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Pharmacotherapeutics
Chapter 2 (h) : Musculoskeletal disorders

Topics	Page No
Musculoskeletal disorders	3
▪ Rheumatoid Arthritis	3
▪ Osteoarthritis	6

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Chapter 2 (h)

Musculoskeletal disorders

- Musculoskeletal disorders comprise diverse conditions affecting bones, joints, muscles, and connective tissues.
- These disorders may result in pain and loss of function. It is happening due to the lack of knowledge and irregular/improper diet plan.
- Now a day, it is big challenges for the modern society and pharmaceutical science.

Rheumatoid Arthritis

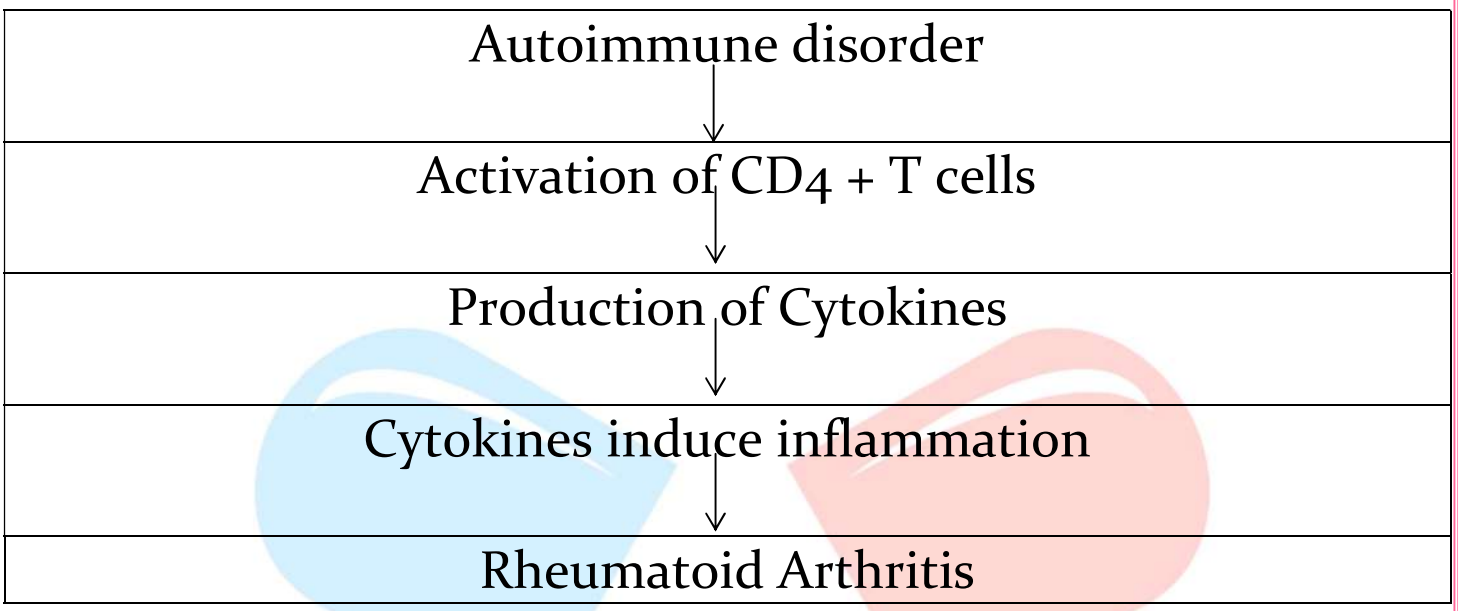
- RA is a chronic , progressive ,inflammatory musculoskeletal disorder affecting many joints and patient suffers from swelling and pain of joints.



Etiology

- Genetic
- Autoimmune disorder
- Environmental factors
- Hormones

Pathogenesis



Clinical Manifestations

- Joint pain
- Swelling of joint
- Redness of joints
- Joint stiffness particularly in the morning or after sitting continuously

Non Pharmacological Management

- Make the diet charts and follow accordingly and avoid the fattier and lipids contents in the diet.
- Change the lifestyle and apply the home remedies means replace the allopathic medicine with ayurvedic medicine (because of less side effects)
- Regular practice of yoga exercise and other physical exercise
- During more pain condition rest is required and follow the heat and cold for managing pain (Both heat and cold can relieve pain in joint. Heat also relieves stiffness, and cold can relieve muscle spasms and pain).
- Avoid the smoking and alcoholism.

Pharmacological Management

- Rheumatoid arthritis has no known treatment. However clinical trials show that early therapy with Disease Modifying Anti-Rheumatoid Drugs (DMARDs) reduces the symptoms.
- Drug recommendation will be based on the severity of symptoms and the duration of rheumatoid arthritis.
    - **NSAIDs :** Pain and inflammation can treat with NSAIDs . paracetamol , ibuprofen , diclofenac , Meloxicam etc.
    - **Steroids :** Corticosteroids(prednisolone) reduces inflammation , pain and damage of joints.
    - **Conventional DMARDs :** These drugs can reduce the progression of RA , and prevent permanent damage to joints . **examples :** Methotrexate , leflunomide (immunosuppressive) Hydroxychloroquine (immunosuppressive) , Slfasalazine (reduces inflammation) .
    - **Biologic DMARDs :** These are commonly most effective when used with Conventional DMARDs example : Infiliximab.
    - **Targeted synthetic DMARDs :** These are used when Conventional and biologic DMARDs are failed . example : Baricitinib , tofacitinib.

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Osteoarthritis

→ OA is a type of arthritis and it is most common progressive joint condition in which the protective tissues (cartilage , synovial fluid) at the end of bones wears down . and causes pain in joints.



Etiology

- Past injury (torn cartilage , ligament injury , or dislocation of joints)
- Metabolic disorder (degeneration of cartilage or fluid of joints)
- Obesity
- Poor posture
- Genetic
- Diabetes
- Poor diet
- Ageing

Following are at more risk of OA

- Women
- Fat people
- Over 50 people
- Working job that requires kneeling , climbing , heavy lifting.
- Family history.

Pathogenesis

Any etiological factor (ageing , obesity etc.)

↓

metabolic dysfunction

↓

degeneration of cartilage (loss of function)

↓

thinning of cartilage and rubbing together

↓

Osteoarthritis

Clinical Manifestations

- Joints pain
- Stiffness in the joints
- Inflammation
- Reduce motion and flexibility range
- Sound of cracking , clicking or popping on moving the joints

Non Pharmacological Management

- Exercise
- Weight loss
- Avoiding wrong posture
- Taking healthy diet

Pharmacological Management

- **Oral Pain Relievers :** Paracetamol
- **Topical pain reliever :** Diclofenac Emulgel, ketoprofen gel, piroxicam gel, diclofenac Flector plaster, and diclofenac other plaster.
- **NSAIDs :** Ibuprofen , Naproxen etc , they reduce pain and swelling.
- **Corticosteroids :** They suppress immune system and reduce inflammation : Cortisone , triamcinolone.
- **Duloxetine :** It is an antidepressant and approved by FDA for treatment of Musculoskeletal problems.