthritis can range from relatively mild to severe.
- The outlook cannot be predicted for an individual when the disease starts.
- The first line of treatments include treatments such as physiotherapy, occupational therapy, and orthotics often help to maintain function and delay joint degeneration.
- If possible, leading a healthy lifestyle such as not smoking, eating healthily, taking regular exercise, etc, can help to reduce the chance of developing associated diseases.
- Drug treatment usually includes:
    - Anti-inflammatory medication.
    - Analgesia
    - Disease-modifying drugs which reduces joint damage.
- Surgical treatment include
    - Occasional local steroid Injections.
    - Synovectomy
    - Joint replacement for damaged and deformed joints which limit function.
    - Joint fusion in specific circumstances.

Further help and advice

Arthritis Research Campaign - ARC
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Tel: 0870 850 5000
Web: www.arc.org.uk

Arthritis Care
18 Stephenson Way, London, NW1 2HD
Helpline: 0808 800 4050 Tel: 020 7380 6555
Web: www.arthritiscare.org.uk

National Rheumatoid Arthritis Society (NRAS)
11 College Avenue, Maidenhead, Berkshire SL6 6AR
Helpline: 01628 670606
Web: www.rheumatoid.org.uk

www.Ortho500.co.uk - Patient information – Rheumatoid Arthritis
www.Ortho500.co.uk/patientinformation/rheumatoidarthritis