

Musculoskeletal Disorders: Rheumatoid Arthritis & Osteoarthritis

Rheumatoid Arthritis (RA)

Definition: RA is a chronic systemic autoimmune inflammatory disorder primarily affecting synovial joints, leading to progressive joint destruction and disability.

Etiopathogenesis:

- Autoimmune reaction triggered by genetic (HLA-DR4, DR1) and environmental factors (infections, smoking).
- Abnormal immune activation → T-cell and B-cell activation → autoantibodies (Rheumatoid factor, Anti-CCP).
- Chronic synovitis → pannus formation → cartilage & bone destruction → deformities.

Clinical Manifestations:

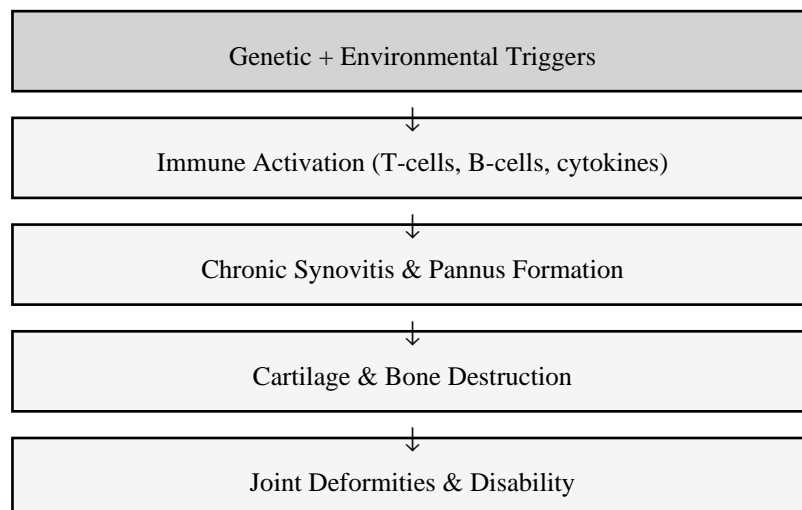
- Symmetrical polyarthritis (small joints: hands, wrists, feet).
- Morning stiffness > 1 hour.
- Joint swelling, tenderness, warmth.
- Extra-articular: nodules, vasculitis, anemia, lung involvement.
- Late: deformities (swan neck, boutonnière, ulnar deviation).

Management:

Non-pharmacological: Patient education, rest & physiotherapy, splints, exercise, diet.

Pharmacological: NSAIDs for pain, corticosteroids for flare, DMARDs (methotrexate, sulfasalazine, leflunomide), biologics (anti-TNF, rituximab).

Flowchart: Pathophysiology of Rheumatoid Arthritis



Osteoarthritis (OA)

Definition: OA is a chronic degenerative joint disease characterized by progressive cartilage loss, subchondral bone changes, and osteophyte formation, leading to pain and reduced mobility.

Etiopathogenesis:

- Mechanical stress, aging, obesity, trauma, genetics.
- Cartilage degeneration due to imbalance of repair and breakdown.
- Subchondral bone sclerosis and osteophyte formation.
- Joint space narrowing → stiffness and functional impairment.

Clinical Manifestations:

- Gradual onset joint pain worsened by activity, relieved by rest.
- Morning stiffness < 30 minutes.
- Common sites: knees, hips, spine, DIP & PIP joints.
- Crepitus, bony enlargement, reduced range of motion.
- No systemic features (unlike RA).

Management:

Non-pharmacological: Weight reduction, physiotherapy, low-impact exercise, supportive devices.

Pharmacological: Analgesics (paracetamol), NSAIDs, intra-articular corticosteroids, hyaluronic acid injections. Surgery: joint replacement in severe cases.

Flowchart: Pathophysiology of Osteoarthritis