Connective Tissue Disorders
Connective Tissue Disorders

- Lupus erythematosus (DLE/SCLE/SLE)
- Scleroderma (Morphoea/ Systemic Sclerosis)
- Dermatomyositis /Polymyositis
- Rheumatoid arthritis
- Sjogren’s syndrome
- Mixed connective tissue disease
Lupus Erythematosus (LE)

Chronic:
- Discoid Lupus Erythematosus

Subacute:
- Annular, Papulosquamous

Acute:
- Malar rash, Morbilliform rash, bullous lesions
Discoid Lupus Erythematosus (DLE)

- DLE is a relatively benign disorder of the skin, characterized by well-defined, reddish, scaly patches which tend to heal with atrophy, scarring and pigmentary changes.
- The histology is characteristic.
- Female: Male - 2:1
- Onset - fourth decade of life
- Family history: 4%
- Genetic factors: HLA B7, B8

Contd....
Discoid Lupus Erythematosus (DLE)

- Precipitating factors - environmental factors, sunlight, infections, trauma, stress, cold, pregnancy.

- Circumscribed, erythematous patches with adherent scales, central atrophy and surrounding pigmentation

- ‘Carpet tack’ sign

- Sites: face, scalp, ears, nose, limbs and trunk

- Scarring Alopecia
Diagnosis

- **Histopathology:**
  Epidermal atrophy, basal layer liquefaction, lymphocytic dermal infiltrate and ‘Civattebodies’

- **Differential diagnosis:**
  Polymorphous Light eruption, Morphoea, Lichen planus, Lupus vulgaris, Sarcoidosis
Subacute Cutaneous LE

- Non – scarring; papulosquamous / annular polycyclic lesions
- Vesiculation, crusting, hypopigmentation, telangiectasia, alopecia, photosensitivity, Raynaud’s phenomenon
- **Sites**: above waist, neck, arms
- Systemic involvement 35 %
- ANA, anti-Ro, anti- La
Systemic LE

- **Definition:**
  A systemic disease with immunopathological abnormalities affecting various organs particularly the skin, joints and vasculature.
- **Females > males**
- **Onset: early adult life**
Clinical features

- Fever, lymphadenopathy
- Arthritis and arthralgia
- Cutaneous lesions: specific and non-specific
- Raynaud’s phenomenon
- Renal – proteinuria, casts, nephropathy
- Pleurisy, pneumonitis, fibrosis, infarction, pneumothorax
- Pericarditis, hypertension, endocarditis, valve incompetence

Contd...
Clinical features

- CNS involvement: migraine, epilepsy, neuropathy
- GIT involvement: oesophageal dysmotility, diarrhoea, ascites
- Splenomegaly, hepatitis, cirrhosis
Cutaneous lesions

LE specific:
- Malar rash
- DLE / SCLE like lesions
- Photosensitivity, facial edema

Non specific:
- Vasculitic
- Alopecia
- Mucous membrane involvement
- Pigmentation
- Sclerodactyly
- Calcinosis
- Urticaria
- Bullous lesions
Sle alopecia
Special subsets of LE

- SLE in pregnancy
- Neonatal LE
- Drug induced LE
- Childhood SLE
- Rowell’s syndrome
Laboratory Investigations

- CBC: anemia, leukopenia, thrombocytopenia
- ESR: raised
- Urine analysis, BUN, Se. Creatinine
- False positive VDRL & RA factor
- LE cell test
- ANA
- Anti-DNA, anti-Sm, anti-histone, cryoglobulins, serum complement levels
- DIF – Lupus band test
American Rheumatism Association criteria

- Malar rash
- Discoid rash
- Photosensitivity
- Oral ulcers
- Non–erosive arthritis
- Serositis: pleurisy or pericarditis
- Renal disorder: persistent proteinuria (>0.5g/day) or cellular casts
- Neurological disorders: seizures or psychosis

Contd...
American Rheumatism Association criteria

- Haematological disorders – haemolytic anemia or leukopenia (<4000/mm³) or lymphopenia (<1500/mm³) or thrombocytopenia (<1,00,000/mm³)
- Immunological disorder – LE cells, or anti-DNA antibody or anti Sm antibody or false positive VDRL
- Antinuclear antibodies

4 or more criteria are required for definitive diagnosis
Treatment

- Photoprotection: Sunscreens-physical, chemical
- Antimalarials: Chloroquin, Hydroxychloroquin
- Corticosteroids- topical, intralesional, oral, intravenous, pulse
- Dapsone
- Immunosuppressants: Methotrexate, cyclophosphamide, azathioprine, cyclosporine
- Retinoids: Isotretinoin, etretinate, acitretin
- IVIG, thalidomide, clofazimine, Interferon-α
Morphoea

Definition:

- Sclerosis confined to the skin, localised or generalized is termed as ‘Morphoea’
- Female: Male - 3:1
- Onset: 20 – 40 years;
- Precipitating factors: Trauma, Vaccination, Radiotherapy, Borrelial infection / Measles
Clinical features

- Round or oval indurated plaques with lilac border
- Heals slowly with residual hyperpigmentation
- Multiple, asymmetrical distribution
- **Sites:** trunk, limbs, face
- Clinical types: Plaque, guttate, subcutaneous, linear
morphea
Treatment

- Triamcinolone acetonide infiltration
- Penicillamine: 300 – 600 mgs / day
- Diphenylhydantoin
- Systemic steroids
- Cyclosporine, Vit. D3 analogues
- Topical tacrolimus
- Phototherapy, plasmapheresis, physiotherapy, plastic surgery
Special subsets

Pseudoscleroderma
- Occupational scleroderma
- Toxic oil epidemic syndrome
- GVHD
- Scleredema
- Myxedema
- Amyloidosis
Systemic Sclerosis

- Systemic sclerosis is a multisystem disorder characterized by vascular abnormalities, connective tissue sclerosis and atrophy and autoimmune changes.
- Females : Males 3-6 : 1
- Onset : Fourth decade
- Etiology : Unknown, genetic factors, trauma, viral infections
Subtypes

- Diffuse cutaneous systemic sclerosis
- Limited cutaneous systemic sclerosis
- CREST: Calcinosis, Raynaud’s phenomenon, Esophageal dysmotility, Sclerodactyly, Telangiectasia
Cutaneous features

- Raynaud’s phenomenon
- ‘Hide-bound’ skin
- Pigmentation – mottled or hyperpigmentation
- Swelling of hands & joints, atrophy
- Finger and leg ulcers, digital gangrene, stellate scars
- Nail fold telangiectases
- Calcinosis
Fingers become white due to lack of blood flow, then blue as vessels dilate to keep blood in tissues, finally red as blood flow returns.
Systemic features

- **Pulmonary**: dyspnoea on exertion, pleurisy, pulmonary interstitial fibrosis
- **GIT**: esophageal dysmotility, abnormal peristalsis, steatorrhoea, malabsorption
- **Renal**: proteinuria, azotemia, hypertension, nephrotic syndrome
Systemic features

- **Bone changes:** resorption, osteolysis, erosive arthropathy

- **Hepatic:** cirrhosis, portal hypertension, ascites

- **Cardiac:** fibrillation, heart block, valve prolapse

- **CNS:** neuropathy
Diagnosis

Subcommittee for Scleroderma Criteria of the American Rheumatism Association

- **Major**: scleroderma proximal to the digits affecting limbs, face, neck or trunk
- **Minor**: sclerodactyly
digital pitted scarring
bilateral basal pulmonary fibrosis

1 major or 2 minor criteria are required
Investigations

- **Serology**
  - ANA
  - Anticentromere antibodies
  - Anti-Scl 70 antibody

- **Histopathology**
  - Hyalinization and homogenisation of collagen, dermal lymphocytic infiltrate
Treatment

- Use of gloves
- Vasodilators
- Low molecular weight dextran
- Corticosteroids
- Immunosuppressants: Methotrexate, Cyclophosphamide
- Penicillamine, colchicine, interferons
- Symptomatic treatment for pulmonary, cardiac, renal and GIT symptoms
Dermatomyositis

- **Definition**: The combination of proximal muscle weakness and a clinically characteristic inflammatory skin change
- **Females**: Males - 2:1
- **Onset**: Childhood-before 10 years; Adults: 40-60 years
- **Etiology**:
  - Familial: HLA B8, DR3, B14
  - Drug induced: Penicillamine, tamoxifen
  - Infections: viral, toxoplasma, staphylococcal
Clinical features

- Proximal muscle weakness
- Raynaud’s phenomenon
- Gottron’s papules
- Heliotrope
- Calcinosi cutis
- Poikiloderma
- Systemic involvement
calcinosi
Diagnostic criteria

- Progressive symmetrical proximal muscle weakness
- Elevated muscle enzyme levels
- Abnormal electromyogram
- Abnormal muscle biopsy
- Characteristic cutaneous manifestations

Last criteria plus three others required for definite diagnosis of dermatomyositis
Investigations

- Muscle enzymes: CPK, SGOT, SGPT, LDH, S. Aldolase
- Muscle biopsy
- EMG
- 24 hour urinary creatine
- Serology: ANA, anti Jo – 1, anti- Mi 2
Treatment

- Corticosteroids
- Immunosuppressants: Cyclophosphamide, Azathioprine, Cyclosporine, Methotrexate
- Antimalarials, Indomethacin
- Levamisole, Colchicine, Dapsone, Pentoxifylline, plasma exchange
- Calcinosis - Warfarin, probenecid, physiotherapy
Cutaneous Manifestations of Rheumatoid Arthritis

- Rheumatoid nodules / linear subcutaneous bands
- Vascular lesions:
  - Infarcts, ‘Bywater’s lesions’, ulcers, purpura, arteritis, vasculitis, palmar erythema, leg ulcers, gangrene, livedo reticularis, pyoderma gangrenosum, GIT ulcers and hemorrhage
- Still’s disease
**Sjogren’s syndrome**

- Xerostomia with keratoconjunctivitis sicca

**Cutaneous features:**

- Xerosis, Generalised pruritus, Loss of sweating, diffuse alopecia
- Raynaud’s phenomenon, Purpura, arteritis, splinter hemorrhages, gangrene
Mixed Connective tissue disease / Overlap syndromes

Mixed Connective tissue disease (MCTD):
- Features of SLE, PSS, DM & PM
- Raynaud’s phenomenon, arthritis, arthralgia, sausage shaped fingers, swelling of hands
- Abnormal oesophageal motility, impaired pulmonary diffusing capacity, myositis, aseptic meningitis, psychosis, trigeminal neuropathy

Overlap syndromes:
- Association of connective tissue diseases; examples-PSS and DM, SLE and RA
Thank you