Juvenile Arthritis, Arthritis in Children

Arthritis is an *inflammation* (the body's way of reacting to injury and/or infection) of the joints. This means the joints have swelling, heat, limitation of motion (inability to fully bend or straighten a joint) and pain. Arthritis can be short-term, lasting only for a few weeks or months, then never returning. It may be longstanding (*chronic*) and last for years, or even a lifetime. The most common form of childhood arthritis is juvenile idiopathic arthritis, or JIA. JIA used to be called juvenile rheumatoid arthritis.

Juvenile idiopathic arthritis usually appears between 6 months and 16 years of age. The first signs are often joint pain or swelling and reddened or warm joints. Many doctors specializing in joint disorders (*rheumatologists*) find that the greater the number of joints affected, the more severe the disease and the less likely that the symptoms will go into total remission.

An early diagnosis is essential to better manage and lessen the effects of arthritis. There are several types of JIA. Understanding the symptoms and characteristics of each helps your child maintain an active, productive lifestyle.

CAUSES

The exact cause of juvenile idiopathic arthritis in children is unknown. It may be an autoimmune disease. In autoimmune diseases, your body's white blood cells start to attack your own body. They can no longer tell the difference between your body's own healthy cells and harmful invaders like bacteria and viruses. The immune system, which is supposed to protect the body from these harmful invaders, instead attacks healthy tissues. This causes inflammation and pain.

THERE ARE 5 MAJOR TYPES OF JUVENILE IDIOPATHIC ARTHRITIS:

- **Polyarticular (multiple joints) arthritis** affects more girls than boys. It causes problems in five or more joints. The symptoms include swelling or pain. Small joints of the hands are affected. The larger weight-bearing joints such as the knees, hips, ankles, feet, and neck are also involved. Low-grade fevers may appear. There may be pressure bumps or nodules on the body. These appear on areas subjected to pressure from sitting or leaning. There are 2 forms of polyarticular JIA:
  - Rheumatoid Factor Positive – This tends to be a more severe form and resembles adult rheumatoid arthritis.
  - Rheumatoid Factor Negative – This form tends to be less severe than Rheumatoid Factor Positive JIA
- **Oligoarticular (few joints) JIA** affects four or less joints. This form of JIA accounts for about half of all JIA cases. The symptoms include pain, stiffness, limitation of motion and/or swelling in the joints. The knee and wrist joints are the most commonly affected. An inflammation of the colored area of the eye (*iris*) may occur with or without joint symptoms. This inflammation, called iridocyclitis, iritis, or uveitis, can be detected early by an eye doctor. A test called an ANA (antinuclear antibodies) should be done in children with oligoarticular JIA. This test identifies patients at high risk of developing chronic iridocyclitis. Children who are ANA positive need to be evaluated by a pediatric eye doctor every three months.
- **Systemic (affecting the entire body) JIA** affects the whole body. Symptoms include high fevers (usually occurring one to two times per day) that often increase in the evenings and then may suddenly drop to normal. During the onset of fever, the child may feel very ill, appear pale, or develop a rash. The rash may suddenly disappear and then quickly appear again. The spleen and lymph nodes may also become enlarged. Eventually many of the body's joints are affected by swelling, pain, and stiffness.
- **Psoriatic Arthritis** affects the joints and skin. Joint symptoms include pain, stiffness, limitation of motion and/or swelling in the joints. Several joints may be affected. Patients with this form of arthritis also develop psoriasis. Psoriasis is a skin disease that causes patches of skin scaling and redness. The rash is often located over the elbows and knees. Psoriasis may also affect the nails, causing small pits or indentations in the nail. Skin symptoms may precede or follow the joint symptoms.

- **Enthesitis-related arthritis** affects the joints and enthesis (where the tendon connects to the bone). This type of arthritis is more common in males. It usually occurs with oligoarthritis in the large joints (knees) and enthesitis. Over time the spine and joint of the lower spine (*sacroiliac*) become involved. Inflammation in the eye (*anterior uveitis*) may develop and may occur with redness of the eye and increased sensitivity to light. If symptoms of eye inflammation occur, evaluation by an eye doctor is required. Most patients with this form of arthritis will test positive for a genetic marker called HLA-B27.

SYMPTOMS

The first signs of arthritis can be hidden or can be obvious. Signs may include limping, a sore wrist, finger, or knee. Joints may suddenly swell and remain enlarged. Stiffness (usually worse in the morning with improvement throughout the day) or soreness may come on in a wrist, finger, knee, neck, hips, or other joints. There may also be limitation of motion of an affected joint. This may be gradual or sudden. Rashes may suddenly appear and then leave. Rashes may come and go from one area to another. High fevers that tend to spike in the evenings and suddenly disappear are characteristic of systemic JIA.

DIAGNOSIS

Your caregiver is usually able to make a diagnosis by taking a history and doing routine blood work and x-rays. Other factors that help diagnose JIA are:

- The disease usually starts before the age of 16.
- Arthritis must be present for at least 6 weeks.

Some specialized testing may include:

Laboratory Tests

- Rheumatoid factor testing. This is an antibody found in the blood of children with some forms of JIA.
- ANA (antinuclear antibody) testing. This blood test will help tell which children are likely to have eye disease with JIA.
- HLA-B27. This is a genetic marker that is often positive in children with enthesitis-related arthritis
- Tests that measure the amount of inflammation that is present include:
  - Erythrocyte sedimentation rate (ESR).
  - C-reactive Protein (CRP).
- Radiological Tests (CT Scans, MRIs).
- A bone scan is used to detect changes in bone and joints to evaluate the causes of unexplained bone and joint pain.
- X-rays are used to detect changes in the joint. Overtime, patients with JIA may develop narrowing of the joint space or areas of bone destruction (erosions). Physicians may order x-rays periodically to determine if there is progression of the disease.
- Other Tests.
- Samples of joint fluid or lining of the joints (*synovium*) is sometimes taken for testing.

TREATING JUVENILE IDIOPATHIC ARTHRITIS

JIA may be treated with a combination of medication, physical therapy, and exercise. Injections of corticosteroids into a joint are beneficial. Sometimes surgery is needed. The goal of treatment is to relieve pain and inflammation. This is done to slow down or prevent the destruction of joints. It also helps to restore use and function of the joints. This in turn will promote optimal growth, physical activity, social and emotional development in your child.

Diet

Maintain a balanced diet and adequate vitamin intake. Make sure your child gets the proper amount of sleep every day. More rest during an arthritis flare may be helpful.

Medications

- Nonsteroidal anti-inflammatory drugs (NSAID's) may be prescribed. These drugs are used to help reduce inflammation and pain. These medications limit the release of harmful chemicals from white blood cells. Dosages will be adjusted to meet your child's needs.

- Your caregiver will explain what the medication is meant to do and what side effects, if any, your child may experience. Although the medication may temporarily ease swelling and pain, it is important for your child to continue taking the medication until your child's caregiver says to stop.
- If NSAID's do not control inflammation of the joints, other medications may be tried. You can also talk with your child's caregivers to find out more information about newer treatments available.

➢ Other drugs may be prescribed when symptoms do not improve or resolve with NSAIDS. These drugs may include:
  - Methotrexate is often used when NSAIDs fail. This drug is given orally at a low dose once a week. It has anti-inflammatory activity and helps to decrease swelling of the joints.
  - Anti-TNF drugs have recently been introduced. They block a substance that is involved in the inflammatory process. This drug is given by injection on a weekly or every other week.

Physical Therapy

➢ A physical therapy program is important in the management of any type of arthritis. A physical therapist will explain the importance of certain activities. Exercises suited to your child's specific condition will be used. Range-of-motion exercises are used to restore flexibility in stiff, sore joints. Other exercises will help build strength and endurance.

Regular Exercise

➢ It is important to maintain a regular exercise program in spite of pain. Keeping strength is necessary to help support and protect joints. Regular exercise also helps to maintain range of motion of joints. Safe, low impact activities include walking, swimming, and bicycling. A proper warm up is important before beginning exercises.

➢ Consult your child's caregivers regarding sports restrictions. Impact sports can be harmful to weakened joints and bones.

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