Arthritis in children

Although juvenile arthritis may be of long duration, the long-term outlook is good in the majority of cases

JUVENILE arthritis is the most common rheumatic disease in children, affecting one in 1,000. It is almost as common in children as childhood diabetes. The diagnosis of 'juvenile arthritis' requires the onset of the disease before 16 years of age and duration of over three months. Other conditions that cause arthritis must also be excluded.

The most frequent times of onset are between one and three years and eight and 11 years. It can develop in boys or girls, although most types are more common in girls.

Different types of juvenile arthritis

Juvenile arthritis can be difficult to diagnose and symptoms vary between the different types. The main sub-groups are oligoarthritis, polyarthritis and systemic arthritis.

Oligoarthritis

Oligoarthritis affects between one and four joints in the first six months of illness. 'oligo' means 'few'. This type usually affects the large joints (knees, ankles, elbows) and seldom affects the same joint on both sides of the body.

Oligoarthritis is most common in girls under five. Although this is the mildest form of childhood arthritis, it carries the highest risk of developing eye inflammation/iridocyclitis (also known as iritis or uveitis). Eye problems occur most often in young girls who get oligoarthritis and who test positive for antinuclear antibodies (ANA). This can go unnoticed for a long time so it is vital that all children with juvenile arthritis have a regular eye check by an ophthalmologist, even after remission has occurred.

Polyarthritis

Polyarthritis affects more than four joints in the first six months. It is more common in girls than boys and usually strikes the small joints of the fingers and hands. It can also affect the weight-bearing joints (hips, knees, ankles and feet, neck and jaw). It often affects the same joint on both sides of the body. Other possible features include tiredness and sleep disturbance and rheumatoid nodules.

Polyarthritis can be divided into two groups – those who test negative for the rheumatoid factor (RF) antibody and those who test positive.

– Polyarthritis (RF-negative)

Most children with polyarthritis are RF-negative. This form can start at any age and can be very mild illness or more severe. Soreness in the joints can lead to difficulties walking or writing, although careful treatment can reduce these problems. Children with polyarthritis can seem generally unwell and may develop a fever when their joints are affected, but this is not the very high, daily temperature seen in systemic arthritis.

About a quarter of children with RF-negative polyarthritis will go into remission, while the rest will continue to have some joint problems.

– Polyarthritis (RF-positive)

About 10% of children with polyarthritis are RF-positive which is an antibody similar to that found in adult arthritis. Most children who are RF-positive are girls, usually aged 10 or older. Early treatment is important to slow down the disease and prevent long-term damage. This group can have quite a severe form of disease which needs to be actively treated with medication to avoid joint damage.

Systemic arthritis

Systemic juvenile arthritis affects a child's internal organs as well as the joints. It occurs in boys and girls equally and frequently starts in under-fives. This is the most difficult type of childhood arthritis to diagnose as it has similar symptoms to other illnesses such as measles, meningitis and leukaemia.

Systemic juvenile arthritis usually begins with a high temperature (up to 40°C) once, or sometimes twice, a day, often in the late afternoon or evening. A blotchy, light red rash may appear on the child's thighs, arms or chest. This often appears at the same time as the highest temperature. Glands in the neck, armpits and groin may be swollen. Very occasionally, the inflammation can affect the outer lining of the heart (pericarditis) or, even more rarely, of the lungs (pleuritis). Problems with the joints may appear later.

Some children recover after one bout of systemic arthritis and suffer no long-term problems. Others will have repeat flare-ups for several years. Some go on to develop polyarthritis without further fever attacks.

Diagnosis

It can be very difficult to detect juvenile arthritis. Tests carried out include FBC, ESR, CRP, U&E and LFT and autoantibodies. A child with polyarthritis will be tested for rheumatoid factor and those with oligoarthritis especially will be checked for antinuclear antibodies (ANA) to ascertain risk of eye damage.

If systemic arthritis is suspected, the child will undergo several tests to rule out other, more serious, illnesses. This may include taking a bone marrow sample to rule out leukaemia. An MRI or ultrasound scan may be done to check how much a joint is affected. If a diagnosis is unclear at the start of the condition, a bone scan may help to exclude more serious illnesses which can cause pain in joints or bones.

Treatment

The goals of treatment are to control inflammation, relieve pain and prevent or control joint damage. To reach these goals, treatment includes: medication, exercise, rest, joint protection, eye care and a healthy diet. Other treatment such as surgery may be necessary for long term problems.

Pharmaceutical treatment may include:

- Analgesics such as paracetamol for pain relief
- NSAIDs, such as naprosyn and ibuprofen, for pain relief and to suppress inflammation
- Steroids, such as prednisolone and deltacortil, for flare-ups
- Disease modifying drugs (DMARDs), including methotrexate, salazopyrin, plaquenil and gold. Careful follow up with blood tests is required with DMARDs
- Biologics are a new class of drugs for the treatment of active polyarthritis in children aged over four who fail to respond to DMARDs. Etanercept, the only drug in this class licenced for use in children, works by blocking the process of inflammation and is given by subcutaneous injection.

Exercise

Exercise is a vital part of treatment for juvenile arthritis to maintain muscle strength and joint flexibility and to regain lost strength or motion in a muscle or joint, to prevent contracture and improve general fitness.

Surgery

Most children with juvenile arthritis never require surgery. A very few, with severe arthritis, benefit from some form of surgery. When other forms of treatment have not worked, a surgical procedure can be very effective. When muscles or tendons have become too tight around a joint, surgery to release soft tissue may be performed. This is most often done for hip problems.

When a joint becomes very painful and deformed after many years of arthritis a joint replacement with an artificial joint may occasionally be necessary. Joint replacements are usually done only after growing has stopped.

The future

Treatment of juvenile arthritis has made great strides in recent years. Although juvenile arthritis may be of long duration and without specific cure, the long-term prognosis is usually good. Children with juvenile arthritis should be encouraged to lead as normal and self sufficient lives as possible. With education and encouragement by their healthcare professionals and parents, and adequate treatment, most children with juvenile arthritis can lead active lives, attend school and take part in most activities.

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This article is based on information leaflets produced by Arthritis Ireland and by Arthritis Research Care UK