

One week later, she suddenly deteriorated with acute severe respiratory distress, severe hypoxemia, unstable shock, and hemoptysis. Chest X-ray showed bilateral lung infiltrate suggestive of diffuse alveolar hemorrhage. She was transferred to paediatric intensive care and mechanical ventilation, including high-frequency ventilation, was required. Flexible bronchoscopy confirmed diffuse alveolar hemorrhage. She was treated with pulses of methylprednisolone, intravenous cyclophosphamide, and plasmapheresis.

#### Learning Objectives

- Explain pulmonary manifestations in lupus
- Discuss therapeutic approach to diffuse alveolar hemorrhage
- Describe prognosis of this life-threatening complication of SLE

### 14 MANAGEMENT OF CARDIOVASCULAR INVOLVEMENT IN SLE

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#### Case 1: A 35-year-old woman of Hispanic ancestry

A 35-year-old woman of Hispanic ancestry received a diagnosis of systemic lupus erythematosus (SLE) in June 2021, based on polyarthralgia/itis, malar rash, proteinuria of 1400 mg/24 h, positive antinuclear antibodies, anti-double-stranded DNA antibodies (anti-dsDNA), with hypocomplementemia. Lupus anticoagulant, anticardiolipin and anti- $\beta_2$ -Glycoprotein-I antibodies were negative. Her SLEDAI score was 16. A kidney biopsy was performed showing a focal proliferative glomerulonephritis (Class III), with a score of 12 and 0 of activity and chronicity, respectively. She was treated with hydroxychloroquine 400 mg/day, prednisone 20 mg/day, and mycophenolate mofetil 3000 mg/day as induction therapy.

In September 2021 she came to the emergency room due to persistent tachycardia, dyspnea on moderate exertion, and chest pain. At admission she presented elevated ESR and C-reactive protein level, normal kidney function tests, proteinuria of 350 mg/24 h, and positive anti-dsDNA, with low C3 and C4. During hospitalisation she presented fever, and worsening dyspnea, for which she required oxygen therapy. The electrocardiogram showed sinus tachycardia and the echocardiography a systolic dysfunction and a hypokinetic left ventricle (inferior and lateral walls) with an ejection fraction of 40%. Troponin T and brain natriuretic peptides were elevated. The SARS-CoV2 RT-PCR was positive. With the suspected diagnosis of acute myocarditis in the context of SARS-CoV2 infection, the patient was treated with methylprednisolone pulses, IVIG, and respiratory support.

#### Learning Objectives

- Describe the different myocardial manifestations in a patient with SLE.
- Discuss complications and differential diagnosis with allied diseases.
- Discuss the treatment of myocarditis in a patient with SLE.

### 15 MANAGEMENT OF CARDIOVASCULAR INVOLVEMENT IN SLE

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#### Case 1: A 40-year-old woman with myocardial infarction

A 40-year-old female was diagnosed with systemic lupus erythematosus (SLE) at the age of 30 based on malar rash, arthritis, positive antinuclear antibodies, anti-double-stranded DNA antibodies, hypocomplementaemia, and biopsy-proven Class IV lupus nephritis. She was treated with glucocorticoids (GC), hydroxychloroquine (HCQ), and intravenous pulses of cyclophosphamide followed by mycophenolate mofetil (MMF) achieving complete remission 6 months later. Four years later, she suffered from a second SLE flare in the form of Class IV lupus nephritis as well as arthritis, receiving induction treatment with GC and MMF and achieving complete renal response 8 months later. She remained in lupus low disease activity for the next 5 years with prednisone 2.5 mg/day, HCQ 300 mg/day, and MMF 500 mg/12h. She was a current smoker, and her previous history included arterial hypertension and dyslipidaemia treated with enalapril 10 mg/day and atorvastatin 20 mg/day.

At the current admission, she presented at Emergency Department with thoracic pain and shortness of breath. She was diagnosed with myocardial infarction. Coronary angiography showed an atherosclerotic plaque in anterior descending coronary artery that required percutaneous coronary intervention and stenting. The patient was discharged without acute complications under treatment with dual platelet anti-aggregation.

What could we have done to avoid this outcome?

#### Learning Objectives

- Discuss the general management of cardiovascular risk factors in patients with SLE
- Discuss the usefulness of different scoring tools to assess the atherosclerotic cardiovascular disease in SLE patients and the potential utility of imaging
- Discuss the objectives of treatment (primary prevention) of the different cardiovascular risk factors (hypertension, dyslipidaemia, tobacco) in SLE patients and the indications of aspirin in primary prevention

### 16 MANAGEMENT OF LUPUS NEPHRITIS

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The therapeutic armamentarium of the lupologist is expanding, notably when faced with one of the most frequent severe systemic lupus erythematosus (SLE) organ manifestation: Lupus nephritis (LN). Based on real-practice case studies, we will address the latest guideline recommendations for the management of LN. With novel agents at hand, we will make a journey through several treatment strategies for LN and provide key learnings by interactive discussions.