

Juvenile Psoriatic Arthritis

As the name suggests, Juvenile Psoriatic arthritis is a form of arthritis occurring in children and teenagers under the age of 18. In this form of arthritis, psoriasis – a chronic inflammatory skin disorder – appears along with joint inflammation. Juvenile Psoriatic Arthritis makes up around 8-20% of all cases of arthritis in children and teenagers. It can range from mild, to severe and destructive with the condition progressing into adulthood.

The average age of onset is generally reported as 9-11 years, though some studies show the average age of onset as 4.5 years for girls and 10 years in boys with a female predominance.

Skin Symptoms

Psoriasis symptoms usually presents as scaly, red, irritated patches of skin on the scalp, around the navel, or in skin folds. These patches can also form on the knees and elbows. The skin affected may or may not itch, or in some cases it can feel as though it is burning. The patches of skin can, at times, crack, or develop pustules, though this is less common. In children with psoriasis, the skin is usually thinner/less scaly than the version seen in adults. Children are also more likely to have psoriasis flareups on the face, or around the diaper region.

Skin symptoms can be mild, affecting only a few small areas of skin, or more severe, affecting large areas. While psoriatic arthritis does seem to occur more often in cases where the psoriasis is more severe, it can occur in cases of mild psoriasis too. Skin and joint symptoms do tend to flare at the same time, but there does not appear to be a link between the severity of skin symptoms and the severity of joint symptoms. I.e. Severe skin symptoms do not automatically mean worse pain/more joint involvement or vice versa.

Nail Changes

Children's fingers and toes are often affected by juvenile psoriatic arthritis – not only the joints, but also the nails. It is possible for finger and toenails to become deformed, pitted or for them to loosen. Yellow spots of horizontal yellow lines may also appear. Nail changes are present in around 71% of children, with pitting being the most common change seen.

Examinations of the child's nails can help to make a diagnosis, as the higher the number of pits in the nails, the greater the chance the child is suffering from psoriasis/juvenile psoriatic arthritis.

Eye Symptoms

It is possible for inflammation of the iris and the conjunctiva (the membrane on the inner part of the eyelid and the eyeball) to occur in connection with juvenile psoriatic arthritis. These symptoms can be mistaken for conjunctivitis/pinkeye in young children and so children diagnosed or suspected of juvenile psoriatic arthritis will generally need to see an eye doctor annually. These symptoms are treatable, but can cause vision problems if left to progress untreated.

Joint Involvement

Juvenile psoriatic arthritis causes joint pain and swelling. It is often (around 50%) monoarticular at onset – that is, initially only one joint will be involved. The fingers and toes are most often the first affected joints, and may become “sausage-like” due to retained fluid. In around 50% of children the very end

joints of the fingers or toes are affected. The tendons in the heel, the sole of the foot, and the hip joint, are other commonly affected joints.

In around 47% of children, disordered bone growth with resultant shortening may occur resulting from involvement of the unfused epiphyseal growth plate in the inflammatory process.

Tenosynovitis (inflammation in the lining of the sheath that surrounds a tendon) also occurs in around 30% of children.

Sacroiliitis (inflammation of the sacroiliac joint in the pelvis) occurs in 28% of children with juvenile psoriatic arthritis.

Girls have a higher prevalence of their juvenile psoriatic arthritis resembling oligoarticular arthritis (under 5 joints involved) where as a form resembling spondylarthropathy (affecting the spine) is more common in boys.

Less commonly, juvenile psoriatic arthritis is polyarticular (involving more than 5 joints.) This form affects more girls than boys and can be hard to distinguish from JRA, as it presents in much the same way.

Diagnostic Criteria

In the adult form of psoriatic arthritis, skin symptoms most often appear before joints symptoms – sometimes up to twenty years before – however with the juvenile form, skin and joints symptoms often appear together. In 52% of cases, joint symptoms will actually occur prior to the onset of skin symptoms. Because of this, a full family history is often needed to make the diagnosis.

There are several systems used to classify and diagnose psoriatic arthritis (CASPAR, Vasey and Espinoza classification etc.)

The CASPAR (Classification Criteria for Psoriatic Arthritis) was developed by a large international study group. The criteria for this consist of established inflammatory articular disease with at least 3 points from the following features:

- Current psoriasis (assigned a score of 2)
- A history of psoriasis (in the absence of current psoriasis; assigned a score of 1)
- A family history of psoriasis (in the absence of current psoriasis and history of psoriasis; assigned a score of 1)
- Dactylitis - swelling in the fingers or toes causing “sausage digits” (assigned a score of 1)
- Juxtaarticular new-bone formation (assigned a score of 1)
- RF negativity (assigned a score of 1)
- Nail dystrophy (assigned a score of 1)

The criteria in this system were more specific (98.7% vs 96%), but less sensitive (91.4% vs 97.2%), than those of Vasey and Espinoza classification.

There are no specific blood tests for juvenile psoriatic arthritis, though blood test can be helpful to rule out other forms of juvenile autoimmune arthritis.

The presence of HLA-B8 can be a marker of more severe disease, while HLA-B17 is usually associated with a mild form of psoriatic arthritis.

HLA-B27 positivity is usually associated with Sacroiliitis.

In some cases juvenile psoriatic arthritis may present with a positive ANA test, though this test may also be indicative of other autoimmune disorders.

Causes

As with the adult form of the disease, the causes of juvenile psoriatic arthritis are largely unknown.

There is thought to be a genetic component, as there is often a family history of either psoriasis or psoriatic arthritis, and it is possible that environmental factors may play a part.

Some studies indicate links between certain infections or trauma and the onset or exacerbation of psoriasis/juvenile psoriatic arthritis, but this evidence is not conclusive.

Both psoriasis and juvenile psoriatic arthritis are autoimmune disorders. Neither are contagious.

Treatment

Treatment of juvenile psoriatic arthritis aims to control inflammation as well as managing pain levels. Successful treatment is intended to help the child maximize the use of affected joints, and prevent further deterioration of the joints.

Treatment plans for children may include: medication, physical activity, physical and/or occupational therapy, eye care and topical steroids or other skin care methods for the skin symptoms.

Nonsteroidal anti-inflammatory drugs (NSAIDs) are the first line of medication used in juvenile arthritis to help control pain and inflammation (swelling).

Corticosteroids such as prednisone can be taken orally to relieve inflammation or injected into joints that are inflamed.

Biologic Response Modifiers (BRMs), such as anti-TNF drugs, are a class of drugs that inhibit proteins called cytokines. They must be injected under the skin or given as an infusion in the vein.

Disease-modifying anti-rheumatic drugs such as methotrexate are often used in conjunction with NSAIDs to treat joint inflammation and reduce the risk of bone and cartilage damage.