

## **Abstract**

**Background:** Cardiovascular disease is now acknowledged as a primary cause of morbidity and mortality in patients with Systemic Lupus Erythematosus (SLE). The risk of developing coronary artery disease in these patients is four to eight times higher than that in the normal population. Prior to this study there was no data regarding cardiovascular risk in SLE patients in our setting.

**Objective:** To determine the prevalence of selected cardiovascular risk factors and carotid atherosclerosis in patients with systemic lupus erythematosus at Kenyatta National Hospital.

**Methods:** This was a cross-sectional survey carried out in patients with SLE and age- and sex-matched controls at the Kenyatta National Hospital. The SLE patients underwent clinical assessment of their blood pressure, weight, height waist and hip circumference as well as laboratory testing to determine their fasting blood sugar and fasting lipid profile. In addition, measurement of carotid intima-media thickness (IMT) and assessment for presence of carotid plaque was done for the lupus patients. The controls had similar clinical and laboratory assessment done as for patients. Carotid ultrasonography was however not done for controls.

**Results:** Sixty six SLE patients and 66 healthy controls participated in this study. Mean age of the patients was 35.9years, with a female to male ratio of 21:1 and median duration of illness of two years. Hypertension prevalence was 42.4% in the patients and 24.2% in the controls ( $p=0.027$ ), dyslipidemia occurred in 74.2% of the patients and 61.1% of the controls ( $p=0.135$ ) while diabetes prevalence was 4.5% in patient and 1.5% in controls ( $p=619$ ). Obesity by Body Mass Index (BMI) assessment was found in 12.1% of patients and 21.2% of the controls ( $p=0.330$ ) whereas abdominal obesity (by waist:hip ratio) occurred in 33.3% of patients and 24.2% of controls ( $p=0.249$ ). Mean carotid IMT in SLE patients was 0.63mm (SD =0.15) with 9 (13.6%) patients having IMT readings of 0.8mm and above. Carotid plaque was detected in 15(22.7%) patients. Carotid IMT and BMI significantly correlated with disease duration ( $p$  values =0.006 and 0.021 respectively).

**Conclusion:** There was a high prevalence of atherosclerosis and selected cardiovascular risk factors in this population of SLE patients. Hypertension was significantly more common in the lupus patients than controls. Cardiovascular risk factors identified should be enhanced in patients with SLE.

**Key words:** Systemic lupus erythematosus, cardiovascular risk factors, carotid intima-media thickness, carotid plaque.