



Invited Commentary

Systemic lupus erythematosus and cardiovascular disease



Systemic Lupus Erythematosus (SLE) is a chronic, multisystemic, autoimmune inflammatory disease accompanied by B and T lymphocytes hyperreactivity and the production of autoantibodies leading to immune complex formation that promote through their deposition damages in various tissues like the kidneys, skin, joints, and brain while facilitating serositis, leukopenia, thrombopenia, and hemolysis [1]. The management of SLE contemplates a series of challenges recently reviewed [2] among which tackling comorbidities, in particular, cardiovascular risk occupies a relevant position because SLE patients present a 5–6 fold increase to develop a cardiovascular event and a 50-fold greater risk to develop an acute myocardial infarction [3]. Traditional cardiovascular risk factors such as those contained in Framingham Score do not predict completely the risk in SLE because they do not include factors directly related to the disease such as accelerated inflammation, immunometabolic changes, thrombosis, vasospasm, vasculitis and endothelial dysfunction that contribute to promote and increase cardiovascular risk. Two traditional CV risk factors are particularly relevant to facilitate risk and events, first the presence of a high prevalence of arterial hypertension that contributes to accrual damage, stroke and cognitive dysfunction [4], and second the presence of chronic kidney disease (CKD) which is associated to the presence of lupus nephritis, high blood pressure, septic shock and past cardiovascular history [5].

The risk of cardiovascular disease in SLE and the independent participation of traditional and SLE related risk factors differs with the age of the patients as shown in a paper published in this issue of the *International Journal of Cardiology Hypertension* [6]. The study included a total of 167,466 SLE patients and a similar control group from the National Inpatient Sample (NIS) from United States stratified by age, as young 18–35 years, middle age 36–55 years and adults >55 years. In young patients SLE is more frequent in African-Americans and is SLE factors together with CKD, hyperlipidemia and hypercoagulability participating importantly. With aging SLE related factors diminish in importance lipids and hypertension are dominant in all age groups. Interestingly, at any age the role of diabetes mellitus is lower than in subjects without SLE.

An adequate management of SLE must “treat to target” (maintained clinical remission of SLE or, at least, attain a status of low inflammatory activity of SLE) including the specific SLE therapy and also that directed to control traditional coronary artery disease factors principally statins, antihypertensive drugs and antidiabetic drugs.

Arterial hypertension is one of the most important factors involved in the progression of atherosclerosis and cardiovascular disease in patients with SLE. The prevalence can be as high as 77% and traditional factors as well as SLE-related factors participate in its development [1,7]. An adequate control of blood pressure is mandatory in SLE and albeit

Guidelines do not contemplate specifically the patient with SLE, it is reasonable to suggest that early detection and aggressive treatment is adequate in patients with SLE [4]. Treatment can follow either American or European Guidelines [8,9] attaining a blood pressure goal <130/80 mmHg in all patients according to American Guideline or in those with an age <65 years, considering a goal <140/90 mmHg if European Guidelines are considered. The elevated number of patients developing hypertension at ages 18–35 years and the greatest relevance of factors related to SLE indicate that treatment of SLE has to be particularly intense together with traditional therapy to attain an adequate control of blood pressure that probably must attain values <120/80 mmHg.

In summary, SLE is a disease frequently accompanied by an important increase in coronary artery disease risk factors that have to be treated with prudence but directed to attain the adequate blood pressure goal. Finally, ethnic and geographic variations [10] can influence in the adequate selection of the components of an adequate management of SLE.

Declaration of competing interest

None.

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