Scientific Research Publishing

Open Journal of Rheumatology and Autoimmune Diseases, 2024, 14, 125-131
https://www.scirp.org/journal/ojra
ISSN Online: 2164-005X
ISSN Print: 2163-9914

Lupus and Pregnancy

Soukaina Zaher[1]*, Hussein Boufettal[2], Kawtar Nassar[1], Naima Samouh[2], Saadia Janani[1]

[1]Rheumatology Department, Ibn Rochd University Hospital of Casablanca, Faculty of Medicine and Pharmacy, Hassan II University, Casablanca, Morocco
[2]Obstetrics and Gynecology Department, Ibn Rochd University Hospital of Casablanca, Faculty of Medicine and Pharmacy, Hassan II University, Casablanca, Morocco
Email: *soukaina.zaher@gmail.com

How to cite this paper: Zaher, S., Boufettal, H., Nassar, K., Samouh, N. and Janani, S. (2024) Lupus and Pregnancy. *Open Journal of Rheumatology and Autoimmune Diseases*, **14**, 125-131.
https://doi.org/10.4236/ojra.2024.143014

Received: May 7, 2024
Accepted: July 28, 2024
Published: July 31, 2024

Abstract

Introduction: Systemic lupus erythematosus is a multifactorial autoimmune disease characterised by its clinical polymorphism and its course in flares. The aim of our study was to determine the effects of pregnancy on lupus and vice versa. **Material and Methods:** This is a retrospective study conducted over a period of 14 years from 2002 to 2015. We included cases of systemic lupus erythematosus associated with pregnancy followed at the obstetrics and gynecology department "C" of the Ibn Rochd University Hospital in Casablanca. **Results:** The mean age of our parturients was 31.4 years. All our patients were known to have lupus and were followed up. Pregnancy was terminated in six (20%) cases. We noted one (3%) case of intrauterine fetal death, four (13%) cases of intrauterine growth retardation, and five (16%) cases of prematurity. Lupus flare during pregnancy occurred in 16 (52%) cases, including one (3%) patient who developed superimposed pre-eclampsia, had a renal relapse in the third trimester requiring an abortion at 32 weeks of gestation with three sessions of hemodialysis, and another patient who developed eclampsia. **Conclusion:** A better understanding of the aggravating factors and compatible treatments has led to a more widespread authorization of pregnancy.

Keywords

Systemic Lupus Erythematosus, Pregnancy, Morbidity, Prognosis, Retrospective Study

1. Introduction

Systemic lupus erythematosus (SLE), a complex autoimmune disease, can present particular challenges for pregnant women. Although the management of

these pregnancies has improved, they remain at risk, exposing both maternal and fetal complications [1]. Optimal management of these pregnancies requires close collaboration among various specialists, including internists, rheumatologists, obstetricians, anesthesiologists, and pediatricians. Preconception counseling is recommended to address these crucial aspects before pregnancy begins. A management and follow-up plan is established, facilitating prompt intervention in case of potential flares, directly impacting the well-being of both the mother and the fetus [2]. Our study aimed to examine the effects of pregnancy on lupus as well as the impact of lupus on the course of pregnancy.

2. Results

The average age of our parturients was 31.4 years, with extremes ranging from 22 to 38 years, and a predominance in the age group of 34 to 38 years. The median gravidity and parity were 2 and 1, respectively, with 39% being multiparous. One patient (3%) underwent voluntary termination of pregnancy (abortion) due to lupus. Four (13%) patients had a history of spontaneous miscarriage <10 weeks of gestation, with antiphospholipid antibody syndrome associated in one case. One (3%) patient had a history of intrauterine fetal death. Multiple miscarriages were observed in five (16%) patients, with four (13%) cases having antiphospholipid antibody syndrome. Among 31 parturients, three (10%) had a family history of lupus. The duration of the disease in all our patients exceeded three years, with remission lasting one to three years, except in five (16%) cases that required medical termination of pregnancy. Clinical manifestations related to lupus in our patients included chronic arthralgia in 11 (35%) cases, nine (29%) cases of malar rash, five (16%) cases of photosensitivity, four (13%) cases of discoid lupus, four (13%) cases of pleurisy or pericarditis, and one case (3%) of oral ulceration. Other clinical manifestations included one case (3%) of lupus chorea, two cases (6.45%) of Raynaud's syndrome, one case (3%) of urticaria, one case (3%) of dry syndrome, one case (3%) of alopecia, and one case (3%) of lymphadenopathy. Hypertension was found in eight (26%) patients. Lower limb edema was found in four (13%) cases. One patient was admitted for threatened preterm labor at 23 weeks of gestation with an examination revealing a long cervix open to two centimeters; this patient was treated with tocolysis (calcium channel blockers "nifedipine") and her pregnancy was carried to term. Among our patients, 23 cases had a normal obstetric ultrasound at admission, seven patients had oligohydramnios, and one patient had intrauterine fetal death at 28 weeks of gestation (**Table 1**). Renal insufficiency was found in five (16%) patients. Proteinuria was positive in 13 (45%) patients. Hematological abnormalities (anemia, thrombocytopenia) were present in 16 (52%) patients. Syphilitic serology was performed in 23 patients, returning positive in two (6%) patients. Eleven (35%) patients had positive anti-DNA antibodies. Antinuclear antibodies were

positive in 13 (46%) patients. Antiphospholipid antibodies were positive in eight (28%) patients. Complement levels were not assessed. Among our patients, 17 (55%) cases were on corticosteroid therapy with adjuvant treatment and antiplatelet aspirin. Antihypertensive treatment was prescribed in nine (32%) patients; eight patients had hypertension and one case of lupus nephropathy stage II. Hydroxychloroquine was continued in eight (26%) patients. The five patients with antiphospholipid antibody syndrome were treated with aspirin and heparin in combination preconceptionally; intrauterine fetal death occurred at 28 weeks of gestation in one of them. Among our 31 patients, 16 (52%) experienced progressive flares, including six (19%) cases during the first trimester; skin flares in four (13%) cases, cutaneous and articular flares in two (6.45%) cases, pericarditis in one (3%) case, and renal flare in one (3%) case (Table 2). These parturients were not on any treatment and responded well to corticosteroid therapy. One (3%) patient who developed superimposed preeclampsia and had a renal relapse in the third trimester required premature termination of pregnancy at 32 weeks of gestation with three sessions of hemodialysis. In the postpartum period, four (13%) patients experienced relapses, and their corticosteroid dose was not increased. Among our 31 parturients, we noted: Six (19%) cases of medical termination of pregnancy were performed at 5, 10, 12, 14, 15, and 18 weeks of gestation, one (3%) case of intrauterine fetal death occurred at 28 weeks of gestation, five (16%) cases of preterm delivery occurred at 29 and 32 weeks of gestation; two cases at 33 weeks of gestation and one case at 35 weeks of gestation, and 19 (61%) cases of term pregnancies (Figure 1). Cesarean section indications are summarized in Table 3. Among the 31 cases; one (3%) case of intrauterine fetal death and 24 (77%) cases resulted in live births, among which five (16%) newborns were premature, four (13%) newborns had intrauterine growth retardation, and 15 (48%) newborns were normal. The four (13%) newborns whose mothers were maintained on hydroxychloroquine throughout pregnancy had no cardiac malformations. All 31 (100%) patients had normal postpartum outcomes. The five patients who required therapeutic termination of pregnancy did not experience any complications. Three multiparous parturients and another with lupus nephropathy stage II underwent tubal ligation, representing a frequency of 13%, and 27 (87%) patients were placed on micro-progestins postpartum.

Table 1. Demographic, clinical, and paraclinical data of parturients.

	Number	Percentage (%)
Age (Standard Deviation)	31.4 (±4.35)	
22 - 25	4	13
26 - 29	6	19
30 - 33	9	29
34 - 38	12	39

Continued

Antiphospholipid Syndrome	5	16
Recurrent Miscarriage	5	16
Gestational Hypertension	8	26
Lower Limb Edema	4	13
Chronic Arthralgia	11	35
Malar Rash	9	29
Photosensitivity	5	16
Discoid Lupus	4	13
Pleurisy or Pericarditis	4	13
Oral Ulceration	1	3
Obstetric Ultrasound		
Normal	23	74
Oligohydramnios	7	23
Intrauterine Fetal Death	1	3
Positive Proteinuria	13	45
Lupus Nephritis	10	32
Renal Insufficiency	5	16
Hemodialysis	2	6
Native Anti-DNA Antibodies	11	35
ANA	13	46
Anemia	16	52
Thrombocytopenia	10	33
Treatment		
Corticosteroids	17	55
Low-dose Aspirin	21	72
LMWH	3	10
Hydroxychloroquine	8	26
Azathioprine	1	4
Antihypertensive Medication	9	32

ANA: Antinuclear antibodies; LMWH: Low molecular weight heparin.

Table 2. Distribution of lupus flare-up cases associated with pregnancy based on the time of onset.

Timing of flare	Number of cases	Percentage (%)
First trimester	6	19
Second trimester	2	7
Third trimester	4	13
Postpartum	4	13
No flare	15	48

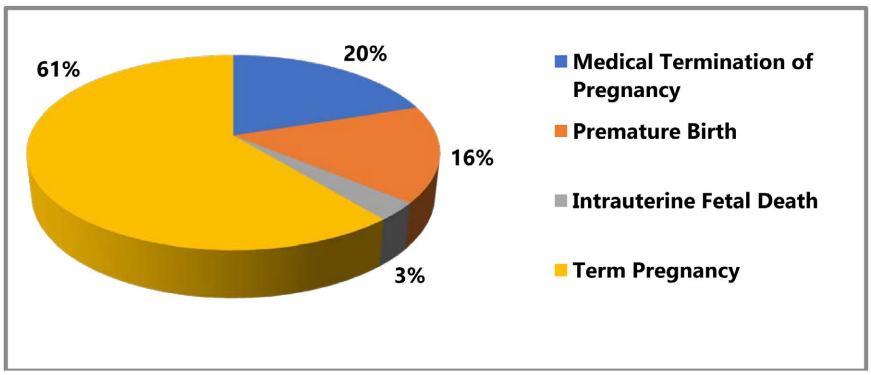

Figure 1. Distribution of lupus associated with pregnancy based on pregnancy outcome.

Table 3. Indications for cesarean section.

Cesarean Indications	Number of Cases	Percentage (%)
Oligohydramnios	3	10
Eclampsia	1	3
Severe Pre-eclampsia	1	3
Persistent Occiput Posterior	1	3
Vaginal Delivery	25	81

3. Discussion

Systemic lupus erythematosus (SLE) can significantly affect pregnancy, and pregnancy can affect lupus activity. In our series, 52% of pregnant women experienced lupus flares, with 19% occurring in the first trimester. The timing of flares varies between trimesters and in the postpartum period [1]-[3]. Renal disease is a risk factor for poor fetal and maternal outcomes. It is recommended to wait at least six months after a lupus flare, especially a renal flare, before conceiving, although one study suggests that a four-month delay may be sufficient. High-risk pregnancies require multidisciplinary collaboration and essential preconception counselling [4] [5]. The fetal prognosis is poor when lupus is diagnosed during pregnancy, with high rates of fetal loss [6]. Complications such as

placental insufficiency and thrombosis are common, often exacerbated by antiphospholipid antibodies [7]-[9]. Hydroxychloroquine reduces flares when used during pregnancy. Despite advances, rates of fetal loss, prematurity, and intrauterine growth retardation remain high [10] [11]. Preventive therapies, including hydroxychloroquine and azathioprine, are accepted, but the addition of corticosteroids in late pregnancy is controversial because of potential risks to both mother and fetus [5] [12].

4. Conclusion

Systemic lupus erythematosus, a disease that typically affects young women of childbearing age, highlights the importance of pregnancy for women with lupus, emphasizing the psychological and emotional dimensions of this period. Pregnancy and the postpartum period can reveal previously unrecognized lupus, and a lupus flare can occur at any time during pregnancy, especially if lupus is active at conception. When lupus is inactive for at least six months before conception, remission persists in most cases, particularly with adequate management. Advances in understanding the factors influencing the course of lupus during pregnancy have improved the treatment and monitoring of pregnant lupus patients. Combined with advances in fetal surveillance techniques and assessment of fetal well-being, this offers a reasonably favorable outlook for both mother and child in most cases. Nevertheless, our findings align with the literature in terms of the possibility of serious maternal and fetal complications, underscoring the importance of coordinated multidisciplinary surveillance to early detect disease flares and promptly adjust treatment.

Ethics Approval and Consent to Participate

The original article was approved by the Ethics Committee of the University Hospital of Ibn Rochd.

Consent for Publication

The patients' written consent was obtained.

Availability of Data and Material

Data concerning the patient's record are available from the corresponding author on reasonable request.

Authors' Contributions

SZ: conception, data curation, interpretation, and writing of the manuscript. HB, KN, NS, SJ: conception, data curation, and supervision of the draft.

Conflicts of Interest

The authors declare that they have no competing interests.

References

[1] Jorge, I.F., Frade, J.M.V., Capela, S.P.L.D.A., Graça, A.L.F.M.D., Grilo, M.L.A.G.P. and Centeno, A.M.M.M.d.C. (2023) Obstetric and Perinatal Outcomes in Pregnant Women with Lupus: Retrospective Study in a Portuguese Tertiary Center. *Revista Brasileira de Ginecologia e Obstetrícia/RBGO Gynecology and Obstetrics*, **45**, e568-e574. https://doi.org/10.1055/s-0043-1772481

[2] Kroese, S.J., Abheiden, C.N.H., Blomjous, B.S., van Laar, J.M., Derksen, R.W.H.M., Bultink, I.E.M., *et al*. (2017) Maternal and Perinatal Outcome in Women with Systemic Lupus Erythematosus: A Retrospective Bicenter Cohort Study. *Journal of Immunology Research*, **2017**, Article ID: 8245879. https://doi.org/10.1155/2017/8245879

[3] Georgiou, P.E., Politi, E.N., Katsimbri, P., Sakka, V. and Drosos, A.A. (2000) Outcome of Lupus Pregnancy: A Controlled Study. *Rheumatology*, **39**, 1014-1019. https://doi.org/10.1093/rheumatology/39.9.1014

[4] Bellakhal, S., Ben Hassine, L., Cherif, E., Boukhris, I., Azzabi, S., Kaouache, Z., *et al*. (2013) Lupus et grossesse: Expérience d'un service de médecine interne à propos de 26 cas et revue de la littérature. *Pathologie Biologie*, **61**, 269-272. https://doi.org/10.1016/j.patbio.2013.05.003

[5] Tian, X., Zhao, J., Song, Y., Wang, Q., Li, M., Liu, J., *et al*. (2023) 2022 Chinese Guideline for the Management of Pregnancy and Reproduction in Systemic Lupus Erythematosus. *Rheumatology and Immunology Research*, **4**, 115-138. https://doi.org/10.2478/rir-2023-0019

[6] Clowse, M.E.B., Magder, L.S., Witter, F. and Petri, M. (2006) Early Risk Factors for Pregnancy Loss in Lupus. *Obstetrics & Gynecology*, **107**, 293-299. https://doi.org/10.1097/01.aog.0000194205.95870.86

[7] Abdwani, R., Al Shaqsi, L. and Al-Zakwani, I. (2018) Neonatal and Obstetrical Outcomes of Pregnancies in Systemic Lupus Erythematosus. *Oman Medical Journal*, **33**, 15-21. https://doi.org/10.5001/omj.2018.04

[8] Chen, D., Lao, M., Zhang, J., Zhan, Y., Li, W., Cai, X., *et al*. (2018) Fetal and Maternal Outcomes of Planned Pregnancy in Patients with Systemic Lupus Erythematosus: A Retrospective Multicenter Study. *Journal of Immunology Research*, **2018**, Article ID: 2413637. https://doi.org/10.1155/2018/2413637

[9] Iijima, S. (2017) Fetal and Neonatal Involvement in Maternal Rheumatologic Disease. *The Journal of Maternal-Fetal & Neonatal Medicine*, **31**, 2079-2085. https://doi.org/10.1080/14767058.2017.1334048

[10] Clowse, M.E.B., Magder, L., Witter, F. and Petri, M. (2006) Hydroxychloroquine in Lupus Pregnancy. *Arthritis & Rheumatism*, **54**, 3640-3647. https://doi.org/10.1002/art.22159

[11] Koh, J.H., Ko, H.S., Kwok, S., Ju, J.H. and Park, S. (2014) Hydroxychloroquine and Pregnancy on Lupus Flares in Korean Patients with Systemic Lupus Erythematosus. *Lupus*, **24**, 210-217. https://doi.org/10.1177/0961203314555352

[12] Lateef, A. and Petri, M. (2012) Management of Pregnancy in Systemic Lupus Erythematosus. *Nature Reviews Rheumatology*, **8**, 710-718. https://doi.org/10.1038/nrrheum.2012.133