LRI Children's Hospital

Joint Pains in Children

Staff relevant to:	Children's Medical and Nursing Staff working within UHL Children's Hospital
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Written by: Reviewed by:	Dr A Sridhar, Consultant Paediatrician/Paediatric Rheumatologist Dr A Sridhar
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Contents

1. Introduction and Who Guideline applies to

This is an area where **clinical assessment** is usually much more important than "**routine investigations**".

This document provides guidance for medical and nursing staff within UHL Children's Hospital when assessing and treating Children and Young People presenting with joint pains.

SINGLE PAINFUL JOINT

The most important diagnosis to consider is **SEPTIC ARTHRITIS**
Can occur:

- In Any Joint
- All Age Groups
- May be co-existing **osteomyelitis** (particularly in very young)

2. Differential diagnosis:

1. **History of Injury:**
   Traumatic, Acute Joint bleed (may be the first presentation of Haemophilia or other bleeding disorder) - Haemarthroses

2. **Significant Fever and Pain:**
   Septic arthritis or Osteomyelitis

3. **Recent Viral illness, diarrhoea, Tonsillitis:**
   Reactive Arthritis - 7-14 days after the illness, fever may not be present

4. **History of Inflammatory Bowel Disease (IBD):**
   Usually Monoarthritis of large joints reflects IBD activity

5. **Vasculitic Rash:**
   Henoch-Schonlein Pupura (HSP) or other forms of vasculitis like Systemic Lupus Erythematosus

6. **Recent Drug ingestion:**
   Serum sickness often associated with Urticarial rash

7. **Bone pain, Lymphadenopathy, Hepato-splenomegaly**:
   Leukemia, Lymphoma, Neuroblastoma, bone tumour (h/o nocturnal bone pain)

8. **Symptomatic for > 6 weeks:**
   Associated with joint swelling, morning stiffness, refusal to participate in routine activities; **Consider Juvenile Idiopathic Arthritis (JIA) – which is a diagnosis of Exclusion. Please see section 7 for the Diagnostic Criteria for JIA.**

3. Investigations:

Based on the diagnosis after a detailed history as above

1. **Routine**:
   FBC, UEs, LFTs, Bone profile, Vitamin D, CRP, Plasma viscosity (ESR)

2. **Haemarthroses:**
   Detailed bleeding and clotting profile after discussing with Paeds Haematology team

3. **Trauma:**
   X-rays, Ultrasounds and MRI scan depending on Orthopaedic opinion

4. **Infectious cause:**
   Viral titres, ASLO titres, Lymes serology, Throat swab, stool cultures depending on specific infectious cause

5. **Septic Arthritis/Osteomyelitis:**
   In addition to routine, blood cultures, imaging

6. **Haematological malignancy**:
   Routine, blood film and other investigations as per Haematologist's advice

7. **Juvenile Idiopathic Arthritis (JIA):**
   Routine bloods, CRP, Plasma viscosity, Autoimmune screen: ANA, Rheumatoid factor, HLA- B27 (for Enthesitis JIA, Spondylitis and Sacro-ilitis)

8. **JSLE**: ANA, ENA, dsDNA, Complements, Immunoglobulins, Anti-Cardiolipin antibodies, Urine- ACR/PCR

4. Acute Hip Pain with Limp:

1. **Transient Synovitis/ Irritable Hip:**
   Routine bloods, CRP, Blood C/S, x-ray- Hip-Orthopaedic opinion

2. **Perthe's Disease:**
   Orthopaedic Referral for further investigations and management

3. **Slipped Capital Femoral Epiphysis (SCFE):**
   Orthopaedic referral for further investigations and management

4. **Septic Arthritis:**
   Routine, blood cultures, Orthopaedic referral for further investigations and management

5. **Duration > 6 weeks:**
   Consider JIA and investigate appropriately with referral to **Paeds Rheumatology service**

5. Management Septic arthritis:

Please refer to the Bone and Joint Infections UHL Childrens Guideline

6. Acute polyarthropathy:

Differential Diagnosis:

1. Trauma (consider Non-accidental injury in younger children)

2. Henoch-Schonlein purpura (HSP)

3. Drug and allergic reactions

4. Post- infectious: Viral, Lyme's, Post-streptococcal etc.

5. Rare: Haematological malignancies, Neuroblastoma, disseminated infection, immunodeficiency etc.

6. Juvenile Idiopathic Arthritis (JIA)

7. Other vasculitis conditions: SLE, Juvenile Dermatomyositis (JDM), Sarcoidosis, Behcet's, Sjogren's syndrome etc.

7. Juvenile Idiopathic Arthritis (JIA)

Criteria for Diagnosis- Based on American College of Rheumatology- Revised criteria

- Age of onset < 16 years
- Arthritis of one or more joints (Clinical/Radiological evidence of Arthritis)
- **Duration of disease > 6 weeks**
- **Other conditions which present with arthritis in childhood must be excluded**

Classification (ILAR)

- Systemic JIA
- Polyarticular JIA: RF+ve and RF -ve
- Oligoarticular JIA: persistent and extended
- Psoriatic arthritis
- Enthesitis - related arthritis
- IBD related arthritis

Clinical History:

Very thorough history required to elucidate a credible differential diagnosis.

Examination: all joints and Spine for evidence of arthritis rather than arthralgia (as above).

Skin: Purpura (HSP), rashes (e.g. macular rash of systemic JIA, psoriasis)

Signs of systemic disease: lymphadenopathy, hepato-splenomegaly, pleural or pericardial involvement.

Eyes: Iritis: in JIA. Look for red eye, irregular pupil, but usually asymptomatic.

Rheumatic Fever (extremely rare): murmurs plus pericardial rub

Investigations

Juvenile arthritis is a *clinical* diagnosis. Immunology will not help with diagnosis
Routine blood tests: for evidence of systemic disease: e.g. anaemia, liver or renal dysfunction. CRP, Plasma Viscosity, Vitamin D levels
Urine: Check urine for blood, protein.
Throat swab, ASLO titres: as indicated
CXR as indicated.
Viral Titres: EBV, ASOT
ECG/ECHO: in Systemic JIA, JSLE and other Vasculitis presentations

Autoimmune Screen:

ANA and RF

If spinal and Sacroiliac joint involvement-HLA-B27

If suspecting SLE: dsDNA antibody, compliments, ENA titres, Immunoglobulin profile, Complement levels, Anti-Cardiolipin antibodies

Imaging: in JIA: X-Rays, U/S and MRI studies: for effusion and Synovitis

MRI studies: Sacroilitis, Spine and Hip involvement:

Management of JIA:

Anti-inflammatory Therapy (NSAIDs): in JIA

Younger Children (< 10 yrs): Ibuprofen 30-40 mg/kg/day in 3-4 divided doses (BNF-C)

Older Children (> 10 yrs age): Naproxen 5-7.5 mgs/kg/dose BD, Max: 500 mgs BD/day (BNF-C)

Early involvement of physiotherapist and OT (PaediatricPhysio@uhl-tr.nhs.uk)

Referral to Paeds Rheumatology Service (Contact the Rheumatology Clinical Fellow/Consultant of the week- for Paediatric Rheumatology)

In JIA- Ophthalmology referral to screen for Uveitis

Paediatric Rheumatology Referral;
For consideration of:

- Oral or IV steroids
- Joint Injections,
- Starting DMARDs- Methotrexate, Biological therapy etc

Long term follow up until 16-18 years- before transitioning to the Young Adult Rheumatology Clinic

Consider Referral to the Paediatric Rheumatology Service

1. Joint symptoms persists for > 4 weeks
2. Significant Joint effusion
3. Polyarthritis
4. Joint involvement with Extra-articular features- Vasculitic rash, Renal Involvement
5. Evidence of joint contractures
6. Vasculitis other than HSP
7. Non-infectious Uveitis
8. Features of Sarcoidosis
9. Arthritis with Lymes disease features
10. Hypermobility syndromes, EDS etc

8. Summary of Management: Paediatric ED attendances

If you consider diagnosis of JIA depending the diagnositic crietria:

1. **Routine investigations including CRP, PV, Vitamin D, ANA, RF**
2. **Start NSAIDs**
3. **Urgent physiotherapy referral** PaediatricPhysio@uhl-tr.nhs.uk
4. **Urgent Paediatric Rheumatology referral: contact via email/COW for Paediatric Rheumatology**
5. **Please request GP to review in 2-3 weeks**

If you consider diagnosis of Non-specific joint pains or Hypermobility

1. **Physiotherapy referral:** PaediatricPhysio@uhl-tr.nhs.uk
2. **Non urgent referral to Paediatric Rheumatology referral**

9. Education and Training

- Teaching sessions for the SHOs and SpRs
- Update sessions for all medical staff during Clinical Meetings
- Clinic teaching sessions
- Information leaflets on www.versusarthritis.org

10. Monitoring Compliance

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting arrangements
Review of JIA referrals to the Paediatric Rheumatology clinic	Audit	Dr A Sridhar	2-3 yearly	Children's clinical governance and audit team

11. Supporting References

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6. Sen ES, Clarke SL, Ramanan AV: The Child with Joint Pain in Primary Care: 2014 Dec; 28(6):888-906.
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8. Pamela Welsh: Oligo and Poly JIA: UpToDate: Feb 2022
9. Treatment of JIA: What's new? Current Opinion in Rheumatology: PRINTO: 2019

Related documents:

Limping Child UHL Paediatric Emergency Department Guideline (UHL C13/2016)

Bone and Joint Infections UHL Childrens Guideline (UHL D3/2019)

12. Key Words

Joint Pains, Arthritis, JIA, Limping Child, Hypermobility

The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs.
As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.

Contact and review details	
Guideline Lead (Name and Title) Dr A Sridhar- Consultant Paediatrician/Paediatric Rheumatologist	**Executive Lead** Chief Medical Officer
Details of Changes made during review: Section 3, point 7 : Added (for Enthesitis JIA, Spondylitis and Sacro-ilitis) for clarity	