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# A case study on SLE (Systemic lupus erythematosus)

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**Abstract**
Systemic lupus Erythematosus is a chronic autoimmune inflammatory disease with a wide variety of clinical presentations as a result of its effect on several organ systems. The etiopathogenesis of SLE is complex, but it is believed to be due to a complex interaction between genetic, hormonal and environmental factors. The disease exhibits its symptoms due to the formation of auto antibodies, immune complex deposition, and complement activation. The incidence of SLE is one to 10 per 100,00 person-years with a prevalence of 20-200 per 100,000 person-years. The disease mainly affects women of child-bearing age. It has been reported that the incidence of SLE is higher in Asia, African, and Hispanic population. In this article, reported a case of 55 years old female patient presented with so many associated complications. Systemic Lupus Erythematosus (SLE) is a chronic, unpredictable and relapsing disease, predominantly affecting women. For severe cases of SLE, the usage of high dose toxic medications leads to a high risk of development of complications. The following case demonstrates the difficulty of managing SLE and the complications that follow.

**Keywords:** SLE, systemic lupus erythematosus, autoimmune, complications

## Introduction
Systemic Lupus Erythematosus is also called as disseminated lupus Erythematosus, LE syndrome Libman-Sacks disease, lupus and SLE. It is and inflammatory, autoimmune disorder that effects nearly every organ in the body. The overall incidence of SLE is estimated to be 1.8 to 7.6 per 100,000 persons (Centres for disease control and prevention [CDC], 2015a). It occurs 6 to 10 times more frequently in women than in men. In addition to SLE, many other forms of adult lupus exist, including discoid lupus Erythematosus (which primarily affects the skin on the face), sub acute cutaneous lupus Erythematosus (sun exposed areas affected with sores), and drug- induced lupus (rarely includes brain or kidney effects and is usually temporary).

## Causes
Normal variations (polymorphisms) in many genes can affect the risk of developing SLE, and in most cases multiple genetic factors are thought to be involved. In rare cases, SLE is caused by mutations in single genes. Most of the genes associated with SLE are involved in immune system function and variations in these genes likely affect proper targeting and control of the immune response. Sex hormones and a variety of environmental factors including viral infections, diet, stress, chemical exposures, and sunlight are also thought to play a role in triggering this complex disorder. About 10 percent of SLE cases are thought to be triggered by drug exposure, and more than 80 drugs that may be involved have been identified.
In people with SLE, cells that have undergone self-destruction (apoptosis) because they are damaged or no longer needed are not cleared away properly. The relationship of thgis loss of function to the cause or features of SLE is unclear. Researchers suggest that these dead cells may release substances that cause the immune system to react inappropriately and attack the body's tissues resulting in the signs and symptoms of SLE.

## Clinical Features
Major clinical features and organ involvement and patient will come up with constitutional symptoms such as severe fatigue, fever and weight loss are present in most of the patients with systemic lupus Erythematosus (SLE) at some point during the course of the disease. Symptoms can vary and can change over time. Common symptoms include: severe fatigue, joint pain, joint swelling, headaches, a rash on the cheeks and nose which is called a

“”butterfly rash”, hair loss and anaemia, blood clotting problems, fingers turning white or blue and tingling when cold, which is known as Raynaud’s phenomenon. Other symptoms depend on the part of the body the disease is attacking, such as the digestive tract, the heart or the skin. [3]there is involvement of the various systems include mucocutaneous involvement, cardiac involvement, vasculitis, thromboembolic disease, renal, gastrointestinal, pulmonary, neuropsychiatric involvement, ophthalmologic involvement.

**Clinical Diagnosis**

The diagnosis of SLE is generally based on clinical and laboratory findings after excluding alternative diagnoses. In the absence of SLE diagnostic criteria, SLE classification criteria are often used by clinicians as guidance to help identify some of the salient clinical features when making the diagnosis. Serologic findings are important in suggesting the possibility of SLE, with some antibodies (e.g.: anti-double-stranded DNA [anti-dsDNA] and anti-Smith [anti-Sm]) highly associated with this condition.

**Critreria for classifying systemic lupus erythematosus**

The American college of rheumatology (ACR) established criteria for the classification of systemic lupus Erythematosus (SLE) in 1982. These were updated in 1997, and include four cutaneous, four systemic, and three laboratory criteria. Diagnosis is determined by evaluating presenting signs and symptoms, laboratory results, and the patient’s medical history and medical history of family members.

The ACR-established criteria are as follows:

- Malar rash
- Discoid rash
- Photosensitivity
- Oral ulcers
- Nonerosive arthritis
- Pleuritis or pericarditis
- Kidney disease
- Neurologic disease
- Hematologic disorder
- Immunologic disorder
- Positive antinuclear antibody

Based on the 11 criteria above. A person is diagnosed with systemic lupus Erythematosus if any 4 or more of the criteria are met at any time.

**Case Report**

A 55 years old female patient came to hospital, SMVDNSH emergency department with the chief complaints of decreased urinary output; SOB (Shortness of breath), fever, loss of appetite since morning. On examination patient is having cellulitis of left lower limb. She is a known case of systemic sclerosis, Hypothyroidism, Hypertension and Chronic left leg ulcer. She is admitted in emergency and diagnosed as C/o SLE/HTN/Sepsis/ Hypothyroidism. She is shifted to HDU (High dependency unit) and prescribed with the following medical management.

**Table 1.**

| S. No. | Trade Name | Generic Name | Action | Side effects |
|---|---|---|---|---|
| 1. | Tab. Ecosprin 75mg | Aspirin gastro-resistant tablets | Antiplatelet | Abdominal pain, heart burn, constipation, yellow colored eyes or skin, skin rash, irregular heartbeat, acid or sour stomach, drowsiness |
| 2. | Tab Eltoxin 100mg | Thyroxine sodium | Synthetic (levo-thyroxine hormone)Thyroid hormone | Chest pain and discomfort, rapid or irregular heartbeat, Thyrotoxic crisis. |
| 3. | Inj. Ticarnic 3.1gm | Clavulanic acid 100mg + Ticarcillin 3gm | Penicillin | Nausea, vomiting, diarrhoea, rash, allergic reaction |
| 4. | Inj Pantop 40mg | Pantoprozaole for injection | Proton pump inhibitor | Headache, altered sense of taste, diarrhoea, skin rash, anorexia |
| 5. | Inj Emset 4mg | Ondansetron | Antiemetic | Headache, constipation, fatigue, painful urination. |
| 6. | Tab Tadalafil 20mg | Tadalafil | PDE5 (Phosphodiesterase) inhibitors | Back pain, dyspepsia, headache, limb pain, myalgia, nausea and flushing. |

Diagnostic tapping is done on 04 February 2020 as per the advice of pulmonologist and following medicines were included:

**Table 2.**

| S. No. | Trade Name | Generic Name | Action | Side effects |
|---|---|---|---|---|
| 7. | Inj. Hydrocortisone 100mg | Hydrocortisone sod succinate | Glucocorticoids or steroid hormones | Stomach upset, headache, dizziness, trouble sleeping, appetite changes, acne. |
| 8. | Inj. Atropiae 0.6mg | AtropineSulfate | Antimuscaranic agent | Blurred vision, difficulty in urin ation, constipation, fever, flushing, and dryness of skin. |

Later patient presented with severe Pulmonary Arterial Hypertension (PAH) and respiratory distress. 06 February 2020 SLED (Sustained low-efficiency dialysis) done and three litres fluid removed on. After observing the improvement in condition patient is shifted to MIPD and kept on the medical management.

**Outcome and Follow Up**

At the end of the two weeks treatment plan the patient was suggested to continue the Corticosteroid therapy along with the regular medications prescribed for hypothyroidism and hypertension and to have a proper and regular follow-up visit to hospital.

**Discussion**

SLE is an exceedingly complicated disease with its involvement of multiple organ systems, and when severe requires high dose drug regimens that can easily

complicates the presentation and clinical response. SLE can be life-threatening, but advances in its treatment have led to improve morbidity. Thus, it is utmost importance for the involvement of professionals from different fields, depending on the organ systems affected, to form a multidisciplinary team. Fast and accurate information flow is crucial among professionals working together in order for the patient to have a good prognosis. There needs to be constant monitoring and evaluation of therapeutic regimens of the patient along with their response, due to the complicated and severe nature of the disease.

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