Inflammatory Myopathies

- They are a group of rare systemic diseases characterized by progressive weakness due to chronic skeletal muscle inflammation
- Includes : Polymyositis PM / Dermatomyositis DM / inclusion-body myositis IBM
- Polymyositis PM is more common than Dermatomyositis DM
- Mean age is 50 and over .. if they occur before the age 18 then they are considered juvenile inflammatory myopathies
- PM and DM are more common in women while IBM is more common on men
- Polymyositis (PM): an inflammatory myopathy affecting the proximal skeletal muscles, with evidence of elevated CK and myositis on EMG with no or minimal skin findings
- Dermatomyositis (DM): an inflammatory myopathy characterized by progressive symmetrical proximal muscle weakness and distinctive skin findings
- Inflammatory myopathies can occur in association with other autoimmune connective tissue diseases and Malignancies (so **screening for cancers** should be done)
    - Incidence of malignancy is way higher in DM than in PM
    - The most common associated tumors are of the ovary, breast, colon, skin (melanomas), lungs, stomach and non-Hodgkin lymphomas
- Pathogenesis
    - PM is cell-mediated cytotoxicity against unidentified skeletal muscle antigens : CD8+ T cells in the Endomysium (around the muscle fibres)
    - Dermatomyositis is humoral (antibody-mediated) inflammatory infiltrates involving B cells and CD4+ T cells in the Perimysium, Perivascular & Perifasicular area
- Symptoms
    - Constitutional : Fatigue / Fever / Weight Loss
    - Skin : mainly for DM and sometimes for PM
        - Gottron papules : MCP bumps on the knuckles
        - V sign : clavicular area chest redness
        - Shawl sign : scapular area back redness
        - Malar Rash WITH nasolabial fold involvement
        - Heliotrope rash : eyelids redness
        - Periungual telangiectasia
        - Nailfold capillaries changes
        - Mechanic hands : hyperkeratosis (like fish scales)
        - Holster sign : lateral thigh surface and hips redness
        - Calcinosis cutis
    - Muscle weakness
        - Insidious onset over 3-6 months
        - Symmetrical affecting large proximal muscles around the shoulders, hips, thighs, trunk and neck
        - Difficulty standing from a chair, getting out of a car, climbing stairs, raising the head off the pillow or combing hair
        - Weakness of neck flexors more than extensors

        - No pain but with Early morning stiffness
        - Oropharyngeal muscles weakness might cause difficulty chewing, dysphagia or aspiration
        - Respiratory muscle weakness might cause restrictive lung disease
    - Arthralgia with Rheumatoid like deformities
    - Heart : AV block / pericardial effusion / heart failure
    - Raynaud phenomenon
    - GI : abdominal pain and bleeding
    - Interstitial lung disease ILD
- Diagnosis
    - ESR & CRP are normal or mildly elevated and they do not correlate with disease activity or response to treatment
    - Muscle enzymes : High CK (levels do not correlate with disease severity)
    - Antibodies
        - Anti-Jo-1 : direct correlation between level and disease activity / associated with ILD
        - Anti-Mi-2 : Dermatomyositis with V or shawl sign / good prognosis
        - Anti-SRP in severe cases of Polymyositis
    - EMG revealing myopathy
    - Biopsy : gold standard : will reveal inflammatory infiltrates in the affected muscles
    - Malignancy workup especially in DM
    - CXR to evaluate the lungs
- Inclusion Body Myositis
    - An inflammatory myopathy affecting both the proximal and distal skeletal muscles
    - It occurs more in men and only starts after 50 with an insidious onset
    - No skin lesions or systemic manifestations are seen
    - Distal Muscle weakness mainly affecting the quadriceps & arm flexors making it hard to grip stuff
    - CK is normal or mildly elevated
    - Diagnosis is confirmed by electron microscopy or trichrome stain
    - Light microscopy will reveal Endomysial inflammation with intramuscular vacuoles rimmed by basophilic material and small, eosinophilic cytoplasmic and nuclear inclusions
    - Patients do not respond to treatment
- Treatment
    - First line : glucocorticoids
    - PLUS a steroid-sparing immunosuppressive agent like Methotrexate and azathioprine
    - Duration of therapy is 18-24 months

Sjogren Syndrome

- Inflammatory autoimmune disease affecting primarily the exocrine glands
- Female to male ratio is 9:1
- It can be
    - Primary : association with HLA-DR52
    - Secondary to other autoimmune diseases like SLE
- Pathophysiology : Lymphocytic infiltrates replace functional epithelium leading to decreased exocrine secretions
- Sjogren Syndrome manifests as Sicca syndrome and systemic manifestations
- Sicca Symptoms : Mucosal dryness
    - Ocular : xerophthalmia and keratoconjunctivitis sicca
    - Oral : xerostomia / salivary gland enlargement / tongue swelling and fissures / dry eaten out gums / dental caries
    - Vaginal dryness causing dyspareunia
    - Nasal dryness : chronic rhinitis and epistaxis
    - Xerosis : dry skin and pruritus
- Systemic Manifestations
    - Arthralgias and Arthritis
    - Raynaud phenomenon
    - Constitutional : fever, weight loss, fatigue
    - GI : dysphagia / GERD
    - Vasculitis
    - Peripheral neuropathy
    - Glomerulonephritis
    - Interstitial Lung Disease
    - There is an increased risk for lymphomas
- For diagnosis : Anti Ro and Anti La WITH Sicca must be present
- Other diagnostics
    - High ESR
    - ANA is positive in 80% of cases and RF in 50%
    - Poor prognostic tests : Cryoglobulinemia / Hypergammaglobulinemia / low C3 and C4
    - Gold standard : salivary glands biopsy
    - Ultrasound and MRI for parotids
    - Schirmer test shows decreased tear production
- Treatment
    - Xerostomia
        - First line : Stimulation of salivary flow by sugar free flavored lozenges and gums
        - Second line : Oral muscarinic agonists like Pilocarpine to increase saliva secretion
        - Avoid dry food, smoking, and drugs with anticholinergic side effects

        - Adequate oral hygiene after meals to prevent dental disease
        - Frequent water intake
    - Xerophthalmia
        - First line : Artificial tears
        - Second line : pilocarpine
    - Hydroxychloroquine and NSAIDs for joint pain
    - Immunosuppressants for other manifestations