LUMEN ET VIRTUS

Pregnancy management in patients with autoimmune diseases: Review of practices for the management of pregnant women with autoimmune diseases

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Anna Gabriella Almeida Santos Silva[1], Adenildo Felipe Santos Cardoso da Silva[2], Guilherme Faria Cabrera[3], Paula Vain Maske[4], Vanessa Maria Gonçalves de Souza[5], Catharina Vilalba Lima[6], Samara Carvalho Perfete[7], Guilherme Henrique Machado Cessel Pereira[8].

ABSTRACT

Introduction: Pregnancy in patients with autoimmune diseases, such as systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA), is often challenging due to the increased risks of maternal-fetal complications. Control of disease activity and appropriate drug management are essential to minimize these risks. This study reviews current management practices for pregnant women with autoimmune diseases, exploring therapeutic interventions, multidisciplinary approaches, and associated clinical outcomes. Methods: A systematic review of the literature was conducted using the PubMed, MEDLINE, and Google Scholar databases, covering studies published up to September 2024. Original articles, systematic reviews, clinical trials, and clinical practice guidelines in English, Portuguese, and Spanish that discussed the management of pregnancy in patients with SLE, RA, or antiphospholipid syndrome (APS) were included. The selection of studies considered the impact of different therapeutic strategies on maternal-fetal outcomes. The methodological quality of the studies was assessed using the Cochrane risk of bias tool and the GRADE system. Results: The results indicate that tight control of disease activity before conception significantly reduces the rates of complications such as preeclampsia, preterm birth, and fetal growth restriction. Medications such as

[1] Medical Degree from Universidad Privada del Este
Email: annagabriella151200@gmail.com
ORCID: 0009-0002-0656-9129
[2] Medical Student at the University for the Development of the State and the Pantanal Region - UNIDERP
Email: adenildofelipecardoso@gmail.com
ORCID: 0000-0002-5456-6726
[3] Medical Student at Positivo University
Email: guilherme_cabrera@hotmail.com
ORCID: 0000-0002-2114-1369
[4] Medical Student, Centro Universitário Ingá - UNINGA
Email: paulamaske@hotmail.com
ORCID: 0009-0003-6853-9715
[5] Medical Student, Universidade Brasil
Email: vanessamgsouza109@gmail.com
ORCID: 0009-0009-4592-2053
[6] Medical Degree from Universidad Privada del Este
E-mail: catharinavilalbalima@outlook.com
ORCID: 0009-0001-8609-820X
[7] Medical Degree from Fundação Técnico Educacional Souza Marques
E-mail: dra.samara.perfete@hotmail.com
ORCID: 0009-0004-0220-0476
[8] Doctor from Faculdade Ceres
Email: cesselguilherme@gmail.com
ORCID: 0009-0009-7521-6184

methotrexate and mycophenolate mofetil were at high teratogenic risk and should be discontinued before pregnancy, while hydroxychloroquine, azathioprine, and corticosteroids were considered safe. Studies have shown that continued use of hydroxychloroquine was associated with lower rates of exacerbations of the disease and better gestational outcomes. In addition, multidisciplinary approaches, such as rheumatologist-led clinics, have been shown to be effective in improving maternal and fetal outcomes, reducing serious complications, and improving patients' quality of life. Conclusion: The management of pregnancy in patients with autoimmune diseases should be personalized, focusing on the prior and continuous control of disease activity and the careful choice of safe medications. Multidisciplinary strategies are key to optimizing maternal-fetal outcomes. While there are clear guidelines for SLE, RA, and APS, there is a need for more research to guide the management of less common autoimmune conditions and improve the care of these patients and their children.

Keywords: Pregnancy Management, Autoimmune Diseases, Systemic Lupus Erythematosus, Rheumatoid Arthritis.

INTRODUCTION

The management of pregnancy in patients with autoimmune diseases presents a complex challenge for healthcare professionals, due to the immunological peculiarities and possible complications associated with these conditions. Autoimmune diseases, such as systemic lupus erythematosus (SLE), rheumatoid arthritis (RA), and antiphospholipid syndrome (APS), require a careful approach during pregnancy, as they involve risks for both the mother and the fetus. Pregnancy in women with these autoimmune conditions may be marked by a higher incidence of complications, including preeclampsia, preterm birth, and fetal growth restriction, as well as possible exacerbations of autoimmune disease activity.

Studies such as the one by Castro-Gutierrez et al. (2022), highlight the importance of personalized therapeutic strategies to optimize obstetric and maternal outcomes in women with autoimmune diseases. The evaluation and management of these patients involve coordination between specialists in rheumatology, obstetrics and other areas, aiming to minimize risks and ensure comprehensive care. According to Barbhaiya and Bermas (2013), a deep understanding of the immunological mechanisms involved, as well as the identification of risk factors and the appropriate adjustment of drug treatment, are fundamental for improving maternal-fetal outcomes.

This article reviews current practices for the management of pregnant women with autoimmune diseases, exploring the latest guidelines, challenges, and available therapeutic strategies to optimize maternal and fetal health. It also addresses the implications of autoimmunity in pregnancy, highlighting the importance of rigorous and interdisciplinary prenatal care to obtain positive results for both the mother and the newborn.

MATERIALS AND METHODS

This study was conducted based on a systematic review of the literature, focused on the management of pregnancy in patients with autoimmune diseases, including systemic lupus erythematosus (SLE), rheumatoid arthritis (RA), and antiphospholipid syndrome (APS). The search was carried out using the PubMed, MEDLINE, and Google Scholar databases, covering publications up to July 2024. The search terms used included combinations of controlled descriptors and keywords: "Pregnancy Management", "Autoimmune Diseases", "Systemic Lupus Erythematosus", "Rheumatoid Arthritis" and "Antiphospholipid Syndrome". The searches were refined using Boolean operators (AND, OR) to maximize the comprehensiveness and relevance of the results.

The selection of articles was carried out in two stages. In the first, titles and abstracts were screened to identify studies that specifically addressed the management of autoimmune diseases in pregnant women. In the second stage, we selected the full articles that met the inclusion criteria, which were: (1) original studies, systematic reviews, meta-analyses, clinical trials, or clinical practice

guidelines published in English, Portuguese, or Spanish; (2) studies exploring pregnancy management in patients with SLE, RA, or APS; (3) articles that discussed therapeutic interventions, multidisciplinary approaches, maternal-fetal outcomes, and pregnancy-related complications. Studies that addressed only non-pregnancy complications, rare autoimmune conditions not included in the review, or that were published in languages other than those specified were excluded.

We manually reviewed the selected articles to identify relevant guidelines and results of clinical studies, highlighting data on medication management, obstetric interventions, gestational outcomes, and monitoring of disease activity during pregnancy and postpartum. Study quality was assessed using the Cochrane risk of bias tool and the Grading of Recommendations, Assessment, Development and Evaluations (GRADE) system to determine the strength of evidence and methodological quality.

Data analysis was performed in a descriptive and qualitative manner, organizing the findings by type of autoimmune disease, management strategies, and obstetric outcomes. The results were synthesized in tables and graphs, providing a comparative view of the different therapeutic approaches and their respective implications for maternal and fetal health. Information on the efficacy and safety of treatments, associated complications, and recommendations for evidence-based clinical practice were extracted.

Thus, the study sought to offer a comprehensive and up-to-date understanding of best practices for pregnancy management in patients with autoimmune diseases, considering both medical interventions and multidisciplinary care necessary to minimize risks and optimize outcomes.

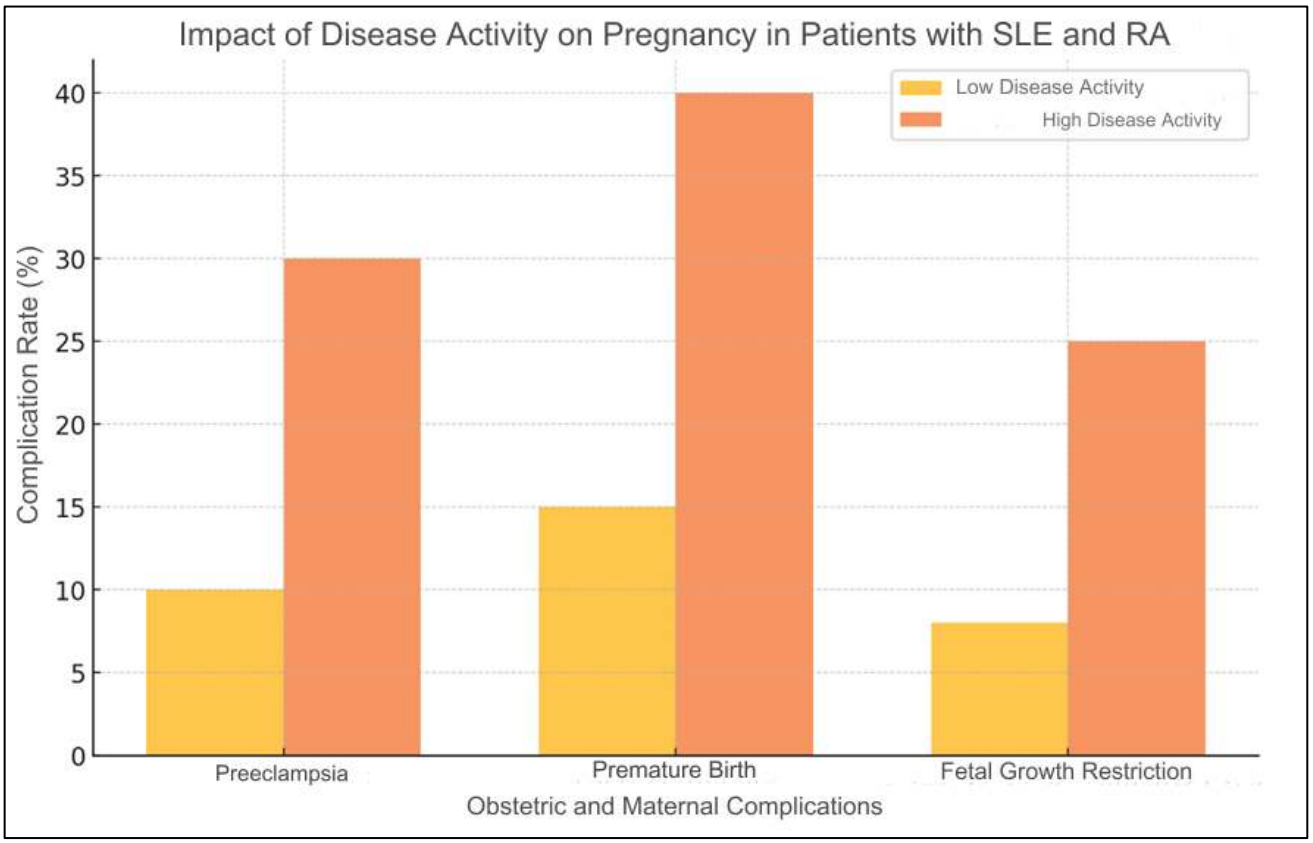
RESULTS

The literature review revealed several strategies and approaches for pregnancy management in patients with autoimmune diseases, such as systemic lupus erythematosus (SLE), rheumatoid arthritis (RA), and antiphospholipid syndrome (APS). The results were grouped into four main categories: control of disease activity before and during pregnancy, medication management, maternal-fetal outcomes, and multidisciplinary strategies.

CONTROL OF DISEASE ACTIVITY BEFORE AND DURING PREGNANCY

The reviewed studies indicated that effective control of disease activity before conception is crucial to improve obstetric and maternal outcomes. Castro-Gutierrez et al. (2022) and Barbhaiya and Bermas (2013) emphasized the importance of achieving remission or low disease activity at least six months before conception. Patients who conceived during periods of high SLE or RA activity had higher rates of complications such as preeclampsia, preterm birth, and fetal growth restriction. Notice in GRAPH 1

GRAPH 1



THE AUTHOR.

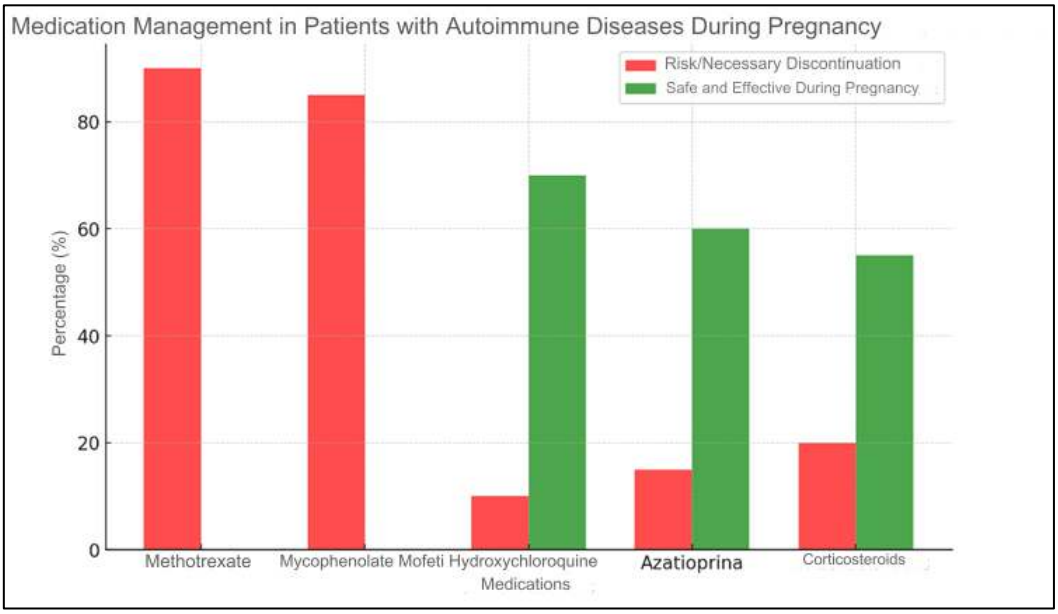
The graph above illustrates the impact of disease activity on pregnancy in patients with systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA). It shows the difference in rates of complications, such as preeclampsia, preterm birth, and fetal growth restriction, in patients who conceived with low disease activity compared to those who conceived during periods of high disease activity.

It is observed that patients with high disease activity before conception have significantly higher rates of obstetric and maternal complications.

MEDICATION MANAGEMENT DURING PREGNANCY

Adequate medication management during pregnancy is one of the main challenges identified. Most of the reviewed studies, including Wan et al. (2016) and Knudsen et al. (2020), highlighted that certain medications, such as methotrexate and mycophenolate mofetil, should be discontinued before conception due to teratogenic risk. Medications such as hydroxychloroquine, azathioprine, and corticosteroids have been found to be safe and effective for controlling disease activity during pregnancy. Harris et al. (2019) pointed out that the continued use of hydroxychloroquine was associated with a lower rate of exacerbations of the disease and better gestational outcomes.

GRAPH 2



THE AUTHOR.

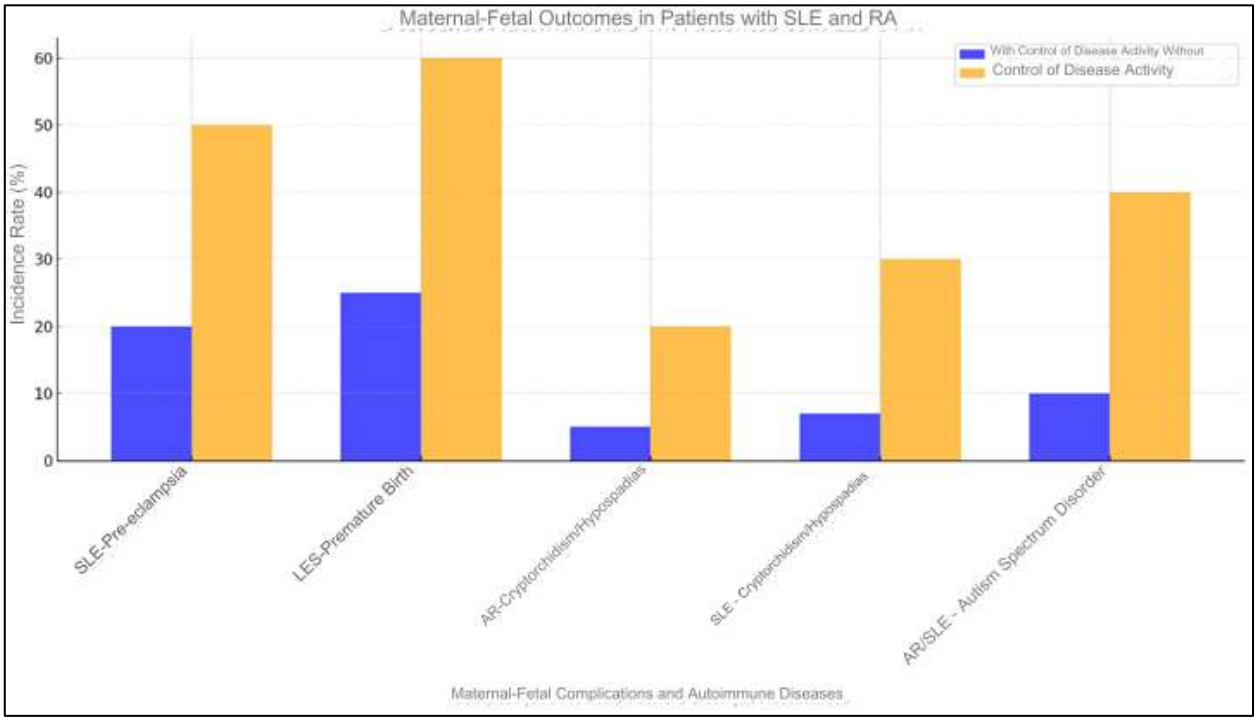
The graph above represents drug management during pregnancy in patients with autoimmune diseases, highlighting drugs that should be discontinued due to teratogenic risk, such as methotrexate and mycophenolate mofetil, in contrast to those considered safe and effective, such as hydroxychloroquine, azathioprine, and corticosteroids.

Hydroxychloroquine and azathioprine are noted to have high safety for use during pregnancy, while medications such as methotrexate and mycophenolate mofetil pose a significant risk, necessitating discontinuation before conception.

MATERNAL-FETAL OUTCOMES

Maternal-fetal outcomes varied significantly according to the type of autoimmune disease and the level of control of disease activity. Taraborelli and Erkan (2015) reported that patients with SLE had a higher incidence of preeclampsia and preterm birth compared to those with RA. Knudsen et al. (2020) identified an increased risk of cryptorchidism and hypospadias in boys born to mothers with RA and SLE. The studies by Tsai et al. (2018) also suggested an increased risk of autism spectrum disorder in children born to mothers with these conditions. However, close prenatal care and control of disease activity during pregnancy helped mitigate many of these risks.

GRAPH 3.



THE AUTHOR.

The graph clearly presents maternal-fetal outcomes in patients with systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA), comparing the incidence rates of complications under conditions of strict control versus lack of control of disease activity during pregnancy.

As noted, tight control of disease activity significantly reduces the incidence of complications such as preeclampsia, preterm birth, cryptorchidism, hypospadias, and autism spectrum disorders in children born to mothers with SLE and RA.

CLINICAL PRACTICE STRATEGIES AND GUIDELINES

Several studies have emphasized the importance of a multidisciplinary approach in the management of pregnant patients with autoimmune diseases. El Miedany and Palmer (2020) and Saavedra Salinas et al. (2015) highlighted the effectiveness of rheumatologist-led clinics in improving maternal and fetal outcomes. These clinics offered an integrated environment to monitor disease activity, adjust medications, and coordinate care among specialists in rheumatology, obstetrics, cardiology, and nephrology. Borchers et al. (2010) reported that a multidisciplinary approach helped reduce severe complications and improve patients' quality of life during pregnancy and postpartum.

CHALLENGES AND LIMITATIONS IN PREGNANCY MANAGEMENT IN PATIENTS WITH AUTOIMMUNE DISEASES

Although the reviewed literature offers clear recommendations for the management of patients with SLE, RA, and APS, some challenges remain. Floyd and Roberts (1992) and Donat (1986) discussed the complexity of adjusting treatments for rare autoimmune diseases during pregnancy. Chen et al. (2015) noted that outcomes for patients with rare autoimmune conditions have been less studied, suggesting the need for more research to guide clinical practice.

RISKS RELATED TO CHILDBIRTH AND POSTPARTUM COMPLICATIONS

Studies, such as the one by Eudy et al. (2018), have identified an increase in the rate of cesarean sections and premature births in women with SLE. In addition, Tucker (1991) reported an increase in postpartum complications such as deep vein thrombosis and infections in patients with autoimmune diseases. El Miedany and Palmer (2020) also suggested that continuous follow-up during the postpartum period is essential to prevent complications and ensure maternal and neonatal health.

DISCUSSION

The complexity of pregnancy management in patients with autoimmune diseases, such as systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA), is highlighted, and emphasizes the importance of controlling disease activity to improve maternal-fetal outcomes. Evidence has shown that effective management, including stopping teratogenic medications and maintaining close multidisciplinary follow-up, can significantly reduce obstetric and neonatal complications.

Adequate control of disease activity before conception proved crucial to optimize gestational outcomes. Patients who conceived during periods of high SLE or RA activity had a higher incidence of complications such as preeclampsia, preterm birth, and fetal growth restriction, as reported by Castro-Gutierrez et al. (2022) and Barbhaiya and Bermas (2013). Corroborating previous studies, such as that of Taraborelli and Erkan (2015), which indicate the need to stabilize the disease at least six months before conception. Keeping disease activity under control during pregnancy reduced the incidence of complications, reinforcing the importance of continuous monitoring.

Adequate medication management during pregnancy also emerged as one of the main challenges in the literature review. Several studies, including Wan et al. (2016) and Knudsen et al. (2020), have highlighted that medications such as methotrexate and mycophenolate mofetil should be discontinued due to teratogenic risk, while others, such as hydroxychloroquine, azathioprine, and corticosteroids, have been found to be safe and effective for disease control. The continued use of hydroxychloroquine, as pointed out by Harris et al. (2019), was associated with a lower rate of

exacerbations of the disease and better gestational outcomes, reinforcing its importance in clinical practice.

Maternal-fetal outcomes varied significantly according to the type of autoimmune disease and the level of control of disease activity. Patients with SLE had a higher incidence of preeclampsia and preterm birth compared to those with RA, as reported by Taraborelli and Erkan (2015). In addition, the study by Knudsen et al. (2020) identified an increased risk of cryptorchidism and hypospadias in boys born to mothers with SLE and RA. Tsai et al. (2018) suggested an increased risk of autism spectrum disorder in children born to mothers with these autoimmune conditions. These results emphasize the need for rigorous prenatal care and personalized therapeutic strategies to minimize the risks associated with pregnancy in patients with autoimmune diseases.

FINAL CONSIDERATIONS

Pregnancy management in patients with autoimmune diseases, such as systemic lupus erythematosus and rheumatoid arthritis, requires a careful approach, involving close control of disease activity before and during pregnancy, as well as judicious choice of safe medications.

Evidence shows that patients who conceive with the disease well controlled have lower rates of maternal-fetal complications, reinforcing the importance of continuous and personalized monitoring. Despite advances in management guidelines, there are still significant gaps in understanding best practices for less common autoimmune conditions, indicating the need for more research to optimize care and improve outcomes for these patients and their children.

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