

HEART AND LUPUS

Ailda Nika, MD
Rush University

- Systemic lupus erythematosus (SLE) is a chronic inflammatory disease associated with greater comorbidity in comparison to the general population.
- Some of the main comorbid conditions in SLE are cardiovascular disease, infections, malignancy, osteoporosis etc.
- SLE patients are at 2-10 time risk of cardiovascular diseases / five-time higher in the 35-44 years old group age

- SLE patients and physicians need to be aware of the comorbidities and undergo screening and aggressively address them through appropriate referrals.
- SLE may increase risk of coronary artery disease (CAD), cerebrovascular accidents (CVA) and peripheral arterial disease.

- Traditional risk factors such as: smoking, hyperlipidemia, hypertension, diabetes (DM) and obesity seem to be enhanced by a series of different pathways including ongoing inflammation, disease activity, auto-antibodies or effect of prolonged corticosteroid exposure.

- Smokers in SLE have a three-fold increase in CVD events compared to smokers in general population
- Smoking is an environmental trigger for SLE, but also greater prevalence of autoantibodies (DsDNA antibody) can be seen among SLE patients who smoke.

- Higher rates of Obesity in SLE have been observed and are associated with prolonged prednisone use, especially central obesity, which is a relative risk for cardiovascular disease.
- A 10 mg increase in prednisone dose led to 5.50 +/- 1lb weight gain in 3 months period.
- Overweight is a major contributor to atherosclerosis in SLE patients otherwise at low risk for CVD.

- Hyperlipidemia is a known risk factor for cardiovascular disease in SLE.
- Prednisone use can result in an increase of total cholesterol.
- Prevalence of dyslipidemia in SLE ranges from 36% at diagnosis to 60% or even higher after 3 years of diagnosis.
- Although steroids effect on hyperlipidemia has been established, it is important to note that the use of antimalarial drugs in the other hand has been shown to have some protective effect

- Hypertension besides being a comorbid condition in itself can lead to strokes, and poor renal outcome.
- Research has established a significant rate ratio for cardiovascular events of 1.26 for every 10 mmHg increase in systolic blood pressure above 120 mm of HG.

- The presence of antiphospholipid antibodies, anti-dsDNA, or low serum complement is associated with CV events as well.
- Antiphospholipid antibodies might play a role in the development of atherosclerosis via different mechanisms, such as the pro-inflammatory activity.
-
- SLE patients who were positive for antiphospholipid antibodies had a 57% greater risk of suffering a CV.

- Low vitamin D levels are commonly seen among SLE patients. Besides bone health, low vitamin D may have implications on the CV system.
- In a large observational longitudinal study of 890 SLE patients, lower baseline 25(OH)D levels were found to be associated with higher risk for CVD.
- Furthermore, vitamin D deficiency is associated with hampered vascular repair and reduced endothelial function.
- Low vitamin D levels are easily modifiable through monitoring, screening, education and intervention.

- Some CV events in SLE, particularly heart failure and rhythm disorders, can be the result of several causes, such as lupus activity itself, fluid overload/ nephrotic range proteinuria, Anemia, pulmonary hypertension etc.

Symptomatology

- Chest pain (costochondritis/ GERD excluded)
- Chest pressure
- Palpitations
- Shortness of breath/ labored breathing

The Pericardium

- Pericarditis in up to 60% and 25% asymptomatic found on 2D- ECHO
- Pressure like discomfort relieved by leaning forward
- Chronic inflammation may lead to scarring and chronic pressure sensation

The Myocardium

- Myocardial dysfunction found in up to 40% of SLE patients
- Only 5% experience Myocarditis
- May present similar to Viral Myocarditis
- Chest discomfort, cough, SOB, +/- fever
- Only small % progress to CHF congestive Heart Failure

The Endocardium. Valvular Heart Dx

- 1-5% of SLE patients
- Sterile (cellular debris, IC, inflammatory cells) aggregates form “Libman Sacks endocarditis”
- Seen specially in patients with APLA +
- May progress to infectious (bacterial) endocarditis
- MVP common in SLE

Conclusion

- Awareness
- Screening
- Tight control and follow up

QUESTIONS