Ohio Chapter
INCORPORATED IN OHIO
American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN®

UNDERSTANDING POLYARTICULAR JUVENILE IDIOPATHIC ARTHRITIS (PJIA)

FOR PRIMARY CARE PHYSICIANS

ARTHRITIS RELATED TO INFECTION

- **Septic Arthritis** – Viable infectious agent is present in the synovial space.
- **Reactive Arthritis** – Response to an infectious agent that is or has been present in some other part of the body.
- **Postinfectious Arthritis** – Special type of reactive arthritis in which immune complexes containing non-viable components of an infectious agent are present in the inflamed joint e.g. Post-streptococcal arthritis

COMMON VIRUSES THAT MAY CAUSE ARTHRITIS

- Parvovirus
- Epstein-Barr Virus (EBV)
- Hepatitis B
- Cytomegalovirus (CMV)
- Hepatitis C
- Enteroviruses
- Adenovirus

LYME ARTHRITIS

- Second most common manifestation of Lyme Borreliosis (erythema migrans is most common)
- Arthritis appears months to years after infection
- 2/3 of children have monoarthritis of the knee (see below)
- Polyarticular involvement of small joints is rare

INFLAMMATORY ARTHRITIS

JUVENILE IDIOPATHIC ARTHRITIS (JIA)

Definition:

- Not a single disease
- Exclusion diagnosis that includes all forms of childhood chronic arthritis of unknown cause
- Begins before the age of 16 years
- Persists for more than 6 weeks

JIA SUBTYPES

Oligoarthritis	Arthritis of 4 or fewer joints within the first 6 months
• **Persistent**	Affecting not more than 4 joints throughout the disease process
• **Extended**	Extending to affect more than 4 joints after the first 6 months
Polyarthritis	Arthritis of 5 or more joints within the first 6 months; Subdivided according to presence of rheumatoid factor (RF)
• **RF positive**	
• **RF negative**	
Systemic arthritis	Arthritis with or preceded by quotidian (daily) fever for at least 3 days, accompanied by one or more of the following: 1. Evanescent erythematous rash 2. Lymphadenopathy 3. Hepatomegaly and/or splenomegaly 4. Serositis 5. (Mandatory exclusion of infective and malignant; arthritis may not be present early in course)
Psoriatic arthritis	Arthritis and psoriasis or arthritis with at least 2 of following: 1. Dactylitis 2. Nail pitting or onycholysis 3. Psoriasis in first-degree relative
Enthesitis-related arthritis	Arthritis and enthesitis or arthritis or enthesitis with 2 of following: 1. Sacro-iliac joint tenderness or inflammatory lumbo-sacral pain 2. HLA-B27 antigen 3. Onset after age 6 years in male 4. Acute (symptomatic) anterior uveitis 5. History of HLA-B27 associated disease in a first-degree relative
Undifferentiated arthritis	Arthritis that fulfills criteria in none or more than 2 of the above categories

For more information, please visit:
https://ohioaap.org/education-cme-moc-ii/polyarticular-juvenile-idiopathic-arthritis-pjia/

FOR PRIMARY CARE PHYSICIANS

FREQUENCY, AGE AT ONSET, AND SEX DISTRIBUTION OF THE INTERNATIONAL LEAGUE OF ASSOCIATIONS FOR RHEUMATOLOGY (ILAR) CATEGORIES OF JUVENILE IDIOPATHIC ARTHRITIS (JIA)

	Frequency	Occurrence of Chronic Uveitis	Antinuclear antibodies	Onset Age	Sex ratio
Oligoarthritis	27-56%	Common (5-30%) Especially if ANA positive	75-85%	Early childhood; peak at 2-4 years	F>>>M
Rheumatoid-factor-positive polyarthritis	2-7%	Rare (<1%)	40-50%	Late childhood or adolescence	F>>>M
Rheumatoid-factor-negative polyarthritis	11-28%	Common (15%)	40-50%	Biphasic distribution; early peak at 2-4 years and later peak at 6-12 years	F>>>M
Systemic arthritis	4-17%	Rare (<1%)	10%	Throughout childhood	F=M
Psoriatic arthritis	2-11%	Common (10%)	~40%	Biphasic distribution; early peak at 2-4 years and later peak at 9-11 years	F>M
Enthesitis-related arthritis	3-11%	Symptomatic acute uveitis (~7%)		Late childhood or adolescence	M>>F
Undifferentiated arthritis 11-21%	-				

PRIMARY CARE PROVIDER MANAGEMENT CONSIDERATIONS FOR THE CARE OF PATIENTS WITH JIA

A. Medications that immunocompromise
   a. Disease Modifying Anti-Rheumatic Drugs (DMARDs)
      i. Methotrexate
      ii. Leflunomide
   b. Biologics
      i. Anti-TNF (eg etanercept, adalimumab, infliximab)
      ii. Anti- IL-6 (eg tocilizumab)
      iii. Anti-Il-1 (eg anakinra, canakinumab)
      iv. Abatacept
   c. Oral small molecules (eg apremilast, tofacitinib, baricitinib)

B. Vaccine considerations for immunocompromised patients
   a. **No live virus vaccines**
   b. Pneumococcal vaccines – The administration of both the 13-valent pneumococcal conjugate vaccine (PCV13) and the 23-valent pneumococcal polysaccharide vaccine (PPSV23) is indicated for patients with immunocompromising conditions
   c. Hepatitis B – all patients starting immunosuppressive therapy should be screened with serologic markers of hepatitis B virus (HBsAg, HBcAb, HBsAb), and vaccination repeated as needed.
   d. Annual influenza vaccine

C. Growth Disturbances in JIA
   a. Children with inflammatory rheumatic conditions are at risk for growth retardation
   b. Growth Hormone Therapy may restore normal height in children with inflammatory conditions

D. Malignancy concerns in JIA
   a. JIA (like RA) is associated with an increased risk of malignancy (Rheumatology 2014;53:968)
   b. **Cancer prevention: smoking cessation, cervical screening, HPV and HepB vaccines should be encouraged**

E. Atherosclerosis in JIA
   a. There is an increased incidence of Cardiovascular Disease in Auto-Inflammatory and Autoimmune Conditions
   b. **Prudent to control traditional risk factors:**
      i. High blood pressure
      ii. Tobacco use
      iii. Hypercholesterolemia
      iv. Hypertension

F. Osteoporosis may be increased in chronic inflammatory conditions like JIA – **The mainstay of treatment for decreased bone mineral density in children with rheumatic disease is modification of the risk factors**

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