



# Cardiac Manifestations during Systemic Lupus Erythematosus at Conakry University Hospital (Guinea)

Thierno Amadou Wann<sup>1</sup>, Djibril Sylla<sup>1</sup>, Amadou Kake<sup>1</sup>, Mamadou Bassirou Bah<sup>2</sup>, Mamadou Aliou Kante<sup>1</sup>, Mamadou Diakhaby<sup>1</sup>, Mamadou Lamine Yaya Bah<sup>1</sup>

<sup>1</sup>Internal Medicine Department of Donka University Hospital, Conakry, Guinea

<sup>2</sup>Cardiology Department of Ignace-Deen University Hospital, Conakry, Guinea

Email: thwann@yahoo.fr

**How to cite this paper:** Wann, T.A., Sylla, D., Kake, A., Bah, M.B., Kante, M.A., Diakhaby, M. and Bah, M.L.Y. (2025) Cardiac Manifestations during Systemic Lupus Erythematosus at Conakry University Hospital (Guinea). *Open Access Library Journal*, **12**: e14118. <https://doi.org/10.4236/oalib.1114118>

**Received:** August 14, 2025

**Accepted:** September 15, 2025

**Published:** September 18, 2025

Copyright © 2025 by author(s) and Open Access Library Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

## Abstract

**Introduction:** Systemic lupus erythematosus (SLE) is a non-organ-specific disease. Cardiac involvement is present in 25% - 82% of cases and represents one of the leading causes of mortality. **Materials and Methods:** Systemic lupus erythematosus (SLE) is a non-organ-specific disease. Cardiac involvement is present in 25% - 82% of cases and represents one of the leading causes of mortality. We included all patients with lupus who met at least four criteria of the American College of Rheumatology (ACR) classification of lupus disease in 1997. **Results:** During the study period, 5 patients among the 16 cases of systemic lupus erythematosus presented with cardiac involvement, representing a prevalence of 31.25%. The mean age of the patients was 28 years (range: 18 - 46 years), three women and two men, for a sex ratio (M/F) of 0.67. Cardiac involvement revealed the disease in 3 cases and was pericarditis-like, including one case of tamponade. Clinical manifestations were dominated by dyspnea found in 4 cases (80%) and chest pain in 3 cases (60%). Echocardiography confirmed 2 cases of myocarditis, 1 case of Libman Sacks endocarditis, 1 case of PAH, one case of high-abundance pericarditis, and 2 cases of low-abundance pericarditis. Treatment consisted of corticosteroid therapy in 100% of cases, synthetic antimalarials in 70% of cases, and an angiotensin-converting enzyme inhibitor in 4 cases. **Conclusion:** Cardiac involvement in SLE is burdened with a high mortality rate. It affects all three layers of the heart but remains dominated by pericarditis.

## Subject Areas

Allergy & Clinical Immunology, Immunology

## Keywords

Systemic Lupus Erythematosus, Cardiac, University Hospital, Conakry

---

## 1. Introduction

Systemic lupus erythematosus (SLE) is a non-organ-specific disease. Cardiac involvement is present in 25 to 82% of cases and represents one of the leading causes of mortality, despite the rarity of clinical signs [1] [2]. Most cohort studies report an average cardiovascular mortality rate of between 7 and 30% [3]. These cardiac disorders are well known and include pericarditis, myocarditis, valvular heart disease, ischemic coronary artery disease, conduction disorders, and arrhythmias [4]. Pericarditis is the most common cardiac manifestation (32% to 55%) of systemic lupus erythematosus [5] [6]. Diagnosis is usually based on the clinical features of pain, a pericardial rub, elevated C-reactive protein (which is unusual in systemic lupus without infection), electrocardiogram abnormalities, or even cardiac ultrasound [7].

In a study of 2390 lupus patients in the USA, pericarditis was statistically more common in patients of African-American origin [8].

In France in 2004, a study reported three consecutive cases, occurring within one year, of lupus patients who developed major left heart failure in the absence of coronary artery disease or hypertensive heart disease [4]. In Tunisia in 2019, a single-center study conducted on patients followed for SLE in an internal medicine department showed that cardiac involvement during this pathology represented 40.6%. Pericarditis represented the most common cardiac manifestation (64.1%, of which the discovery was incidental in 5 cases), followed by valvulopathies in 56.4%, then myocarditis and endocarditis in 7.7% and 2.6% of cases, respectively [9]. In Morocco, a study in 2015 showed that 14.62% of 212 cases of systemic lupus erythematosus had cardiac involvement. Cardiac involvement was indicative of SLE in seven cases and was of the pericarditis type with one case of tamponade [10].

A study carried out in the thoracic surgery department of the Conakry University Hospital shows that the etiologies of pericarditis were unspecified in 47.37% of cases [11]. The increasingly frequent problem of etiological diagnosis of pericarditis motivated the realization of this study, which aimed to determine cardiac manifestations during systemic lupus erythematosus at the Conakry University Hospital.

## 2. Materials and Methods

This was a prospective, multicenter, descriptive, and analytical study conducted at the University Hospital of Conakry (Guinea) from January 1, 2018, to December 31, 2022. Patients were either followed as outpatients or hospitalized. We included all patients with lupus who met at least four criteria of the American Col-

lege of Rheumatology (ACR) 1997 classification of lupus disease. All patients underwent clinical, electrocardiographic (ECG), radiographic (thorax), and echocardiographic cardiovascular disease screening.

This classification includes eleven [11] clinical and immunological manifestations, such as malar rash, oral ulcers, joint involvement, pleurisy/pericarditis, renal involvement, hematological abnormalities, or immunological abnormalities, allowing the diagnosis of SLE with a sensitivity and specificity of 96%.

All patients who did not meet the diagnostic criteria for SLE were excluded from this study.

The diagnostic criteria for cardiac arrest were based on:

- Cardiac ultrasound: visualizes pericardial effusion, which appears as a clear, echo-free space between the layers of the pericardium, as well as the presence of thickening; visualization of non-infectious vegetations and valvular thickening (Libman-Sacks endocarditis).

Pulmonary arterial hypertension (PAH) is described as a tricuspid regurgitation velocity greater than 3.4 m/s, and the presence of right atrial dilation or right ventricular dilation.

- Cardiac biomarkers, including cardiac troponins and creatine kinase-MB (CK-MB), are rising above laboratory reference values.

The collection was carried out after approval of the methodology by the ethics committee, and the information was collected anonymously after obtaining informed consent from the participants.

Our data were analyzed using Epi-Info software version 7.2. Quantitative variables are described as median and qualitative variables as number, percentage, and frequency.

The limitations of this study were a small sample size justified by the study being conducted in a single city (Conakry), but also by the referral of some suspected cases of SLE to dermatology, for example.

### 3. Results

During the study period, 5 patients among the 16 cases of systemic lupus erythematosus presented with cardiac involvement, representing a prevalence of 31.25%. The average age of the patients was 28 years (range: 18 - 46 years), three women and two men, representing a sex ratio (M/F) of 0.67. The diagnostic delay was 2 years. Cardiac involvement revealed the disease in 3 cases and was of the pericarditis type, including one case of tamponade. The clinical manifestations were dominated by dyspnea found in 4 cases (80%) and chest pain in 3 cases (60%). The ECG showed microvoltage in the 3 cases of pericarditis. Chest X-ray showed cardiomegaly in 3 cases. Echocardiography confirmed 2 cases of myocarditis, 1 case of Libman Sacks endocarditis, 1 case of PAH, 1 case of high-abundance pericarditis, and 2 cases of low-abundance pericarditis. Treatment consisted of corticosteroid therapy in 100% of cases, synthetic antimalarials in 70% of cases, and an angiotensin-converting enzyme inhibitor in 4 cases. The outcome was favorable in 3 cases.

We transferred one patient and observed one case of death due to tamponade.

#### 4. Discussion

Cardiac involvement can be indicative of systemic lupus. In our series, cardiac manifestations during SLE accounted for 31.25%. According to the literature, cardiac involvement is present in 25% to 82% of cases and is mainly represented by pericarditis, or 10% to 40% of cases [1] [12]. Harouna H *et al.* in 2015 in Morocco found 14.62% of cardiac involvement during SLE.

Systemic lupus erythematosus (SLE) is an autoimmune disease with significant clinical polymorphism and characterized by the production of antinuclear antibodies, particularly anti-native DNA antibodies. Cardiac involvement is part of this polymorphism and can aid in the discovery of SLE [13].

Regarding age, our patients were young, with a mean age of 28 years, ranging from 18 to 46 years. Systemic lupus erythematosus (SLE) is a connective tissue disease of young people, with the first signs rarely occurring after the age of 45 [14]. Studies revealing the existence of systemic lupus erythematosus after the age of 50 are rare. However, Tunisian studies have reported a few cases. Hintati O *et al.* [15] in 2016 reported 6 cases of SLE after the age of 50. The mean age at diagnosis was 60 years (50 - 79 years). Izidbih Y *et al.* [16] in 2018 reported 10 cases with a mean age of 57.8 years.

Females were predominant in our study, with a male/female sex ratio of 0.67 and a diagnostic delay of 2 years. This result corroborates data from the literature [17]-[19].

The reasons for the clear female predominance of the disease are unclear.

This autoimmune disease, which affects 90% of women, appears to be promoted by the expression of a gene by both female sex chromosomes [20].

In our series, cardiac involvement revealed the disease in 3 cases and was pericarditis-like, including one case of tamponade, representing 12.5% and 6.2% respectively.

Cardiac involvement in lupus involves all three layers of the heart but remains dominated by pericarditis, which is also included in the ACR diagnostic criteria [21].

Ben Dhaou Hmaidi B *et al.* [12] in Tunisia in 2012, during an observation of a 27-year-old patient followed for five years for Raynaud's syndrome and Sjögren's syndrome, discovered cardiac tamponade diagnosed following a chest X-ray that revealed cardiomegaly and pleural effusion. The electrocardiogram showed microvoltage and sinus tachycardia. Echocardiography revealed a large pericardial effusion.

Although pericarditis is the most common cardiac involvement in systemic lupus erythematosus (SLE), cardiac tamponade remains very rare as an initial manifestation of this disease.

The ECG showed microvoltage in all three cases of pericarditis. Echocardiography confirmed 2 cases of myocarditis, 1 case of Libman Sacks endocarditis, 1

case of PAH, 1 case of high-abundance pericarditis, and 2 cases of low-abundance pericarditis.

Thomas G *et al.* [22] in 2017, in a French multicenter series of 29 patients with lupus myocarditis, initial in 58.6% of cases, had a cardiac ultrasound that confirmed the diagnosis in 96.5% of cases and showed an ejection fraction  $\leq 45\%$  in 66% of cases and a pericardial effusion in 69% of cases [22].

Boucelma M *et al.* [23] in 1999 in Algeria found almost constant endopericardial involvement and 25.9% of myocardial locations on cardiac Doppler ultrasound. The predominant valvular lesion was mitral regurgitation of variable but often minimal grade.

These results show that Doppler ultrasound is of great value in the lesion assessment of this systemic condition with a frequent cardiac location but few symptoms. Our treatment was primarily based on corticosteroid therapy in 100% of cases, synthetic antimalarials in 70% of cases, and an angiotensin-converting enzyme inhibitor in 4 cases.

When congestive heart failure is related to lupus cardiomyopathy, corticosteroid therapy should be initiated, combined with correction of cardiovascular risk factors and standard heart failure treatment. Immunosuppressive therapy has not proven effective [4].

## 5. Conclusion

Systemic lupus erythematosus (SLE) is a non-organ-specific disease. Cardiac involvement carries a high mortality rate. It occurs at any time during the disease's progression and can be asymptomatic. Cardiac involvement in lupus affects all three layers of the heart but remains dominated by pericarditis.

## Conflicts of Interest

The authors declare no conflicts of interest.

## References

- [1] Ghyaza, A., Abid, L., Frikha, F., Turki, C., Bahloul, Z. and Kammoun, S. (2020) Les manifestations cardiaques détectées à l'échographie au cours du Lupus érythémateux systémique: Étude descriptive à propos de 20 cas. *La Revue de Médecine Interne*, **41**, A141-A142. <https://doi.org/10.1016/j.revmed.2020.10.239>
- [2] Harouna, H., Aboudib, F., Bouissar, W., Echchilali, K., Moudatir, M., Alaoui, F., *et al.* (2016) Manifestations cardiaques au cours du lupus érythémateux systémique. *La Revue de Médecine Interne*, **37**, A240. <https://doi.org/10.1016/j.revmed.2016.10.327>
- [3] Harzallah, A., Hajji, M., Kaaroud, H., Hamida, F.B. and Abdallah, T.B. (2015) Facteurs de risque cardiovasculaires au cours du lupus systémique. *Pan African Medical Journal*, **22**, Article 367. <https://doi.org/10.11604/pamj.2015.22.367.7611>
- [4] Gottenberg, J., Roux, S., Assayag, P., Clerc, D. and Mariette, X. (2004) Cardiomyopathies spécifiques au cours du lupus érythémateux systémique: À propos de 3 cas. *Revue du Rhumatisme*, **71**, 78-81. [https://doi.org/10.1016/s1169-8330\(03\)00274-6](https://doi.org/10.1016/s1169-8330(03)00274-6)

- [5] Ben Achour, T., Sayhi, S., Boussetta, N., Ben Abdelhafidh, N., Ajili, F. and Louzir, B. (2018) Les manifestations cardiaques au cours du lupus érythémateux: Une étude de 80 cas. *La Revue de Médecine Interne*, **39**, A105-A106. <https://doi.org/10.1016/j.revmed.2018.10.016>
- [6] Hajji, M., Barbouche, S., Harzallah, A., Zammouri, A., Ben Hamida, F., Ben Abdelghani, K., *et al.* (2015) La péricardite au cours du lupus: À propos de 89 cas. *La Revue de Médecine Interne*, **36**, A128-A129. <https://doi.org/10.1016/j.revmed.2015.03.125>
- [7] Dein, E., Douglas, H., Petri, M., Law, G. and Timlin, H. (2019) Pericarditis in Lupus. *Cureus*, **11**, e4166. <https://doi.org/10.7759/cureus.4166>
- [8] Ryu, S., Fu, W. and Petri, M.A. (2017) Associates and Predictors of Pleurisy or Pericarditis in SLE. *Lupus Science & Medicine*, **4**, e000221. <https://doi.org/10.1136/lupus-2017-000221>
- [9] Ghriess, N., Sayhi, S., Dhahri, R., Guediche, N.H., Boussetta, N., Ben Abdelhafidh, N., *et al.* (2019) Atteinte cardiaque au cours du lupus érythémateux systémique. *La Revue de Médecine Interne*, **40**, A134-A135. <https://doi.org/10.1016/j.revmed.2019.03.160>
- [10] Harouna, H., Aboudib, F., Bouissar, W., Echchilali, K., Moudatir, M., Alaoui, F., *et al.* (2016) Manifestations cardiaques au cours du lupus érythémateux systémique. *La Revue de Médecine Interne*, **37**, A240. <https://doi.org/10.1016/j.revmed.2016.10.327>
- [11] Camara, A.K., Magassouba, A.S., Keita, C.M., Diallo, A.S. and Bah, M.L.K.S. (2014) Pericarditis Management at the Service of Thoracic Surgery in the National Hospital of Donka: About 19 Cases. *Guinée Médicale*, **9**, 45-55.
- [12] Ben Dhaou Hmaidi, B., Boussema, F., Aydi, Z., Baili, L. and Rokbani, L. (2012) Tamponnade cardiaque révélatrice d'un lupus érythémateux systémique. *Revue de Pneumologie Clinique*, **68**, 300-302. <https://doi.org/10.1016/j.pneumo.2012.04.003>
- [13] Meyer, O. (2005) Lupus érythémateux systémique. *EMC-Rhumatologie-Orthopédie*, **2**, 1-32. <https://doi.org/10.1016/j.emcrho.2004.08.005>
- [14] Gaüzère, L., Gerber, A., Renou, F., Ferrandiz, D., Bagny, K., Osdoit, S., *et al.* (2019) Caractéristiques du lupus érythémateux systémique à La Réunion: Étude rétrospective en population adulte au CHU de Saint-Denis. *La Revue de Médecine Interne*, **40**, 214-219. <https://doi.org/10.1016/j.revmed.2018.07.004>
- [15] Hintati, O., Kort, Y., Fradj, H., Chaabene, I., Khammassi, N. and Abdelhedi, H. (2016) Lupus érythémateux systémique révélé après 50ans: À propos de 6 cas. *La Revue de Médecine Interne*, **37**, A238-A239. <https://doi.org/10.1016/j.revmed.2016.10.324>
- [16] Izidbih, Y., Snoussi, M., M, J., Bougharriou, I., Mkaouar, F., Derbel, A., *et al.* (2020) Lupus érythémateux systémique révélé après 50 ans: À propos de 10 cas. *La Revue de Médecine Interne*, **41**, A142. <https://doi.org/10.1016/j.revmed.2020.10.240>
- [17] Bouayed, K., Echcharaï, N. and Mikou, N. (2016) Le lupus érythémateux systémique juvénile : expérience marocaine d'une unité de rhumatologie pédiatrique. *Journal de Pédiatrie et de Puériculture*, **29**, 144-150. <https://doi.org/10.1016/j.jpp.2016.04.003>
- [18] Decoux-Poullot, A.G., Lassalle, S., Peyrottes, I., Benisvy, D., Hofman, V., Sanglier, J., *et al.* (2016) Aspects diagnostiques et évolutifs des nodules thyroïdiens de potentiel de malignité incertain. *Annales d'Endocrinologie*, **77**, 385. <https://doi.org/10.1016/j.ando.2016.07.436>
- [19] Henrot, P., Foret, J., Barnette, T., Lazaro, E., Duffau, P., Seneschal, J., *et al.* (2019) Évaluation de l'athérosclérose infraclinique dans le lupus érythémateux systémique: Revue de la littérature et méta-analyse. *Revue du Rhumatisme*, **86**, 232-240. <https://doi.org/10.1016/j.rhum.2019.02.007>
- [20] Miquel, C., Youness, A. and Guéry, J. (2021) Prédominance féminine des maladies

auto-immunes: les lymphocytes ont-ils un sexe? *Revue du Rhumatisme Monographies*, **88**, 3-7. <https://doi.org/10.1016/j.monrhu.2020.10.002>

- [21] Dadoui, S. (2016) Profil épidémiologique, clinique, biologique et thérapeutique du lupus erythémateux systémique. Faculté de Médecine et de pharmacie, Fès, Thèse N: 232/16.
- [22] Thomas, G., Cohen Aubart, F., Chiche, L., Haroche, J., Hié, M., Hervier, B., *et al.* (2016) Lupus Myocarditis: Initial Presentation and Longterm Outcomes in a Multicentric Series of 29 Patients. *The Journal of Rheumatology*, **44**, 24-32. <https://doi.org/10.3899/jrheum.160493>
- [23] Boucelma, M., Haddoum, F., Ziani, S., Bouyoucef, S.E. and Benabadi, M. (1999) Manifestations cardiaques du lupus érythémateux disséminé: Apport de l'écho-doppler cardiaque. *La Revue de Médecine Interne*, **20**, 582s. [https://doi.org/10.1016/s0248-8663\(00\)87620-1](https://doi.org/10.1016/s0248-8663(00)87620-1)