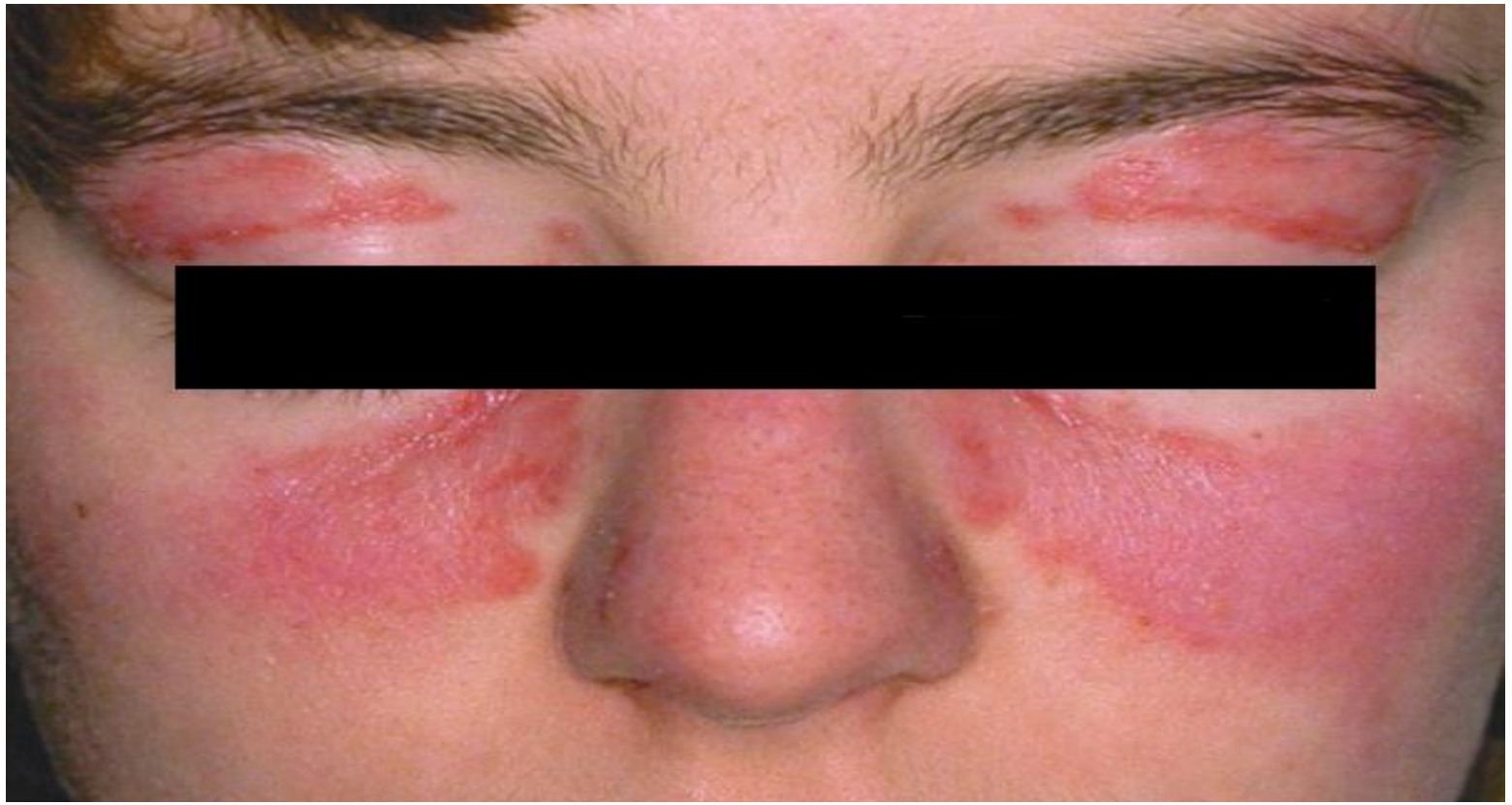


A 22 year old women presented with six weeks history of painful swelling of the small joints of the hands.

What is lupus?

Multisystem inflammatory connective tissue disease characterized by the presence of:

- Autoantibodies,
- Circulating immune cmplexes,
- And multisystem tissue damage.

epidimiology

Epidemilogy

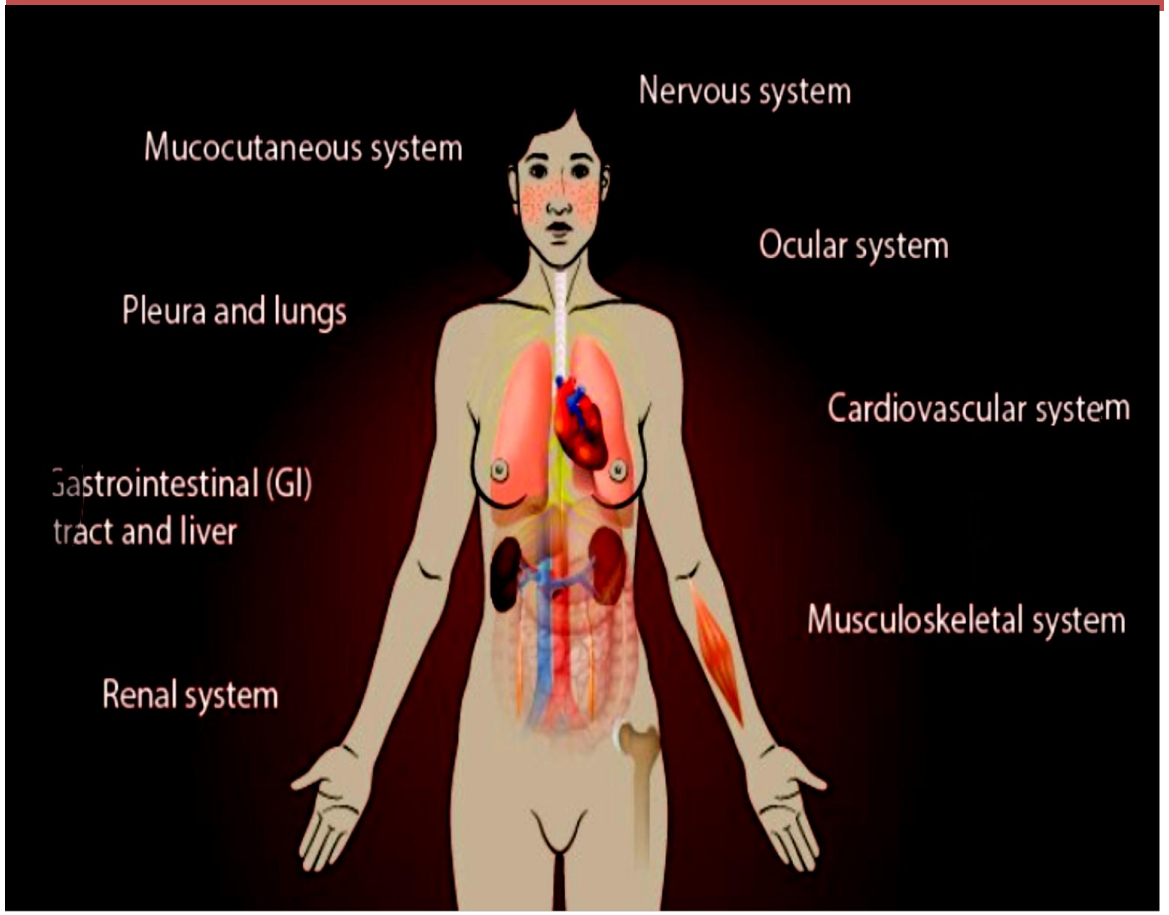
- Prevalence 1 /250
- 2nd and 3rd decade
- Female : male 9 : 1

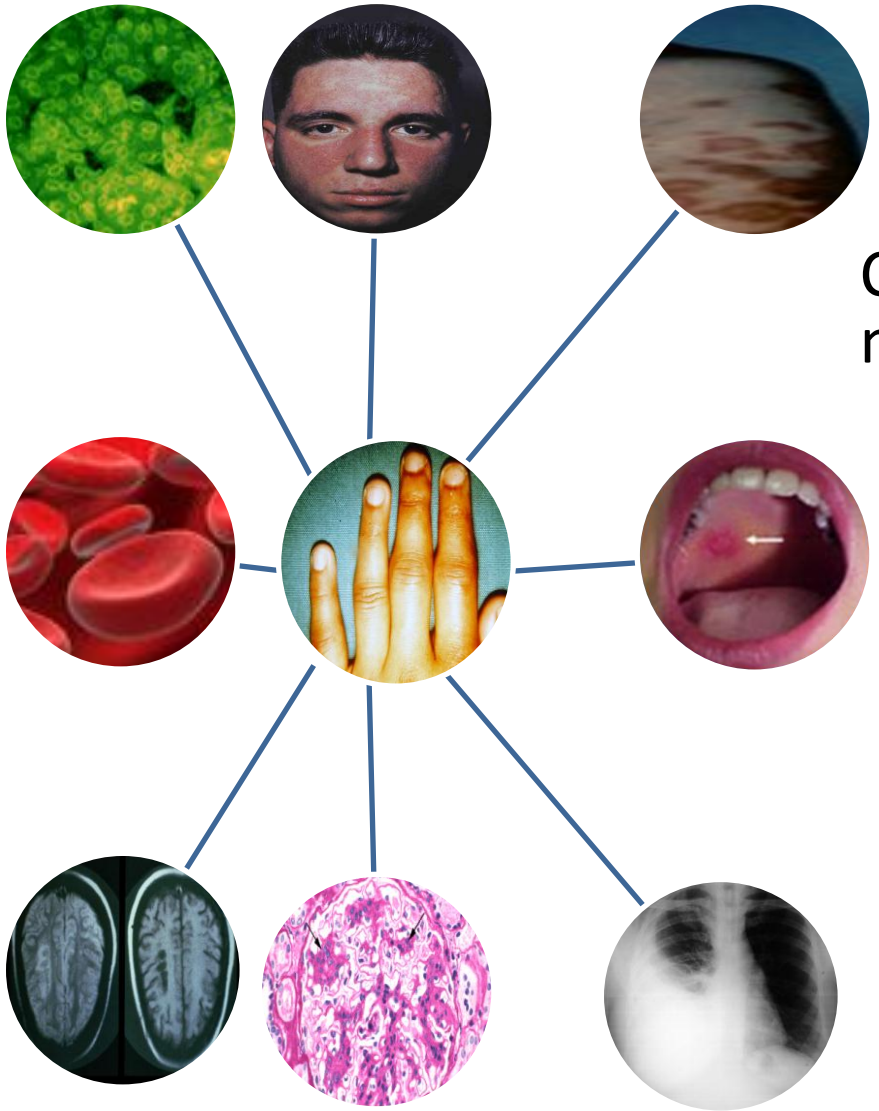
clinical features

General

- **Fatigue.**
- **Fever.**
- **Lymphadenopathy.**
- **Weight loss.**
- **Myalgia.**

systemic





Common Systemic manifestations

- A 22 year old women presented with six weeks history of painful swelling of the small joints of the hands.

- on examination she had temperature of 37.8°C eythematous rash on her cheeks ,mouth ulcers in soft palate and synovitis of the 2nd and 3rd metacarpo-phyalangeal joints of both Hands .

Lupus triad

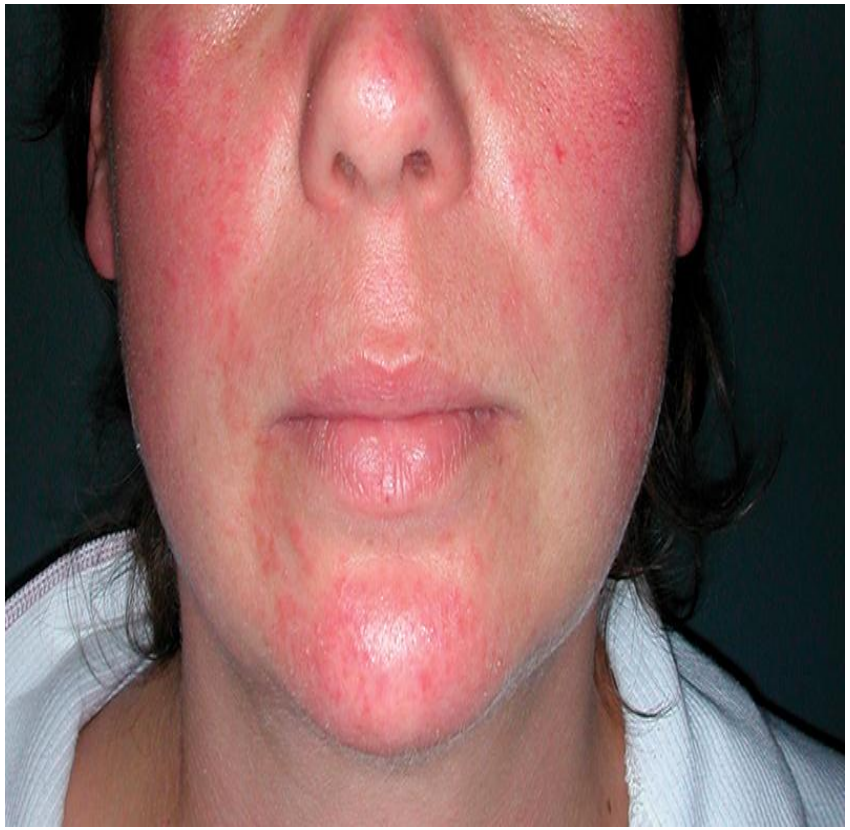
- Joint pain .
- Fever.
- Characterstic rash.

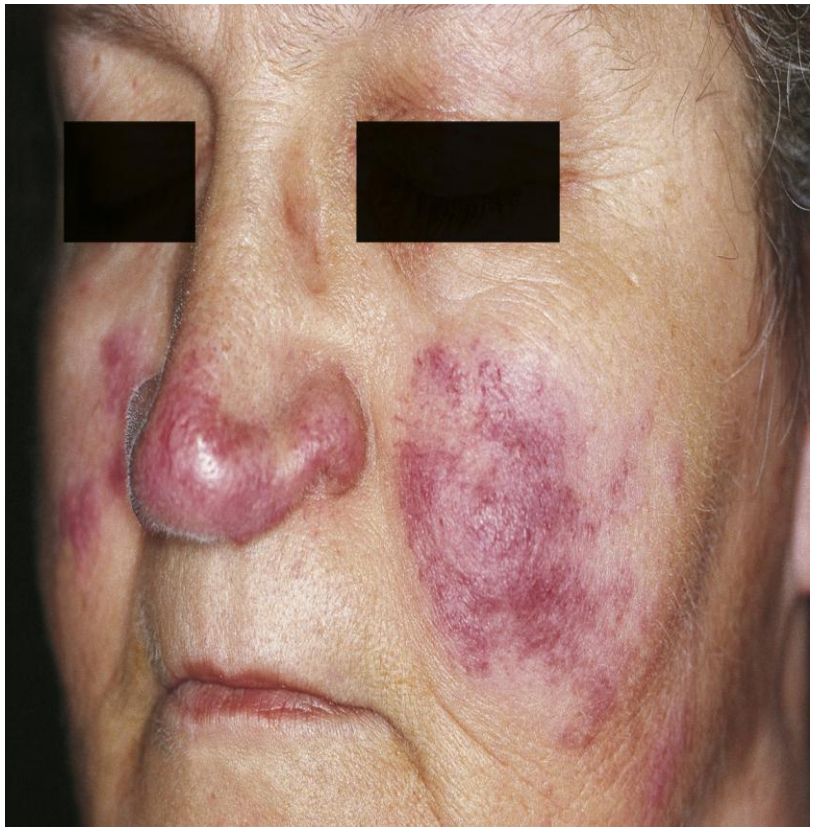
Common presentation

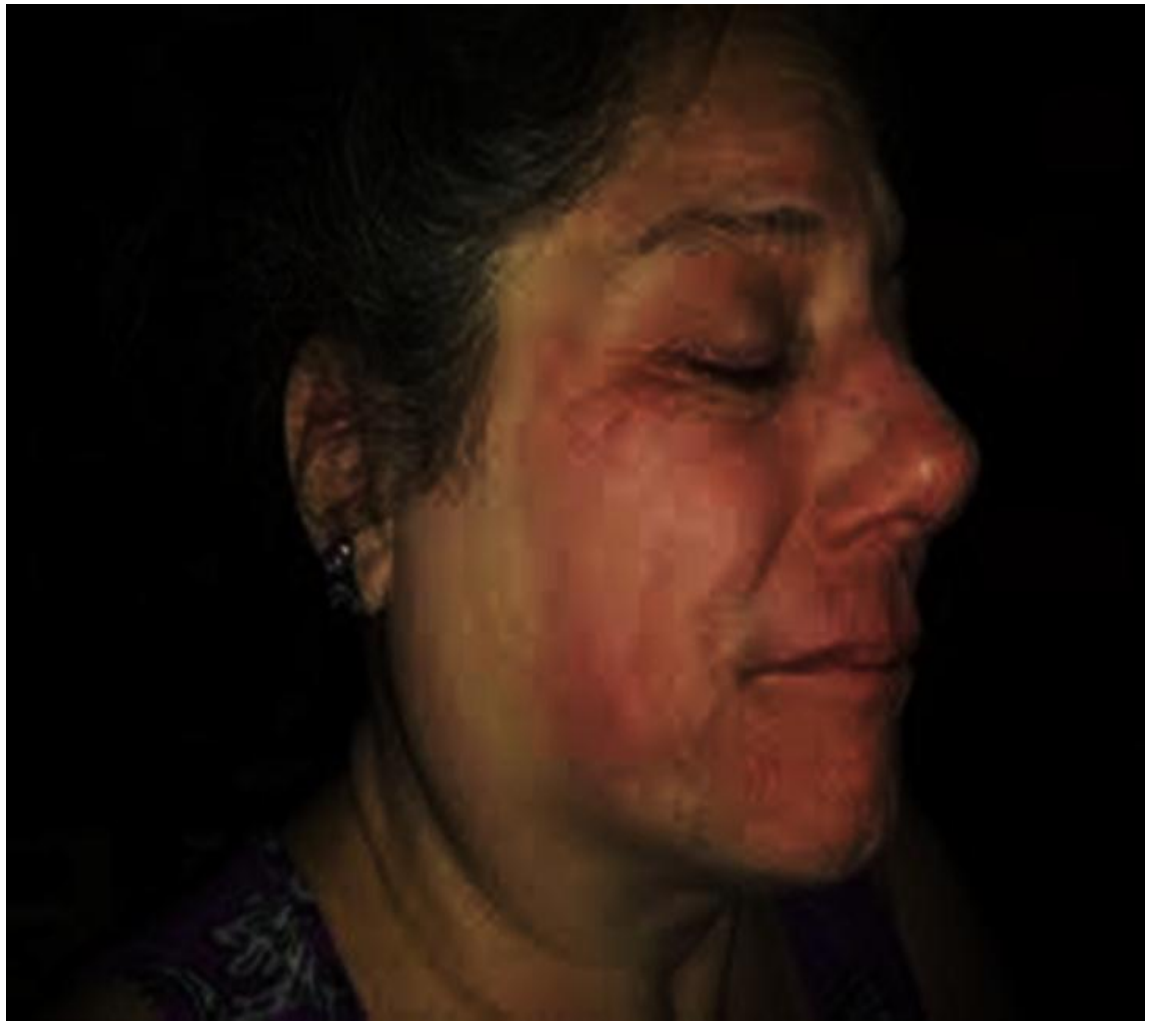
think to include lupus in DD in patients whom present with

- Malar Skin rash
- Poly arthritis
- Serositis pleural effusion or pericarditis
- Nephritis
- Thrombocytopenia
- SO DO COMPLETE DETAILED HISTORY AND SYSTEMIC REVIEW .

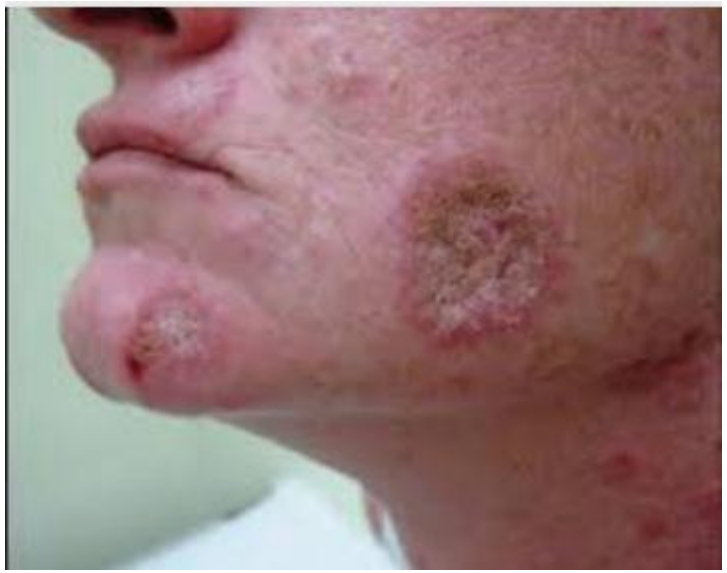
Malar rash = photosensitive







Photosenstivty =mainly sun
exposed area affected

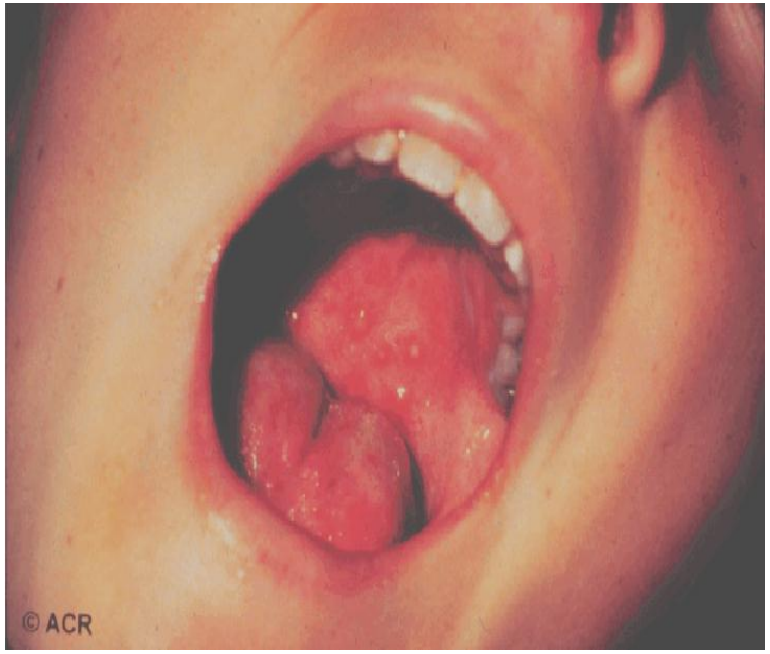


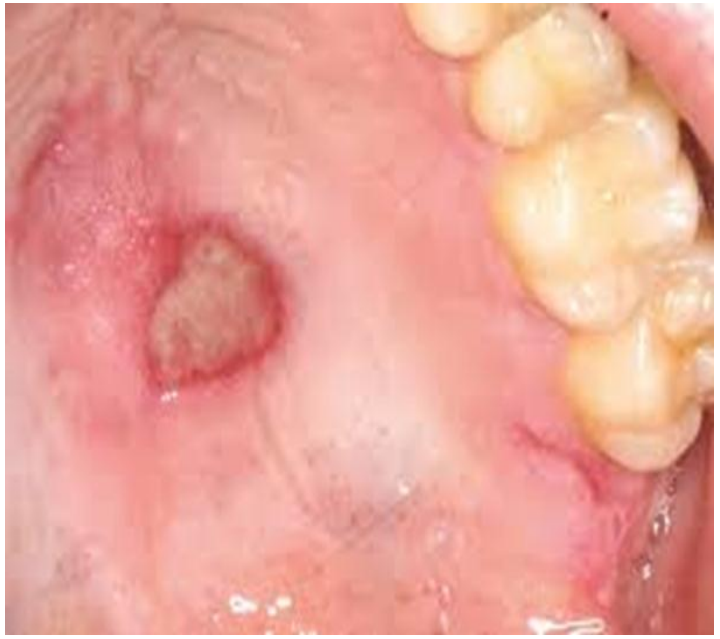
Discoid =disk like

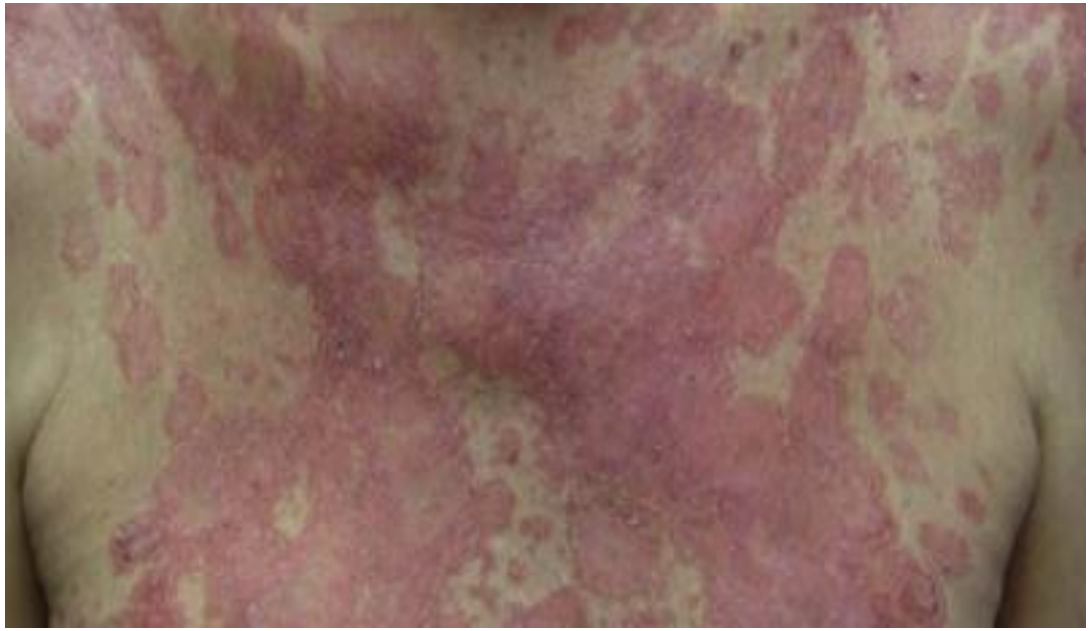
Alopecia

Alopecia =loss of hair

Mouth ulcers



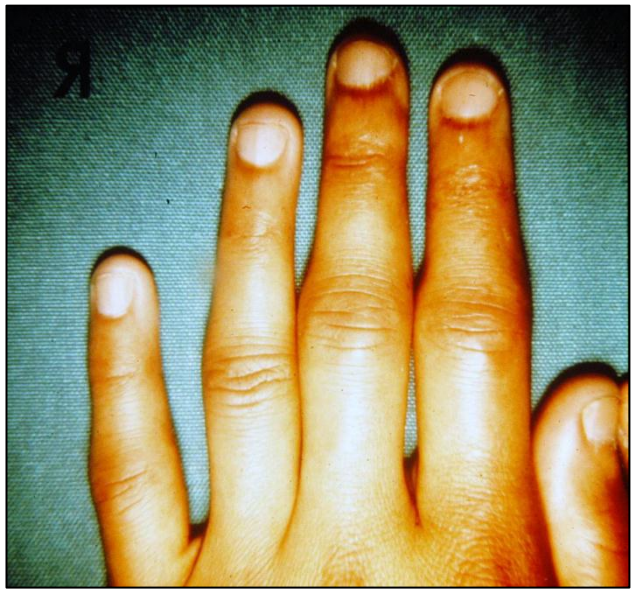


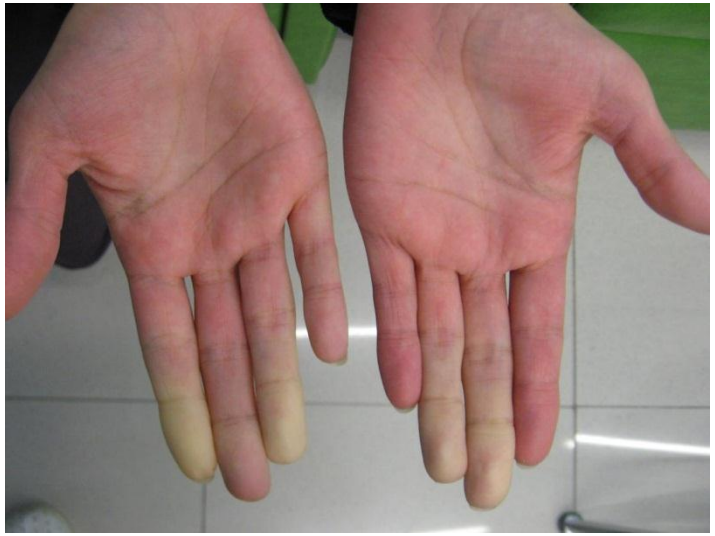


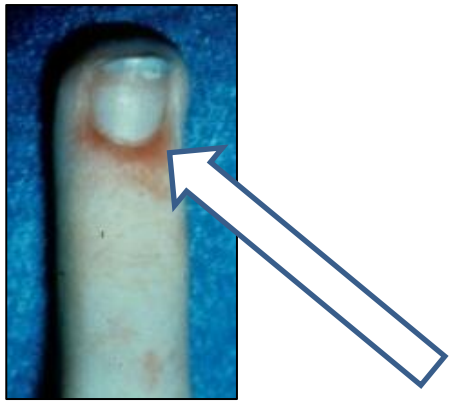
Subacute cutenous lupus
Erythematus plaques with slight scales
In sun exposed area non scarring

Hand features

- May be Arthralgia or
- Raynaud's phenomena.rash
- Symmetrical, non-erosive synovitis.
- Jacoub's arthropathy



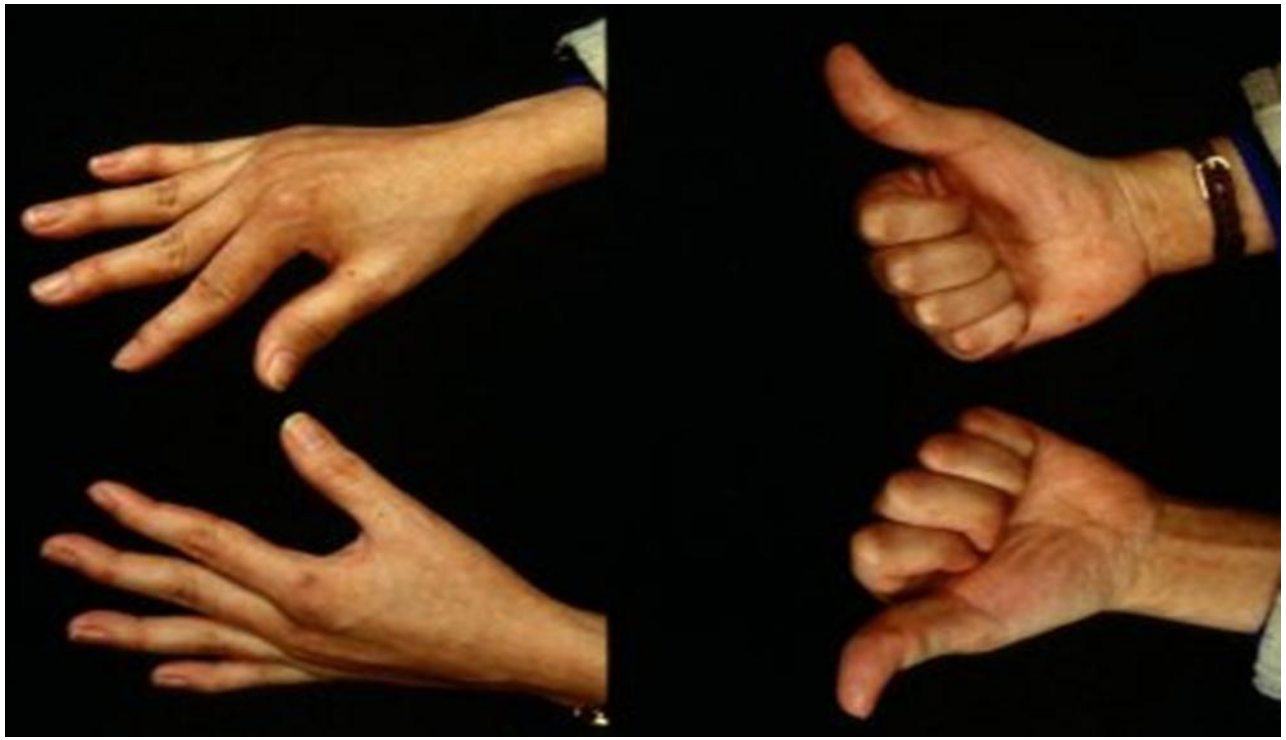




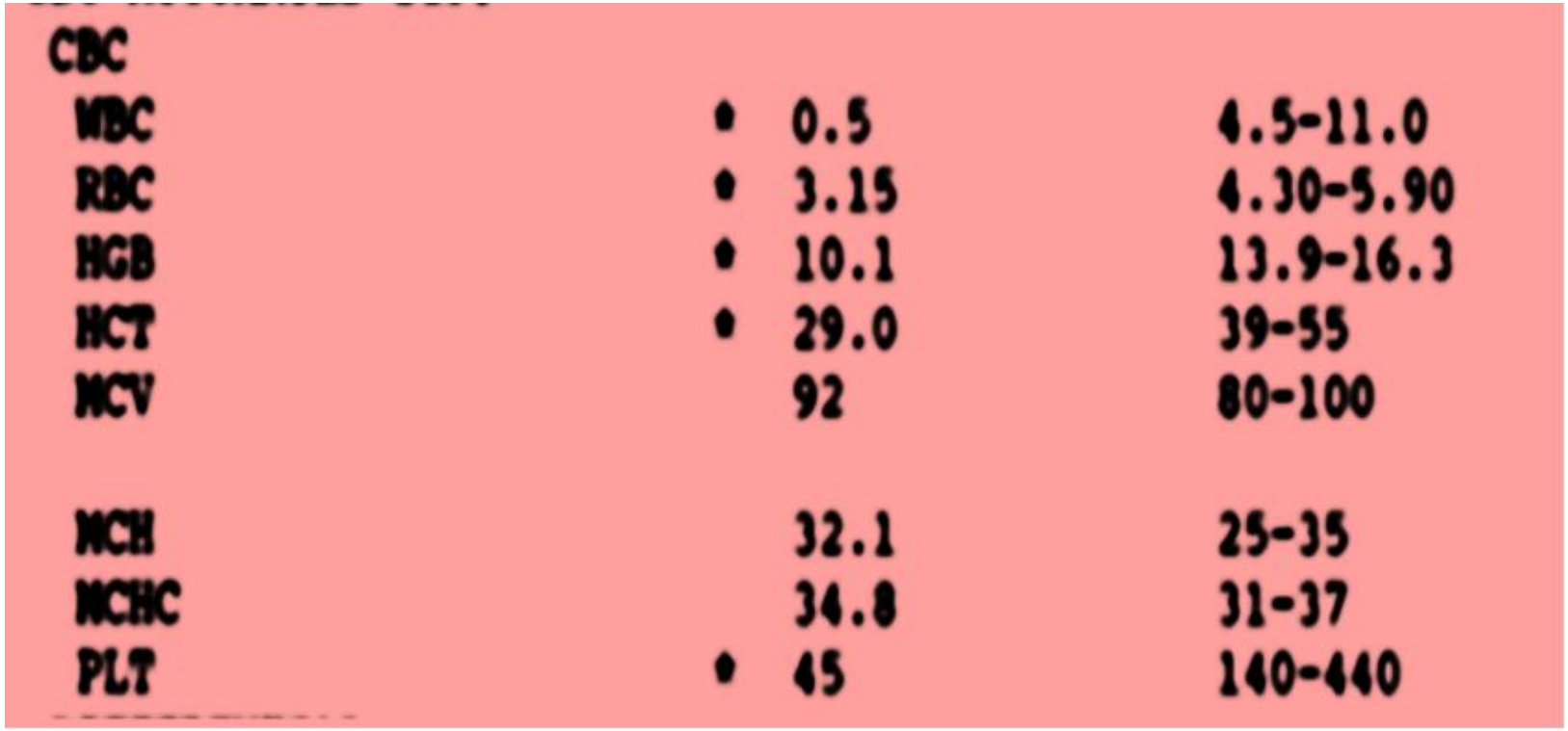
Periungual erythema

Jacoub’s arthropathy

- (reducible deformities) see below



Hematological

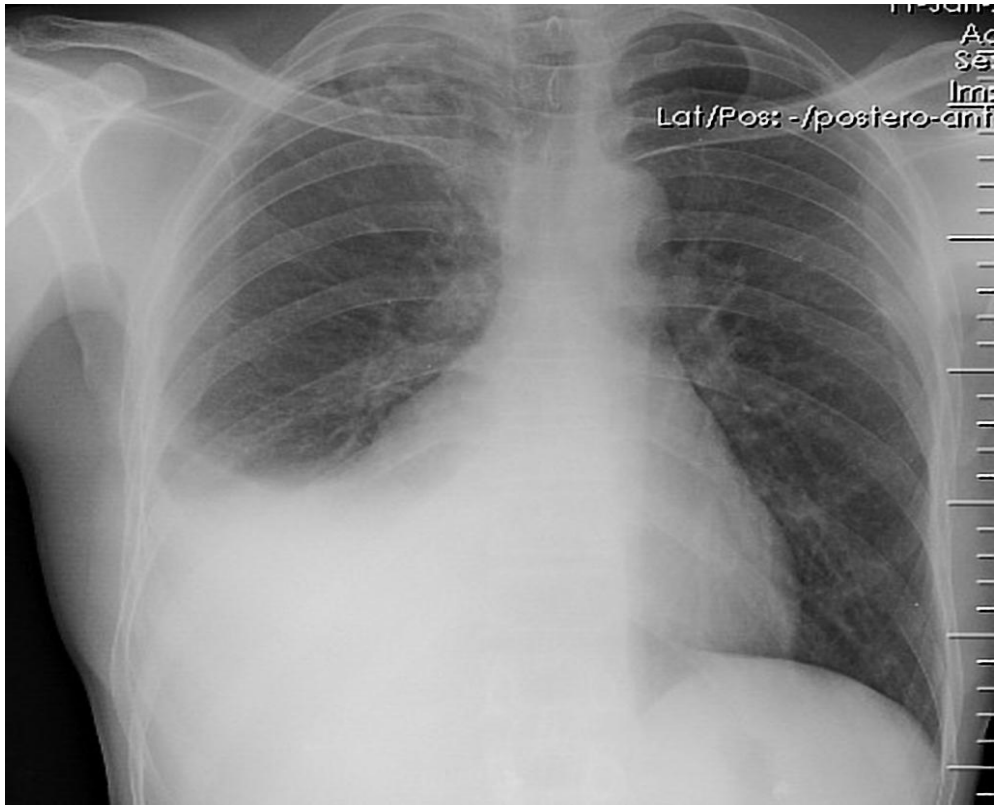


CBC			
WBC	•	0.5	4.5-11.0
RBC	•	3.15	4.30-5.90
HGB	•	10.1	13.9-16.3
HCT	•	29.0	39-55
MCV		92	80-100
MCH		32.1	25-35
MCHC		34.8	31-37
PLT	•	45	140-440

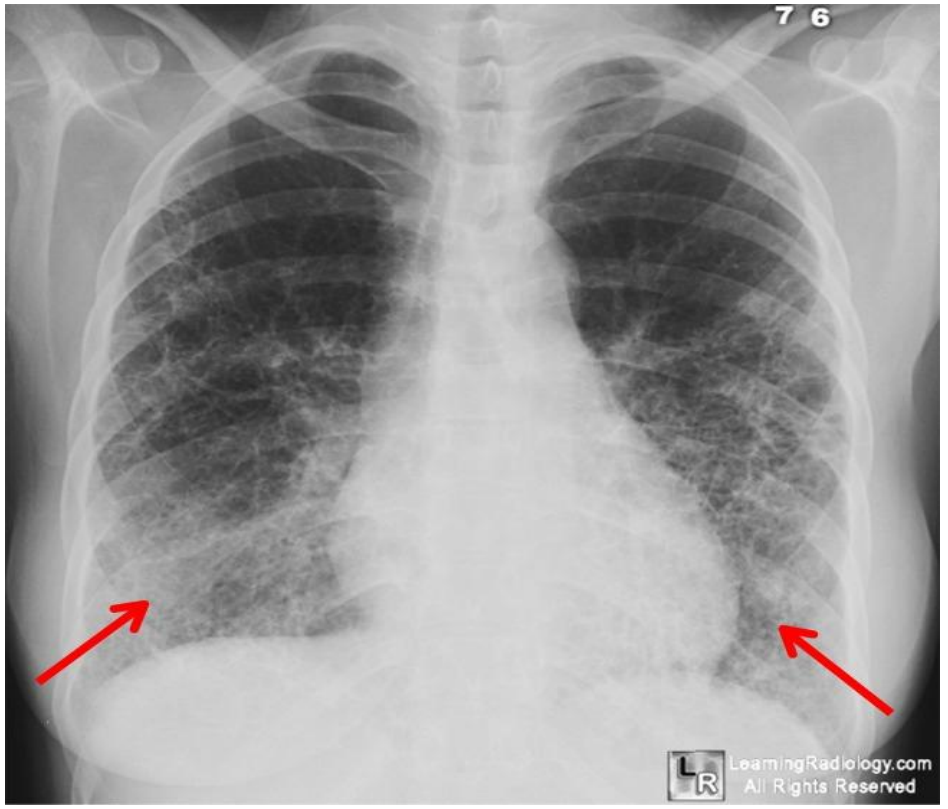
- Leukopenia is **common**.
- Many patients have a mild anemia (the anemia of chronicdisease). **Hemolytic anemia is rare**.
- Thrombocytopenia is also frequently seen.

Respiratory manifestations

Pleurisy chest pain increase with inspiration and caugh



Pleural effusion right side



Interstital pneumonitis

Cardiac Manifestations

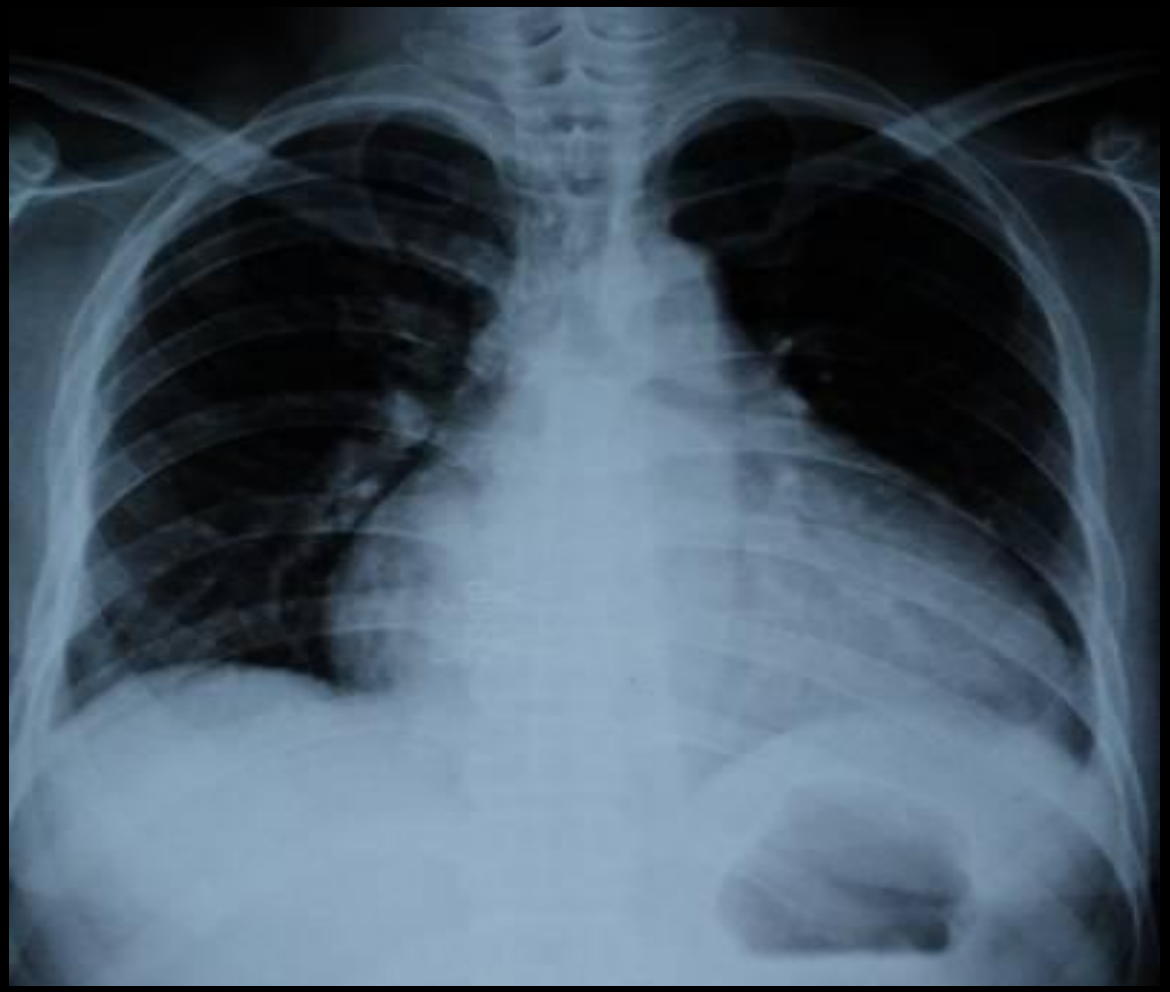
1. **Pericarditis (commonest)**
2. **Myocarditis**
3. **Libman-Sacks endocarditis**
4. **Coronary artery disease (premature)**

Pericardial Effusion Due To Lupus Pericarditis

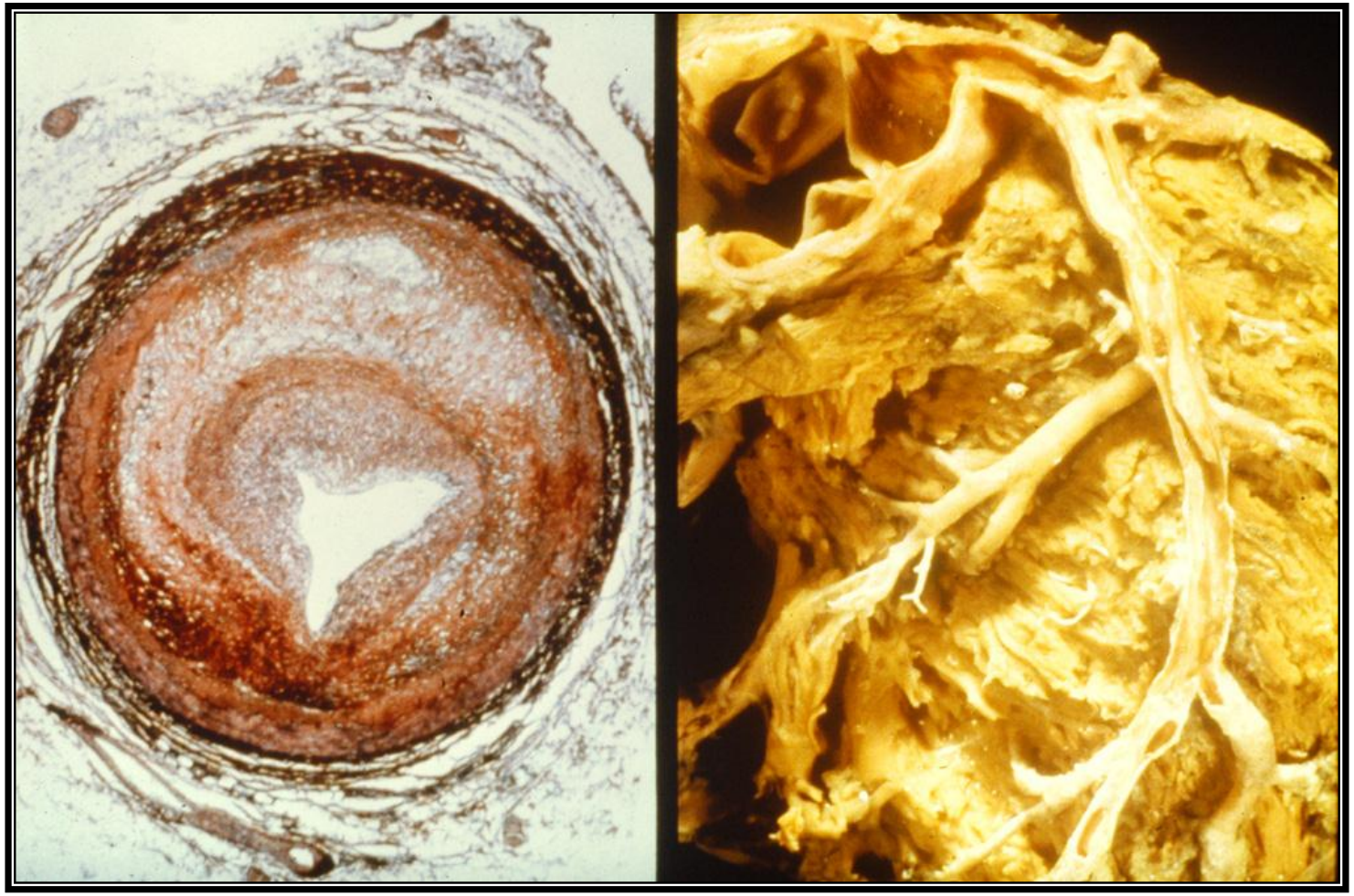
Enlarged heart shadow , clear lung fields

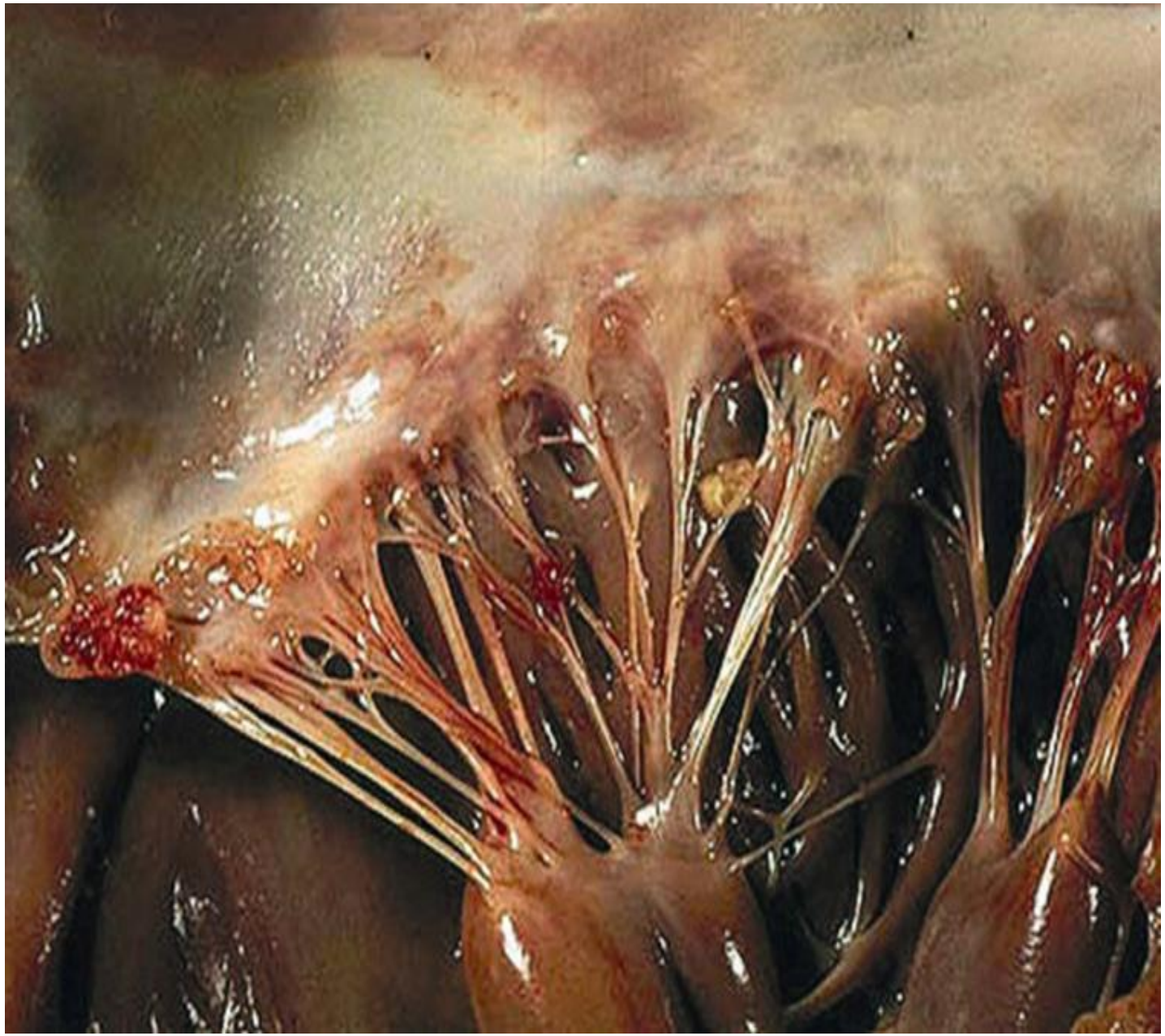
Cardiomegaly not associated with lung congestion

So cardiomegaly shadow is not due to heart failure and dilated ventricle it is due to **pericardial problem**



Premature coronary artery dis in pt with lupus





Typical Neurological Syndromes

1. Headache
2. Cerebrovascular disease
3. Seizure disorder
4. Chorea
5. Cognitive dysfunction
6. Psychosis
7. Mononeuropathy orPolyneuropathy

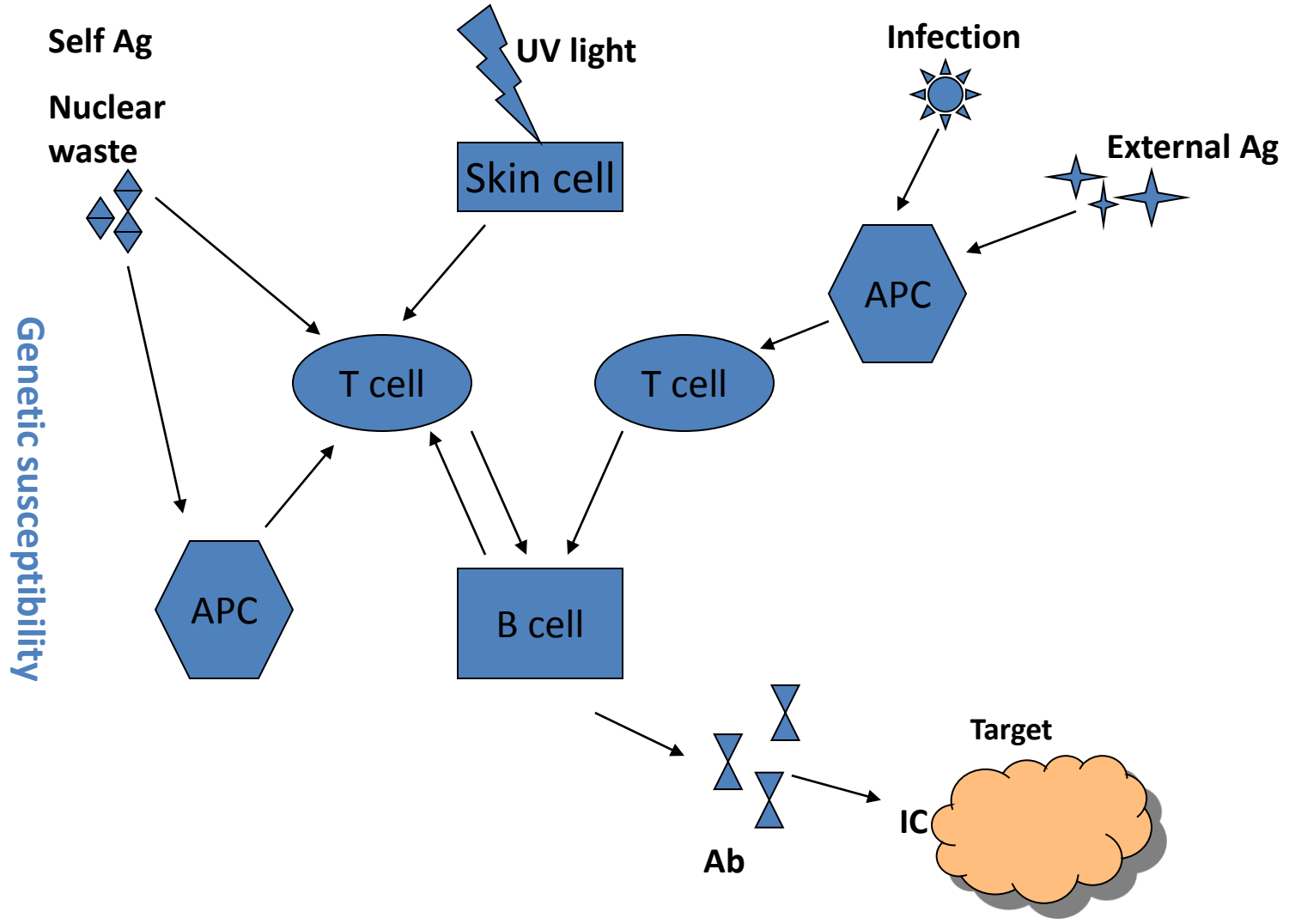
INTERNATIONAL SOCIETY OF NEPHROLOGY (ISN)

- Minimal mesangial lupus nephritis (class I)
  - nL U/A and Cr; only ID via IF and EM
- Mesangial proliferative lupus nephriits (class II)
  - Microscopic hematuria and/or proteinuria
- Focal lupus nephritis (class III)
  - Hematuria and proteinuria
  - Some with HTN, nephrotic syndrome, elevated Cr
- Diffuse lupus nephritis (class IV)
  - Segmental (<50% glom) vs. global (>50% glom)—via light microscopy
  - Hematuria and proteinuria
  - Low complements and high anti-dsDNA levels
- Membranous lupus nephritis (class V)
- Advanced sclerosing lupus nephritis (class VI)
  - >90% globally sclerosed glomeruli

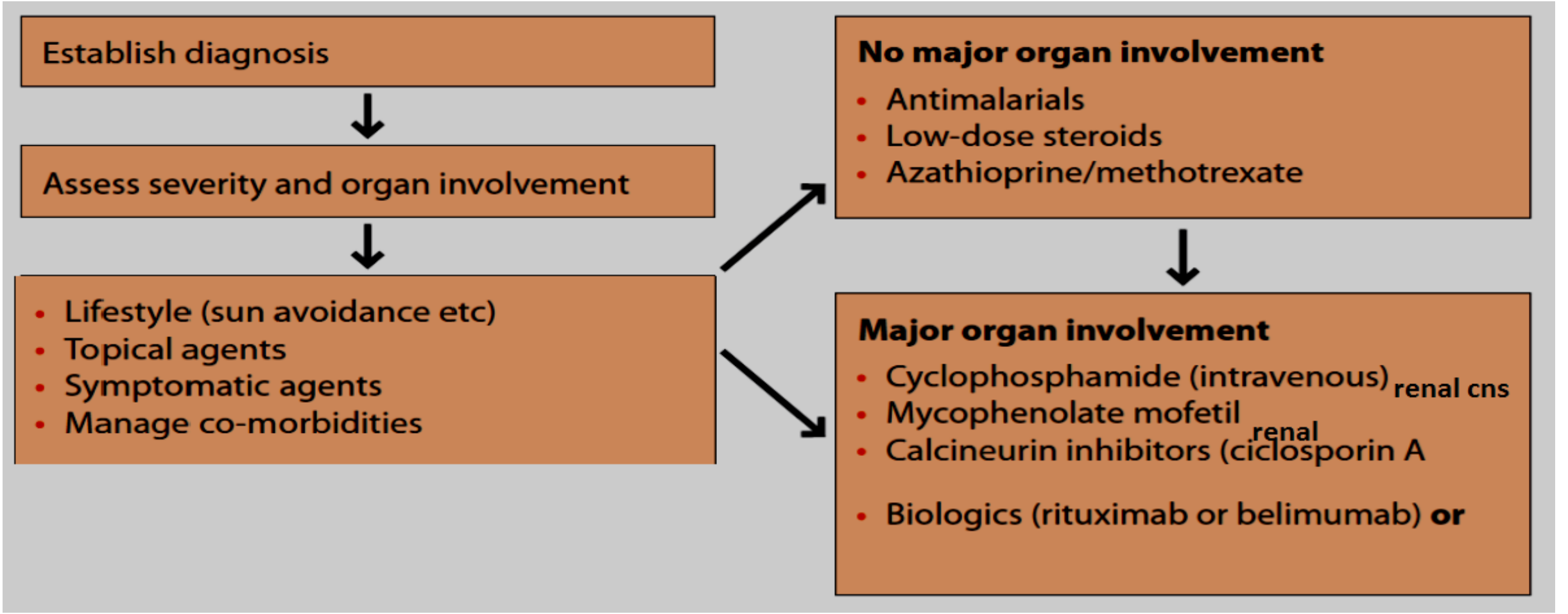
SLE – Path genetic Mechanisms

- **Immune complex-mediated damage:** glomerulonephritis
- **Direct autoantibody-induced damage:** thrombocytopenia & hemolytic anemia
- **Antiphospholipid antibody-induced thrombosis**

Overview of the pathogenesis of SLE



Overview of the management of systemic lupus erythematosus.



SLICC† Classification Criteria for Systemic Lupus Erythematosus

Requirements: ≥ 4 criteria (at least 1 clinical and 1 laboratory criteria)
OR biopsy-proven lupus nephritis with positive ANA or Anti-DNA

Clinical Criteria

1. Acute Cutaneous Lupus*
2. Chronic Cutaneous Lupus*
3. Oral or nasal ulcers
4. Non-scarring alopecia
5. Arthritis
6. Serositis
7. Renal
8. Neurologic
9. Hemolytic anemia
10. Leukopenia
11. Thrombocytopenia (<100,000/mm³)

Immunologic Criteria

1. ANA
2. Anti-DNA
3. Anti-Sm
4. Antiphospholipid Ab
5. Low complement (C3, C4, CH50)
6. Direct Coombs' test

† SLICC: Systemic Lupus International Collaborating Clinics
* See notes for criteria details

Petri M, et al. Arthritis and Rheumatism. Aug 2012

TABLE 2. Clinical and immunological criteria used in the Systemic Lupus International Collaborating Clinics (SLICC) classification system. (Adapted with permission of John Wiley & Sons, Inc from: Petri M et al. Derivation and validation of Systemic Lupus International Collaborating Clinics classification criteria for systemic lupus erythematosus. Arthritis Rheum 2012 Aug;64(8):2677-86.)

Clinical criteria	Brief definition notes
Acute cutaneous lupus	Lupus malar rash (do not count if malar discoid), bullous lupus, toxic epidermal necrolysis variant of SLE, maculopapular lupus rash, photosensitive lupus rash **or** subacute cutaneous lupus (nonindurated psoriaform and/or annular polycyclic lesions that resolve without scarring, although occasionally with postinflammatory dyspigmentation or telangiectasias)
Chronic cutaneous lupus	Classical discoid rash [localised – above the neck; generalised – above and below the neck], hypertrophic (verrucous) lupus, lupus panniculitis (profundus), mucosal lupus, lupus erythematosus tumidus, chilblains lupus, discoid lupus/lichen planus overlap
Oral ulcers	Palate [buccal, tongue] **or** nasal ulcers (in the absence of other causes)
Nonscarring alopecia	
Synovitis	≥2 joints, characterised by swelling or effusion **or** tenderness in ≥2 joints and ≥30 minutes of morning stiffness
Serositis	Typical pleurisy for >1 day, or pleural effusions, or pleural rub **or** typical pericardial pain for >1 day, or pericardial effusion, or pericardial rub, or pericarditis by ECG

Renal	Urine protein:creatinine ratio (or 24-hr urine protein) representing 500 mg protein/24 hr **or** red blood cell casts
Neurological	Seizures, psychosis, mononeuritis multiplex, myelitis, peripheral or cranial neuropathy, acute confusional state (in the absence of other causes)
Haemolytic anaemia	
Leucopenia	Leucopenia (<4000/mm^3 at least once) **or** lymphopenia (<1000/mm^3 at least once)
Thrombocytopenia	Platelet (<100,000/mm^3) at least once
Immunological criteria	
ANA	Above reference range
Anti-dsDNA	≥x2 above if ELISA
Anti-Smith	
Antiphospholipid	Lupus anticoagulant, false-positive RPR, medium- or high-titre anticardiolipin (IgA, IgG or IgM), anti-β_2-glycoprotein I (IgA, IgG or IgM)
Low complement	Low C3, C4 or CH50
Positive direct Coombs' test	In the absence of haemolytic anaemia

Lab tests

- Full history and examination to decide about recent symptops and signs of inflammation in which organ (general and systemic).
- Test are used to assess and monitor activity:
  - ESR,CRP,
  - C3,C4,
  - And Anti DNA titer.
  - Tests are requested to support dx as per criteria eg other auto antibodies.
  - test for relevant organ evaluation as per H/E eg, CBC peripheral film ,RFT,etc).

Auto antibodies in SLE

- dsDNA
  - 60% patients
  - Increased risk nephritis
- Cardiolipin
  - 10-30%
  - thrombosis, fetal loss

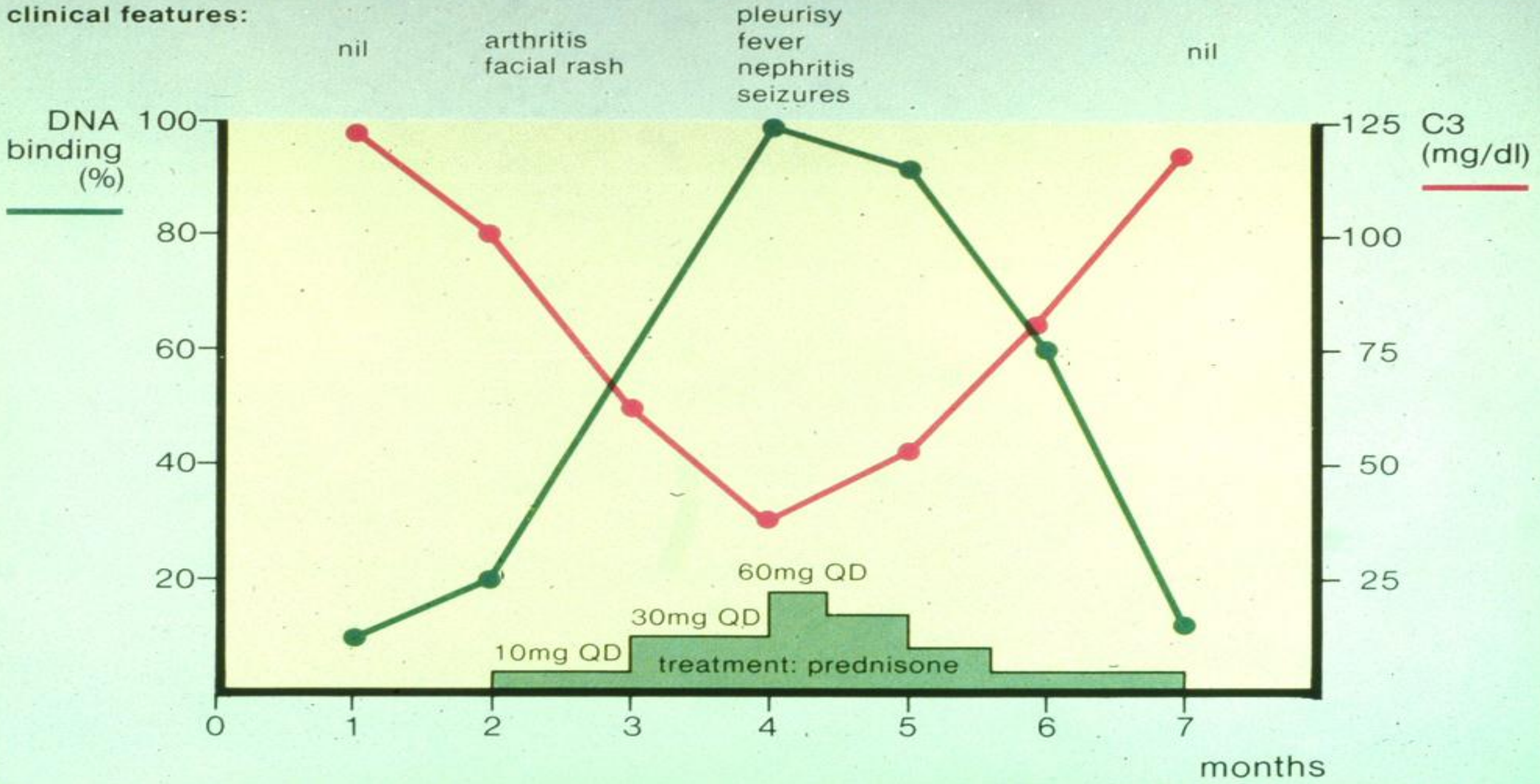
- Histones
  - drug induced lupus

- Ro and La
  - 20-60% and 15-40%
  - Cutaneous & neonatal lupus and congenital heart block
- Sm (anti smith Ab)
  - 10-30% but specific for lupus

Anti- DNA

- Fairly specific for SLE but present only in 80% of cases ..
- Higher titers with active disease especially nephritis.
- Can be useful for:
  - Diagnosis (one of the criteria)
  - Prognosis (if high titer = severe dis)
  - Therapeutic monitoring after rx
  - (If increase = active, If decrease = inactive)

DNA binding and complement C3 in SLE



Management

- Arthritis fever: NSAID
- Photosensitivity: sunscreen
- Rash, arthritis: anti-malarial
  hydroxychloroquine

- Significant thrombocytopenia
  H anemia, serositis: steroids

- Renal disease, CNS: steroids and
  cytotoxic drugs
  azathioprine or cyclophosphamide
  or mycophenolate mofetil

Adjunct:

Sun protection
Vaccinations
Exercise
No smoking
Body weight
Blood pressure
Lipids
Glucose

Antiplatelets
anti-coagulants
(in aPL- positive
patients)

- A 37 year old Libyan women presented with six weeks history of painful swelling of the small joints of the hands on examination she had temperature of 37.8°C eythematous rash on her cheeks and synovitis of the 2nd and 3rd metacarpo-phyalangeal joints of both Hands .

Drug	Toxicities requiring monitoring	Baseline evaluation	Monitoring	
			System review	Laboratory
Salicylates, nonsteroidal antiinflammatory drugs	Gastrointestinal bleeding, hepatic toxicity, renal toxicity, hypertension	CBC, creatinine, urinalysis, AST, ALT	Dark/black stool, dyspepsia, nausea/vomiting, abdominal pain, shortness of breath, edema	CBC yearly, creatinine yearly
Glucocorticoids	Hypertension, hyperglycemia, hyperlipidemia, hypokalemia, osteoporosis, avascular necrosis, cataract, weight gain, infections, fluid retention	BP, bone densitometry, glucose, potassium, cholesterol, triglycerides (HDL, LDL)	Polyuria, polydipsia, edema, shortness of breath, BP at each visit, visual changes, bone pain	Urinary dipstick for glucose every 3–6 months, total cholesterol yearly, bone densitometry yearly to assess osteoporosis
Hydroxychloroquine	Macular damage	None unless patient is over 40 years of age or has previous eye disease	Visual changes	Funduscopic and visual fields every 6–12 months
Azathioprine	Myelosuppression, hepatotoxicity, lymphoproliferative disorders	CBC, platelet count, creatinine, AST or ALT	Symptoms of myelosuppression	CBC and platelet count every 1–2 weeks with changes in dose (every 1–3 months thereafter), AST yearly, Pap test at regular intervals
Cyclophosphamide	Myelosuppression, myeloproliferative disorders, malignancy, immunosuppression, hemorrhagic cystitis, secondary infertility	CBC and differential and platelet count, urinalysis	Symptoms of myelosuppression, hematuria, infertility	CBC and urinalysis monthly, urine cytology and Pap test yearly for life
Methotrexate	Myelosuppression, hepatic fibrosis, cirrhosis, pulmonary infiltrates, fibrosis	CBC, chest radiograph within past year, hepatitis B, C serology in high-risk patients, AST, albumin, bilirubin, creatinine	Symptoms of myelosuppression, shortness of breath, nausea/vomiting, oral ulcer	CBC and platelet count every 4–8 weeks, AST or ALT every 4–8 weeks, albumin every 4–8 weeks, serum creatinine, urinalysis

* CBC = complete blood cell count; AST = aspartate transaminase; ALT = alanine transaminase; BP = blood pressure; HDL = high-density lipoprotein; LDL = low-density lipoprotein.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Drug Induced Lupus

- **Medicines that may play a role in inducing lupus include:**
- Antibodies to tumor necrosis factor-a.
- Phenytoin.
- Chlorpromazine.
- Hydralazine.
- Isoniazid.
- Characterized by anti histone antibodies and no anti dsDNA Abs.
- No renal or CNS manifestations.
- Respond to discontinuation of the drugs and anti-inflammatory rx.

- A 45 year presents a two day history of fever joint pains. She has a past history of hypertension for which she is receiving hydralazine. On examination she a temperature of 38 Celsius, a facial rash slight swelling tenderness of wrist and ankle joints.

Lupus and Pregnancy

- **Important factor:** whether disease should be controlled before planning pregnancy.
- Whether there are an APA.
- Is any given pregnancy, the chronical condition can worsen, or flare without warning. Monitor closely

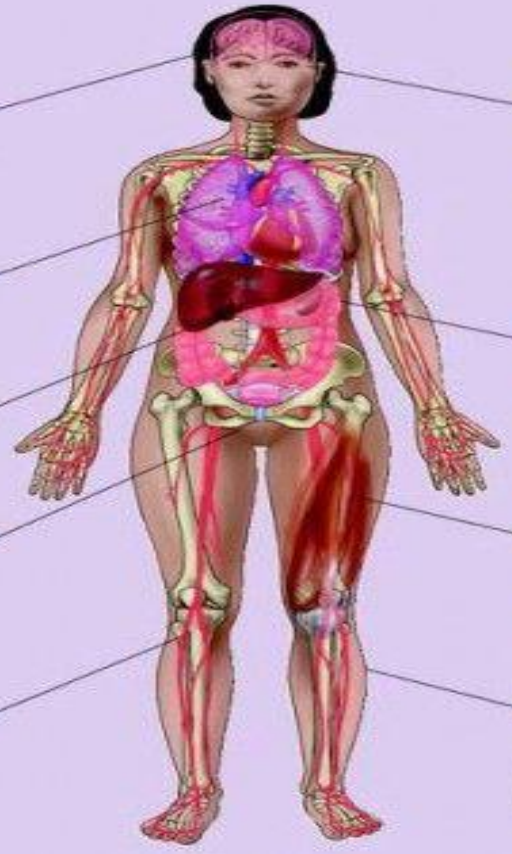
Neonatal lupus

- This unusual syndrome is characterized by skin lesion or lupus dermatitis, hematological & systemic derangements and occasionally congenital heart block.
- The cardiac lesion is permanent, and pacemaker is generally necessary.

Antiphospholipid Antibody Syndrome

- Two types Primary (idiopathic) and Secondary to CTD like lupus ..
- **Main features** three
  1. **Recurrent arterial and venous thrombosis.**
  2. **Recurrent fetal loss.**
  3. **Thrombocytopenia.**
- Main auto antibodies IgG and IgM anticardiolipin Ab and lupus anticoagulant.
- Blood test show Prolonged APTT, PT, clotting time.
- Main rx: Life long anticoagulants.
- **ASA AND HEPARIN DURING PREGNANCY** to prevent fetal loss.

The Impact of Lupus on the Body



Central and Peripheral Nervous System

Seizures, Psychosis, Headaches, Cognitive Dysfunction, Neuropathies, Depression, Low Grade Fever

Heart, Lungs

Pericarditis, Myocarditis, Endocarditis, Pleuritis, Pneumonitis

Kidneys

Edema, Hypertension, Proteinuria, Cell Casts, Renal Failure

Reproductive System

Pregnancy Complications, Miscarriages, Menstrual Cycle Irregularities

Blood

Anemia, Thrombocytopenia, Leukopenia, Thrombosis, Circulating Autoantibodies and Immune Complexes

Eyes and Mucous Membranes

Ulcers in the Eyes, Nose, Mouth or Vagina, Sjögren's Syndrome

Gastrointestinal

Nausea, Vomiting, Diarrhea, Weight Changes

Musculoskeletal

Extreme Fatigue, Arthralgia, Myalgia, Arthritis, Myositis

Skin

Butterfly Rash, Cutaneous Lesions, Photosensitivity, Alopecia, Vasculitis, Raynaud's Phenomenon

Lupus can affect any part of the body; however, most people experience symptoms in only a few organs.

- Lupus is an incurable chronic autoimmune disease that causes inflammation in various parts of the body. The disease can range from mild to life-threatening.
- 90% of people with lupus are women, 80% of them developed lupus between ages 15 and 45.
- The cause of lupus is unknown. Scientists believe that individuals are genetically predisposed to lupus, and that environmental factors "trigger" the symptoms.
- With proper treatment, most people with lupus can live a normal life span.

LUPUS Foundation of America, Inc.

Lupus Foundation of America, Inc.
www.lupus.org

Thank you