Rheumatoid Arthritis

Autoimmune chronic inflammatory disorder characterised by an inflammation of the synovial joints leading to tissue destruction as well as a wide variety of extra-articular features.

Criteria (American College of Rheumatology)

Four of the seven criteria must be met for diagnosis:

1. Morning joint stiffness for ≥1hr for ≥6wks.
2. Arthritis of >3 joint areas for ≥6wks.
3. Arthritis of proximal IP, MCP, or wrist joints for ≥6wks.
4. Symmetrical arthritis for ≥6wks.
5. Subcutaneous nodules.
6. Positive test for rheumatoid factor (RF).
7. Radiographic erosions and/or periarticular osteopenia in hand &/or wrist joints.

Epidemiology

- Prevalence: 1-3% in industrialised countries
- Peak incidence 40-50yrs
- Onset is more common in winter.
- 2.5F:1M

Risk Factors

- Genetic susceptibility: HLA DRw4 and DR1.
- ?infective aetiology

Presentation

Symptoms

- Non-specific fatigue, fever and weight loss are common.
- Insidious onset of symmetrical polyarthritis (pain, swelling, morning stiffness)

Signs

- Symmetrical, distal, small joint arthritis involving PIPJ, MCPJ, wrists, MTP, ankles, knees and cervical spine joints. Shoulders, elbows and hips are less commonly affected
- Hand deformities (ulnar deviation, swan neck and Boutonniere's of the fingers, Z deformities of thumbs and piano key deformity of wrist)
- Muscle wasting and tendon rupture
- Polpliteal cyst (>40%)
- Occasionally sudden onset monoarthritis or systemic illness with minimal joint problems at first (especially M). Known as Palindromic Rheumatoid Arthritis.

Systemic involvement

Eyes: Secondary Sjogren's syndrome, scleritis and episcleritis
Skin: Leg ulcers - Felty's syn (RF+ RA, neutropenia and ↑spleen). Rashes, nail fold infarcts
Rheumatoid nodules: Common (eyes, subcut, lung, heart and occ. vocal cords)
Neuro: periph nerve entrapment, atlanto-axial sublux^{n}, polyneuropathy,mononeuritis multiplex
Respiratory: pleural disease, pulm. fibrosis, obliterative bronchiolitis, Caplan's syn
Cardiovascular: pericardial involvement, valvulitis and myocardial fibrosis, vasculitis
Kidneys: rare including analgesic nephropathy. Amyloidosis
Liver: mild hepatomegaly and abnormal transaminases common
Other: thyroid disorders, osteoporosis, depression, splenomegaly.

Investigations

Diagnosis is essentially clinical, inv for DDx & assessment of systems involved.
Urinalysis: microscopic haematuria/proteinuria may suggest connective tissue disease
Bloods: ESR & CRP (usually ↑), FBC (normocytic ↓Hb & ↑plt), ferritin↑ but Fe/TIBC↓. LFT (↓Alb, ALP/GGT↑), RF (+ve in 60-80% of RA & 5% of normal pop.), ANA (30% RA)
Specific antibodies: anticyclic citrullinated peptides occur 10yr before clinical disease.
Other: synovial fluid analysis: excludes polyarticular gout, septic arthritis
Radiology: soft tissue swelling, periarticular osteopenia, ↓joint space, erosions & deformity.

Management

Multidisciplinary team: chronic multisystem disorder (GP, rheumatologist, physio, OT, etc.).
Simple analgesia: e.g. **Paracetamol**
Anti-inflammatories:

- NSAIDs (**SE:** GIT inflammation, renal toxicity, marrow toxicity with methotrexate)
- COX-2 drugs e.g. **celecoxib** (**CI:** IHD, HF, CVA/TIA).
- Corticosteroids – injected for temporary relief with acute joint exacerbations

Disease Modifying Anti-Rheumatic Drugs (DMARDs). Require 4-6mo for full response.

- **Methotrexate** - give folate too.
- **Sulfasalazine**
- **Gold** - PO or IM (better)
- Other DMARDs include **hydroxychloroquine**, **penicillamine**, **azathioprine**, **ciclosporin**, **cyclophosphamide**, **leflunomide** and **minocycline**. All have potentially serious SE.

Monoclonal Antibodies. Block pro-inflammatory cytokine TNF-alpha

- **Infliximab** and **etanercept** are very effective (CI if on high dose steroids or bad DM)

Surgery: synovectomy, joint replacement, tendon repair, others

Complications

- ↓ADLs
- Depression is common
- Anaemia
- Vasculitis, vasculitic ulcers
- Pleurisy/pleural effusions, pulmonary fibrosis
- Pericarditis
- Lymphadenopathy
- Dry-eye syndrome (keratoconjunctivitis sicca)
- Neuropathy
- Felty's syndrome
- Amyloidosis (rare)
- Orthopaedic complications: carpal tunnel syndrome, tendon rupture (particularly extensors of fingers or thumb), cervical myelopathy, osteoporosis
- Increased risk of infections. Pneumonia and sepsis. Septic arthritis rare.

Prognosis

- ↓Life expectancy but prognosis is variable (20% have only 1 attack, 10% severe)
- ~50% unable to work within 10 years
- Poorer prognosis associated with insidious onset, male, extra-articular manifestations, functional disability at 1yr after onset, high RF titres, HLA-DR4, erosions on XR≤3yrs.