Systemic Lupus Erythematosus

Madeleine Smith
maddie.smith@otterbein.edu

Follow this and additional works at: https://digitalcommons.otterbein.edu/stu_msn

Part of the Nursing Commons

Recommended Citation
Smith, Madeleine, "Systemic Lupus Erythematosus" (2017). Nursing Student Class Projects (Formerly MSN). 236.
https://digitalcommons.otterbein.edu/stu_msn/236

This Project is brought to you for free and open access by the Student Research & Creative Work at Digital Commons @ Otterbein. It has been accepted for inclusion in Nursing Student Class Projects (Formerly MSN) by an authorized administrator of Digital Commons @ Otterbein. For more information, please contact digitalcommons07@otterbein.edu.
**Introduction**

My chosen research topic is systemic lupus erythematosus (SLE), otherwise commonly known as lupus. Lupus is an autoimmune disease that affects many different body systems, and has no cure. There are a plethora of symptoms commonly associated with the disease, and symptoms can vary greatly from person to person. Additionally, lupus can progress gradually and can have periods of remission like several other autoimmune diseases. All of these factors combined can make this disease very hard to diagnose, and therefore treat (Lam, Ghi, & Bielenski, 2016). By researching and learning more about lupus, I strive to gain a better understanding of this disease and its pathophysiology, symptoms, and appropriate treatment options. This will allow me to deliver better healthcare providers, and my peers, on the disease, as well as provide better care to my patients in my future practices.

I chose this topic for several reasons. First, I, myself, have been diagnosed with an autoimmune disease, but after several years of coming and going to doctors, I felt as though my physicians have been unable to pinpoint a specific disease or cause of my health problems. My current “diagnosis” is “unformulated connective tissue disease”. Based on some of the diagnostic tests, my physician has contemplated whether I may have lupus, but we have been unable to reach a conclusion, for now. I personally understand the frustrations that come with having health concerns that are not fully understood. For this reason, I am extremely driven to better understand these autoimmune diseases, since they are not easy to diagnose, specifically lupus, because it is so complex and debilitating. I want to not only appreciate all that goes into caring for patients with this disease, and therefore become better able to assist my future patients who may also have lupus.

**Signs and Symptoms**

- Common first presenting symptoms are not always specific, and include fatigue, fever, weight loss, rashes, and joint pain. The cause of these symptoms can be difficult to pinpoint (Lam, Ghi, & Bielenski, 2016).
- The disease is usually progressive, with periods of flares and remissions (Robinson, Sheets Cook, & Carriere, 2011). Patients may state they feel better when their symptoms are worse or improved.
- SLE is ten times more common in females than in males (Lam, Ghi, & Bielenski, 2016).

**Diagnosis**

- There is no specific test or biomarker for the disease. Diagnosis should be made based on clinical presentation, as well as lab work and other diagnostics (Wiemann, 2012).
- Patients with SLE generally present with non-specific complaints, and biomarkers may not be present early on the disease (Lam, Ghi, & Bielenski, 2016).
- SLE is difficult to diagnose due to the variety of symptoms/presentations of the disease, and as well as the many diagnostic criteria and subsets used to assist in diagnosing (Lam, Ghi, & Bielenski, 2016). Therefore, providers must be familiar with the disease and potential complications when caring for these patients.
- Care for patients with SLE can involve providers of different specialties, depending on the organs/systems that are involved (Tannast, Singh-Grewal, Kim, Craig, & Tong, 2015).
- It is important for providers to try to understand what may trigger a specific patient’s flares, with the goal being to prevent and predict them (Fernandes & Kivitz, 2016).

**Pathophysiology**

- SLE is characterized by abnormal immune cell activation (Moulson & Taskov, 2015).
- SLE, the body produces autoantibodies against self-antigens, which form immune complexes that once deposited in an organ system, prompt an immune response. This response can attract and kill immune cells, and activate the complement system, clotting cascade, and promote inflammation (Turano, 2013).
- An imbalance of pro and anti-inflammatory cytokines, which alters T cells signaling pathways. Some examples include interleukins, interferons, and tumor necrosis factor (Cook, & Currie, 2011).
- Interleukin 2 (IL-2) is decreased, which causes abnormal T cell activation. This leads to decreased activated-induced apoptosis of these defective T cells, which is necessary to delete unwanted cells (Moulson & Taskov, 2015).
- T regulatory cells, which control peripheral immune response, are decreased in patients with SLE (Moulson & Taskov, 2015).
- It is important for providers to try to understand what may trigger a specific patient’s flares, with the goal being to prevent and predict them (Fernandes & Kivitz, 2016).

**ACR DIAGNOSTIC CRITERIA**

<table>
<thead>
<tr>
<th>Skin criteria</th>
<th>Systemic criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Butterfly rash</td>
<td>1. Arthritis</td>
</tr>
<tr>
<td>2. Discoid rash</td>
<td>2. Serositis</td>
</tr>
</tbody>
</table>

**Nursing Implications**

<table>
<thead>
<tr>
<th>Laboratory criteria</th>
<th>Hematologic abnormalities</th>
<th>Immunologic abnormalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete blood count</td>
<td>9. Anemia</td>
<td></td>
</tr>
<tr>
<td>Autoimmune antibody</td>
<td>10. Abnormal antibody</td>
<td></td>
</tr>
</tbody>
</table>

**Significance of Pathophysiology**

- The pathophysiology of SLE affects many body systems. There are now different classifications for the disease (Czupreniuk & Glebo-Scrath, 2016).
- Environmental factors may assist with triggering SLE. This includes exposure to SLE light and certain infections. These factors may have cytotoxic effects, and may start the inflammatory process (Fernandes & Kivitz, 2016). Based on a patient’s presenting symptoms and by ruling out these types of exposures, a clinician can better isolate a diagnosis.

- Because of the alterations of the innate and immune active responses, infections are common and can be life-threatening in these patients. Infections in the most common cause of morbidity and mortality for those with SLE (Drayer, Agrawal, Baur, & Furet, 2016).
- The inflammatory process of SLE is parallel to the mechanisms that form rheumatoid processes. Autoantibodies to endothelial cells, which contributes to the development of vessel wall lesions, are often present in patients with SLE. These are some of the reasons that patients with SLE are at a higher risk of cardiovascular disease than the general population (Turano, 2013).
- Medical treatment for SLE often includes NSAIDS, antiinflammatory drugs and corticosteroids (Turano, 2013).

**Conclusions**

- SLE is an unpredictable, complex, and often debilitating disease.
- It is crucial for providers to understand the complexity of the disease and its course, in order to best protect for these patients.
- Additional research and studies are needed so that providers and patients can better understand the disease and how to manage it.
- Many complications can arise from SLE, due to its effects on the body on many different levels. Providers who treat and manage this disease must be prepared to encounter other diseases and medical problems, and be constantly monitoring for these potential complications.

**References**


Madeline Smith BSN, RN