

Systemic Lupus Erythematosus (SLE)

T Nesbitt, DNP, RN, CNE

tnesbitt@covhs.org

806-438-8903

AY 20-21



Systemic Lupus Erythematosus

- **Multisystem inflammatory autoimmune disease**
- **Complex multifactorial disorder**
 - Genetic
 - Hormonal
 - Environmental
 - Immunologic
- What is Lupas? <https://youtu.be/0jungD4BLH4>
- <https://youtu.be/y3zCEPzJEN8>



Systemic Lupus Erythematosus

- **Affects**
 - Skin
 - Joints
 - Serous membranes
 - Pleura
 - Pericardium
 - Renal system
 - Hematologic system
 - Neurologic system



This Photo by Unknown Author is licensed under CC BY-NC-ND

Systemic Lupus Erythematosus

- **Marked by an unpredictable course with alternating periods of remission and worsening disease**
 - Most cases in women of childbearing years
 - More common in African Americans, Asian Americans, Hispanics, and Native Americans than in whites



Etiology and Pathophysiology

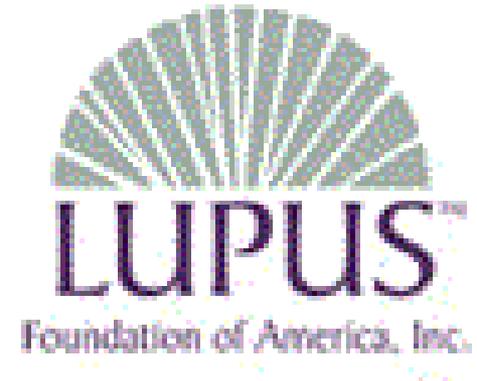
- **Etiology is unknown**
- **Most probable causes**
 - Genetic influence
 - Hormones
 - Environmental factors
 - Certain medications



This Photo by Unknown Author is licensed under CC BY-NC-ND

Etiology and Pathophysiology

- **Overaggressive autoimmune reactions directed against constituents of:**
 - Cell nucleus
 - Single- and double-stranded DNA
 - Activation of B and T cells



This Photo by Unknown Author is licensed under CC BY-NC-ND

Clinical Manifestations

- **Severity of SLE is extremely variable**
 - Ranges from a relatively mild disorder to rapidly progressive disease affecting many body systems
- **Most commonly affects:**
 - skin
 - muscles
 - lining of lungs
 - heart
 - nervous tissue
 - kidneys

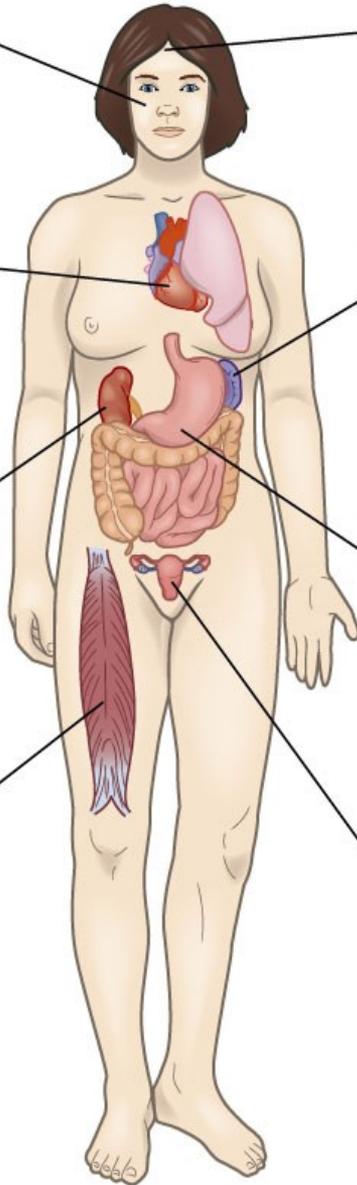


- Integumentary**
- Alopecia
 - Butterfly rash
 - Discoid erythema
 - Palmar erythema
 - Mucosal ulcers

- Cardiopulmonary**
- Endocarditis
 - Myocarditis
 - Pericarditis
 - Pleural effusion
 - Pneumonitis
 - Raynaud's phenomenon

- Urinary**
- Glomerulonephritis
 - Hematuria
 - Proteinuria

- Musculoskeletal**
- Arthritis
 - Myositis
 - Synovitis



- Neurologic**
- Stroke
 - Seizures
 - Peripheral neuropathy
 - Psychosis
 - Cognitive impairment

- Hematologic**
- Anemia
 - Leukopenia
 - Lymphadenopathy
 - Splenomegaly
 - Thrombocytopenia

- Gastrointestinal**
- Abdominal pain
 - Diarrhea
 - Dysphagia
 - Nausea and vomiting

- Reproductive**
- Menstrual abnormalities



Clinical Manifestations

❖ Classifications

- Systemic lupus
- Drug-induced lupus
- Discoid lupus - Limited to skin

❖ SLE is extremely variable in severity

- Ranges from mild disorder to rapidly progressive disease
- Number, severity of exacerbations tend to decrease with time



Systemic Lupus Erythematosus (SLE)



Clinical Manifestations

- **Dermatologic Problems**

- Vascular skin lesions
 - Most commonly in sun-exposed areas
- Butterfly rash
 - Occurs in 55% to 85% of cases
- Discoid lesions
- Subacute cutaneous lupus
- Oral/nasopharyngeal ulcers
- Alopecia

Butterfly Rash of SLE



From Firestein GS, Budd RC, Gabriel SE, McInnes IB: *Kelley's textbook of rheumatology*, ed 9, Philadelphia, 2012, Saunders.

<https://youtu.be/KfoghEzsYso>

Copyright © 2017, Elsevier Inc. All Rights Reserved.

Clinical Manifestations

- **Musculoskeletal Problems**
 - Polyarthralgia with morning stiffness
 - Arthritis
 - Swan neck fingers
 - Ulnar deviation
 - Subluxation with hyperlaxity of joints
 - Increased risk of bone loss and fracture



Clinical Manifestations

- **Cardiopulmonary Problems**
 - Tachypnea
 - Cough
 - Pleurisy
 - Dysrhythmias
 - Fibrosis of SA and AV nodes
 - Pericarditis
 - Antiphospholipid syndrome



Clinical Manifestations

- **Renal Problems**

- Mild proteinuria to rapidly progressive glomerulonephritis
- Scarring, permanent damage can lead to end-stage renal disease
- Effective treatments are available
 - Corticosteroids, cytotoxic agents, immunosuppressive agents



Clinical Manifestations

- **Nervous System Problems**
 - Generalized/focal seizures
 - Peripheral neuropathy
 - Cognitive dysfunction
 - Disordered thinking
 - Disorientation
 - Memory deficits
 - Psychiatric disorders



Clinical Manifestations

- **Hematologic Problems**
 - Formation of antibodies against blood cells
 - Anemia
 - Leukopenia
 - Thrombocytopenia
 - Coagulation disorders



Clinical Manifestations

- **Infection**

- Increased susceptibility to infections

- Defects in ability to phagocytize invading bacteria

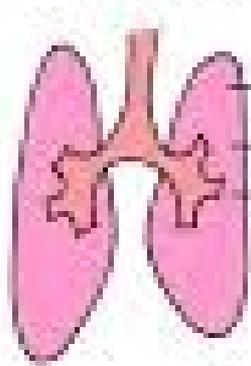
- Deficiency production of antibodies

- Immunosuppressive effect of many antiinflammatory drugs

- Infection is a major cause of death



SYSTEMIC LUPUS ERYTHEMATOSUS (SLE)



Tachypnea
Cough
Pleural Inflammation/
Effusion

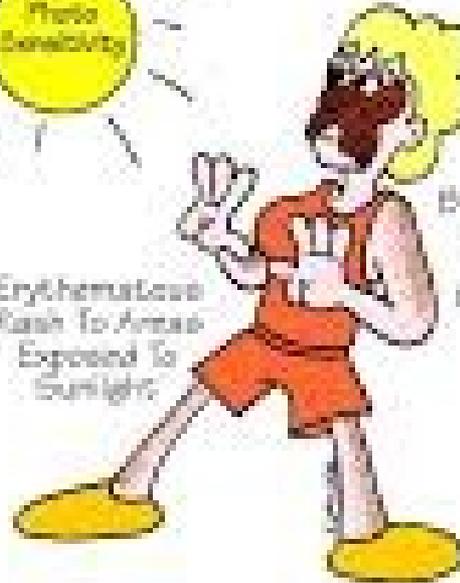
- Weight Loss
- Fatigue
- Fever/Infection
- Arthritis
- Emotional Lability
- Hematologic Disorders
- Neurologic Disorders



Raynaud's Phenomenon
Pericarditis
Vascular Inflammation



Photo Sensitivity
Erythematous Rash To Areas Exposed To Sunlight



Butterfly Rash Over Cheeks

By mouth

Lupus Nephritis



Proteinuria

Hematuria

Diagnostic Studies

- No specific test, but . . .
- Anti-DNA antibodies found in half of all patients
- Anti-Smith antibodies are found in 30-40% of patients almost always considered diagnostic
- Almost 30% of patients will have antiphospholipid antibodies
- ANA (antinuclear antibodies) present in 97% of persons with the disease
- SLE is diagnosed primarily on criteria relating to patient history, physical examination, and laboratory findings



SLE Diagnostic Criteria

- S** {
 - **Serositis**
 - (pleuritis, pericarditis)
- O** {
 - Oral ulcers
- A** {
 - Arthritis
- P** {
 - Photosensitivity

- B** {
 - Blood disorder
- R** {
 - Renal disorder
- A** {
 - ANA +
- I** {
 - Immunologic disorder
- N** {
 - Neurologic disorder

M - Malar
Rash

D - Discoid
Rash



“SOAP BRAIN MD”

Interprofessional Care

- **Major challenge to manage active disease yet prevent treatment complications that cause tissue damage**
- **Survival influenced by:**
 - Age, race, gender, socioeconomic status, comorbid conditions, and severity of disease
 - Early diagnosis and effective treatment



Interprofessional Care

- **Drug Therapy**
 - **NSAIDs**
 - Mild arthralgia or arthritis
 - **Antimalarial drugs**
 - **Steroid-sparing drugs**
 - **Corticosteroids**
 - Severe cutaneous SLE
 - **Immunosuppressive drugs**



Interprofessional Care

- **Clinical trials**

- Agents that interfere with immune response
- Hormones to combat corticosteroid-induced osteoporosis
- Lenalidomide



Nursing Management: Assessment

- **Assess patient's physical, psychologic, and sociocultural problems with long-term management of SLE**
- **Evaluate effect of pain and fatigue on ability to perform ADLs**



Nursing Management: Nursing Diagnoses

- **Fatigue**
- **Impaired skin integrity**
- **Impaired comfort**



Nursing Management: Planning

- **Overall Goals**

- Pain management
- Adhere to therapeutic regimen
- Awareness & avoid activities that worsen SLE
- Role function and self-image



Nursing Management: Nursing Implementation

- **Health Promotion**

- Prevention of SLE is not currently possible
- Education of health professionals and the community to create a clear understanding of the disease and need for early diagnosis and treatment



Nursing Management: Nursing Implementation

- **Acute Care**

- Unpredictable nature of SLE presents many challenges for the patient and caregiver
- Physical, psychologic, and sociocultural problems linked to long-term management



Nursing Management: Nursing Implementation

- **Acute Care**

- During a disease flare, patient may quickly become very ill
- Record
 - Severity of symptoms
 - Response to therapy



Nursing Management: Nursing Implementation

- **Acute Care**

- Observe for:

- Fever pattern
 - Joint inflammation
 - Limitation of motion
 - Location and degree of discomfort
 - Fatigue



Nursing Management: Nursing Implementation

- **Acute Care**

- Monitor weight and I&O
- Collect 24-hour urine sample
- Assess neurologic status
 - Visual problems, headaches, seizures, personality changes, memory loss
- Explain nature of disease
- Provide emotional support



Nursing Management: Nursing Implementation

- **Ambulatory Care**

- Importance of patient involvement
- Adherence to treatment is no guarantee against flares
- Reduce exposure to precipitating factors



Nursing Management: Nursing Implementation

- **Lupus and pregnancy**
 - Infertility can result
 - Renal involvement
 - High-dose corticosteroids
 - Immunosuppressive drugs
 - Women with serious SLE should be counseled against pregnancy



Nursing Management: Nursing Implementation

- **Psychosocial issues**
 - Supportive therapies to help patient cope with the disease
 - Inform patient and caregiver that SLE has good prognosis for most people
 - Stress importance of planning recreational and occupational activities
 - Assist patient in developing goals



Nursing Management: Evaluation

- **Expected Outcomes**

- Use energy conservation techniques
- Adapt lifestyle to current energy
- Maintain skin integrity with the use of topical treatments
- Prevent disease flare with the use of sunscreens and limited sun exposure

Practice Question:

A patient is undergoing diagnostic testing for symptoms of polyarthralgia, fatigue, and hair loss. Laboratory results include the presence of anti-DNA, antinuclear antibodies, and anti-Smith in the blood. The nurse recognizes that these findings are *most* likely to be related to which diagnosis?

- A. Systemic sclerosis
- B. Rheumatoid arthritis
- C. Chronic fatigue syndrome
- D. Systemic lupus erythematosus

Practice Question:

A patient is undergoing diagnostic testing for symptoms of polyarthralgia, fatigue, and hair loss. Laboratory results include the presence of anti-DNA, antinuclear antibodies, and anti-Smith in the blood. The nurse recognizes that these findings are *most* likely to be related to which diagnosis?

- A. Systemic sclerosis
- B. Rheumatoid arthritis
- C. Chronic fatigue syndrome
- D. **Systemic lupus erythematosus**

Rationale: No specific test is diagnostic for systemic lupus erythematosus (SLE), but a variety of abnormalities may be present in the blood. SLE is characterized by the presence of antinuclear antibodies (ANAs), and its identification establishes the existence of an autoimmune disease. Other antibodies include anti-DNA, antineuronal, anticoagulant, anti-WBC, anti-red blood cell (RBC), antiplatelet, antiphospholipid, and anti-basement membrane. Tests that are most specific for SLE include the anti-double-stranded DNA and the anti-Smith (Sm). High levels of anti-DNA are rarely found in any condition other than SLE, and anti-Sm seems to be found almost exclusively in SLE. The lupus erythematosus (LE) cell prep test is a nonspecific test for SLE and is positive in other rheumatic diseases.

- **Lewis Ch 64:**

- Table: 64.15, 64.16, 64.17, 64.18,
- Figure 64.9

- Patient Education

- Medications: many meds used for RA also used for SLE

