Systemic Lupus Erythematosus: Cardiovascular Pathophysiology

Jennifer L. Mullins  
Otterbein University, jennifer.mullins@otterbein.edu

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

Recommended Citation
Systemic Lupus Erythematosus: Cardiovascular Pathophysiology
Jennifer L. Mullins, RN, BSN, PCCN
Otterbein University, Westerville, Ohio

Pathophysiological Disease Process

- SLE activates the immune system and the complement cascade.
- The chronicity of this activation theoretically contributes to atherosclerosis (Ammirati et al., 2014).
- "Atherosclerosis is an inflammatory disease initiated by dysfunction of the endothelial cells of the vasculature... resulting in damage to the endothelial layer of the arterial wall" (Turano, 2013, p. 49).
- Inflammation stimulates macrophages, cytokines, T cells and oxidation of low-density lipoproteins (LDLs).
- The cycle continues, "macrophages release growth factor that produces collagen forming a plaque [claque] over the accumulation of inflammatory cells, lips and necrotic tissue" (Turano, 2013, p. 49).
- The obstruction limits blood flow or can rupture.

Signs and Symptoms

- "Dyspnea"
- "Cough"
- "Fever"
- "Chest pain"
- "Abdominal/flank pain"
- "Skin rash"
- "Decreased urine output"
- "Anarthria"
- Elevated C-reactive protein
- Anti-ds DNA
- "Elevated troponin 1"
- "Anemia"
- "Proteinuria"
- "Simus tachycardia"
- "Pericardial effusion"
- "Mitra valve regurgitation"

Implications for Nursing Care

- Advanced Practice Nurses should monitor SLE patients:
  1. "Hypertension"
  2. "Heart failure"
  3. "Diabetes mellitus"
  4. "Lipids-lab, serum creatinine, potassium, proteinuria"
  5. "Echocardiogram" (Tsels, Koumaras, Urowitz & Gladman, 2014, p. 523)
- Advanced Practice Nurses should educate SLE patients regarding cardiovascular risk factors:
  1. "Control blood pressure"
  2. "Smoking cessation"
  3. "Dietary restriction"

Conclusion

- SLE is a complicated disease.
- A collaborative effort between Advanced Practice Nurses and patients is necessary to ensure success on the wellness continuum.
- Success is achieved through recognizing, educating and managing the cardiovascular risks associated with SLE.
- Weinstein et al. (2014) report an increase in cardiovascular risk the first 3 years of SLE, "early aggressive treatment may improve overall survival rates" (p. 137).

Significance of Pathophysiology

- Barasalou et al. (2016) found patients with childhood-onset SLE had a "statistically significant correlation of flow-mediated dilation (FMD) with disease duration" (p. 241).

References

Barsalou, et al. (2016) found patients with childhood-onset SLE had a "statistically significant correlation of flow-mediated dilation (FMD) with disease duration" (p. 241).