Treating Juvenile Idiopathic Arthritis

A Naturopathic Perspective

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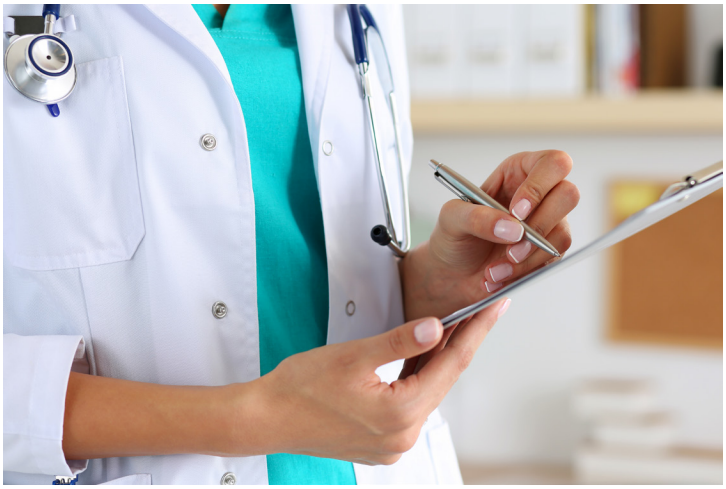
What Is It?

Juvenile idiopathic arthritis (JIA) can be a painful condition for children and parents alike, as they juggle the everyday struggle while hoping for answers from the medical community. JIA is the most common childhood rheumatic illness, and is defined as a group of chronic arthritic diseases which normally occur in children under the age of 16.[1] JIA can present with morning stiffness, swelling, and tender joints, which force many children to opt out of extracurricular activities and can leave them unable to bear weight for several hours each morning, heavily decreasing their quality of life.[1] JIA encompasses three types of onset: oligoarticular, polyarticular, and systemic, the latter being the most aggressive and serious form. Oligoarticular JIA is the most common form, present in 45% of patients, and is most often located in the knees or ankles, with asymmetric involvement of joints and a total of four or fewer joints involved.[1][2] Polyarticular JIA presents in about 25–35% of cases and often has an abrupt onset, affecting five or more joints both large and small.[1] Systemic JIA presents in about 20–30% of patients, affecting both large and small joints with an abrupt onset, high spiking fever, and a salmon-coloured rash.[1] The patient may have generalized muscle weakness, pain, and tenderness, and will appear systemically ill, often with an enlarged liver and spleen.[2]

Diagnosis

If JIA is suspected, patients should immediately be referred to a pediatric rheumatologist and an ophthalmologist to help monitor treatment and avoid detrimental outcomes, as eye involvement can lead to permanent vision loss and blindness.[1] Diagnosis is based on a thorough history and clinical findings. The American College of Rheumatology criteria includes the presence of objective arthritis symptoms for at least six weeks in at least one joint in a patient under 16 years old, in the absence of other sources of

juvenile arthritis.[1] Clinical evaluation must determine the joints to be arthritic, which requires evidence of swelling, effusion, or two of the following: warmth, tenderness, pain on passive range of motion, or a limited range of motion.[1] There are no specific lab tests to confirm a diagnosis of JIA; however, some tests that can be done which can help to monitor prognosis include a complete blood count, inflammatory markers (CRP, ESR), liver function tests, assessment of kidney function, ultrasound, CT, and MRI.[1][2]



Prognosis

Advances in treatment as well as the introduction of intra-articular steroids and other medications has dramatically improved the prognosis for children with arthritis.[2] Poor long-term outcomes have been associated with RF-positive arthritis, active systemic disease, and symmetrical disease.[2] Complete remission criteria according to the American College of Rheumatology includes no inflammatory joint pain, morning stiffness, fatigue, synovitis, progression of damage, or elevations in ESR and CRP.[2] Most children affected by oligoarticular disease have eventual permanent remission; however, a small number of children progress to persisting polyarticular disease.[2] Anterior uveitis (inflammation of the middle layer of the eye) is seen in as many as 20% of children with JIA, and as this is typically asymptomatic at onset, regular screening by an ophthalmologist is critical.[2] Systemic onset of JIA can result in a rare but life-threatening condition known as macrophage activation syndrome, in which all three blood lines become decreased, leading to extremely low blood pressure and central nervous system disease.[2]

Risk Factors and Genetic Links

Although the etiology is widely unknown, there are a few genetic associations and associated disorders including ankylosing spondylitis, psoriatic arthritis, inflammatory bowel disease, Sjögren syndrome, SLE, and mixed connective tissue disease.[1] Environmental triggers in a genetically susceptible individual for developing JIA can include psychological stress, abnormal hormones, joint trauma, and bacterial or viral infections (influenza, adenovirus, mumps, rubella, Epstein-Barr virus, and mycobacterial infection).[1]

Treatment

Treatment Goals

A team-based approach to treatment can be beneficial for creating the best outcomes and quality of life for the patient, and can include pharmacologic therapy, psychosocial interventions, nutritional and supplement therapy, physical therapy, academic counselling, and physical therapy.[2] Treatment goals are relieving pain and inflammation, preserving joint function, preventing further progression of disease, maintaining normal growth and development, and preserving a normal lifestyle.[2]

Conventional Treatment

Treatment therapy is determined by the severity of disease activity, and success of therapy is monitored with repeated physical examinations and history taking.[2] First-line treatment is methotrexate, with 70–80% of people experiencing a 30% improvement in symptoms.[1] Methotrexate may slow the progression of damage; however, it may cause bone-marrow, lung, liver, or kidney toxicity, along with nausea, vomiting, mouth sores, loss of appetite, hair loss, and fatigue.[1][3] NSAIDs are also utilized for their anti-inflammatory and analgesic properties; however, long-term side effects can include stomach pain and heartburn, stomach ulcers, allergic reactions, and a tendency to bleed more.[1] Sulfasalazine, hydroxychloroquine, and leflunomide are alternative drugs used when methotrexate is not effective or limited by adverse effects; however, irreversible retinal damage has been reported in patients on hydroxychloroquine for long periods of time.[1] Prednisone is reserved for patients that are affected by systemic disease, or as a way to begin patients on drug therapy at the start to try and control the disease.[1] A small number of patients with severe JIA opt for surgical options, which can include a joint replacement, synovectomy, and soft tissue release.[1]

Naturopathic Treatment

Naturopathic medicine can help to bridge the gaps in treatment and help increase patient comfort, while decreasing medication use to the lowest effective dose, through reducing pain and inflammation and replenishing nutrient deficiencies.

Calcium and Vitamin D

A randomized controlled trial (RCT) investigated the role of calcium in supporting children with juvenile rheumatoid arthritis.[4] Steroid use in JIA is known to decrease bone mineral density, reduce the absorption of calcium, and increase fracture risk; however, children with JIA are also reported to have a low bone mineral density independent

of steroid use, and approximately 15–26% suffer from fractures before adulthood.[5] Patients in the RCT were given 1000 mg of calcium with 400 IU vitamin D, or a placebo with 400 IU vitamin D, and results were that adding calcium had a significant benefit on increasing total body bone mineral density.[4]

Omega-3 Fatty Acids

In another RCT, 2 g/d omega-3 fatty acids given to children with JIA for 12 weeks showed a significant improvement in the number of swollen joints, juvenile arthritis disease activity scale, childhood health assessment questionnaire, and inflammatory mediators, and decreased the daily NSAID requirements.[6] Decreasing NSAID requirements was also effective in reducing side effects experienced by the patient.[6] Patients can also be educated as to how to consume more fish high in omega-3 fatty acids including salmon, trout, mackerel, sardines, and fresh tuna.[7]

Dietary Changes

Patients should be encouraged to consume diets rich in fruits, vegetables, nuts, seeds, and whole grains, and low in animal fats and animal protein.[1] Avoiding common and individual allergens will also be beneficial to reducing overall inflammation.[1] Parents can encourage their children to avoid refined sugars, processed foods, white breads, pasta, and cereals, and consume higher-protein sources with each meal including nut butters, hummus, and eggs.[6]

Physical Therapy

Physical activity should be encouraged, along with the application of both hot and cold packs in order to decrease joint pain and stiffness.[1] The application of hot packs should be used to stimulate blood flow, relax muscles, and decrease pain, followed by cold packs which can decrease swelling, stiffness, and associated pain.[5]

Massage therapy performed by the patient's parents for 15 minutes a day resulted in an immediate reduction in cortisol levels and anxiety, and an increased participation in physical activities.[5]

Final Thoughts

A holistic approach needs to be taken when evaluating autoimmune disease and inflammatory disorders in order to have a long-term positive impact on a patient's quality of life.

References

1. Mayo Clinic. *Juvenile idiopathic arthritis.* · https://www.mayoclinic.org/diseases-conditions/juvenile-idiopathic-arthritis/symptoms-causes/syc-20374082 · Updated 2017-12-20.
2. Medscape. *Juvenile idiopathic arthritis.* · https://emedicine.medscape.com/article/1007276-overview · Updated 2016-10-06 · Accessed 2017-11-14.
3. Killeen, O. "In juvenile idiopathic arthritis, is folate supplementation effective against methotrexate toxicity at the expense of methotrexate's efficacy?" *Archives of Disease in Childhood.* Vol. 91, No. 6 (2006): 537–538.
4. Lovell, D., et al. "A randomized controlled trial of calcium supplementation to increase bone mineral density in children with juvenile rheumatoid arthritis." *Arthritis & Rheumatism.* Vol. 54, No. 7 (2006): 2235–2242.
5. The RACGP JIA Working Group. *Clinical guideline for the diagnosis and management of juvenile idiopathic arthritis.* South Melbourne: The Royal Australian College of General Practitioners, 2009, 39 p, ISBN 978-0-86906-298-2. Available from http://www.ipts.org.il/_Uploads/dbsAttachedFiles/cp119-juvenile-arthritis.pdf · Accessed 2017-11-14.
6. Gheita, T., et al. "Omega-3 fatty acids in juvenile idiopathic arthritis: Effect on cytokines (IL-1 and TNF-α), disease activity and response criteria." *Clinical Rheumatology.* Vol. 31, No. 2 (2011): 363–366.
7. JIA at NRAS. *Diet and JIA.* · http://www.jia.org.uk/diet-and-jia · Published 2015-11-05 · Accessed 2017-11-14.