



IMPACT OF AUTOIMMUNE DISEASES (E.G., SYSTEMIC LUPUS ERYTHEMATOSUS) ON PREGNANCY OUTCOMES

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ABSTRACT

Autoimmune diseases, particularly Systemic Lupus Erythematosus (SLE), significantly affect pregnancy outcomes due to immune dysregulation, chronic inflammation, and multi-organ involvement. Women of reproductive age are disproportionately affected by autoimmune conditions, making pregnancy management a complex clinical challenge. SLE is associated with increased risks of preeclampsia, fetal growth restriction, preterm birth, and pregnancy loss. Additionally, the presence of antiphospholipid antibodies further increases thrombotic complications and adverse fetal outcomes. This article reviews the epidemiology, pathophysiology, clinical manifestations, and management of autoimmune diseases during pregnancy, emphasizing the importance of multidisciplinary care.

Keywords: autoimmune disease, SLE, pregnancy, antiphospholipid syndrome, fetal outcomes, preeclampsia

INTRODUCTION

Autoimmune diseases occur when the immune system mistakenly attacks the body's own tissues. Among them, Systemic Lupus Erythematosus (SLE) is one of the most clinically significant conditions affecting women of reproductive age.

According to the World Health Organization, autoimmune diseases disproportionately affect women, especially during their childbearing years. Pregnancy in women with autoimmune diseases presents unique challenges due to the interaction between maternal immune status and fetal development.

Key concerns include:

- Disease flare-ups during pregnancy
- Placental dysfunction
- Increased maternal and fetal morbidity

This article explores how autoimmune diseases, particularly SLE, influence pregnancy outcomes.

MATERIALS AND METHODS

This study is based on a narrative review of literature from PubMed, Scopus, and Web of Science.

Inclusion Criteria:

- Studies published between 2010 and 2024
- Pregnant women with autoimmune diseases
- Studies focusing on maternal and fetal outcomes

Diagnostic Methods:

- Autoantibody testing (ANA, anti-dsDNA, antiphospholipid antibodies)

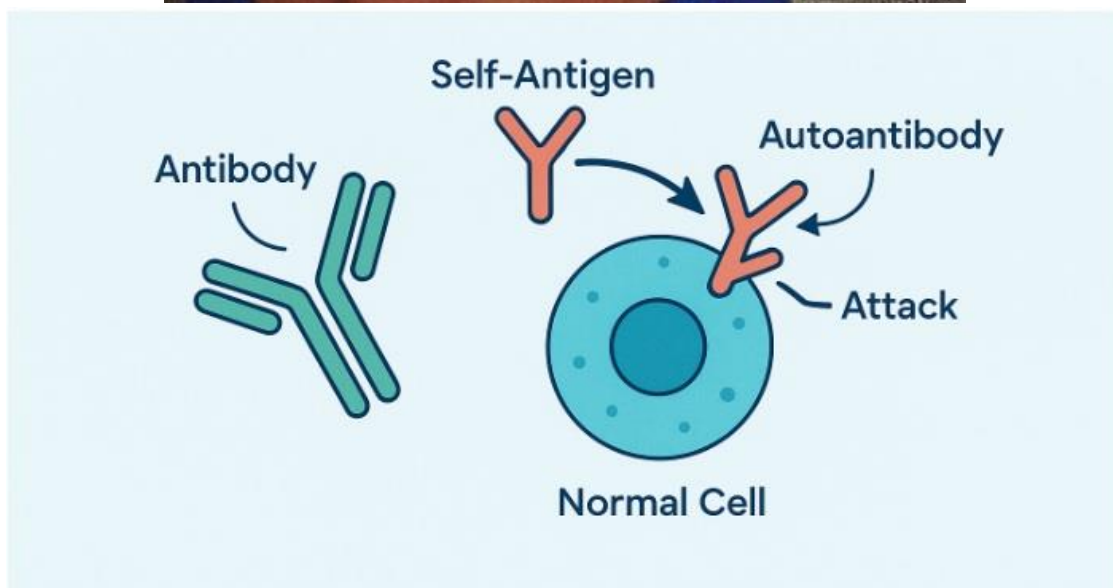
- Complement levels
- Clinical assessment

RESULTS

1. Epidemiology of Autoimmune Diseases in Pregnancy

Autoimmune diseases affect approximately 5–10% of women, with SLE being more common in reproductive-aged women.

- Female-to-male ratio: ~9:1
- Peak incidence: 15–45 years



2. Pathophysiology

a. Immune Dysregulation

SLE is characterized by:

- Autoantibody production



- Immune complex deposition
- Complement activation

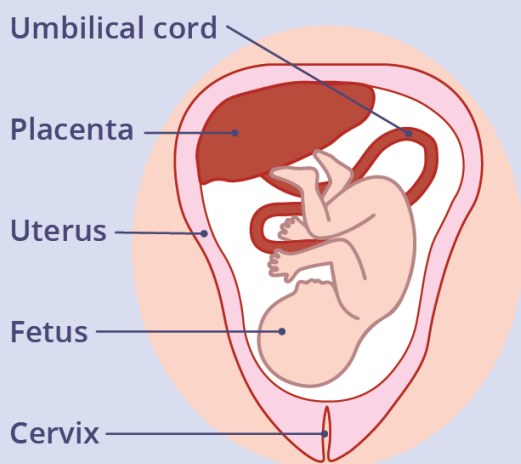
These processes lead to systemic inflammation and organ damage.

b. Placental Dysfunction

Autoimmune activity affects placental circulation:

- Reduced blood flow
- Thrombosis
- Impaired nutrient exchange

Placental insufficiency



This image shows a normal placental location, with the placenta attached at the top of the uterus.

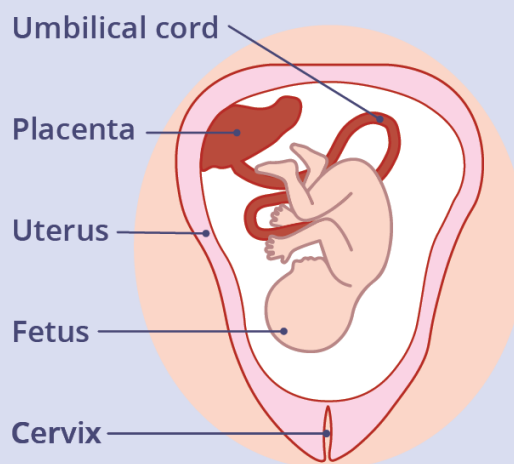
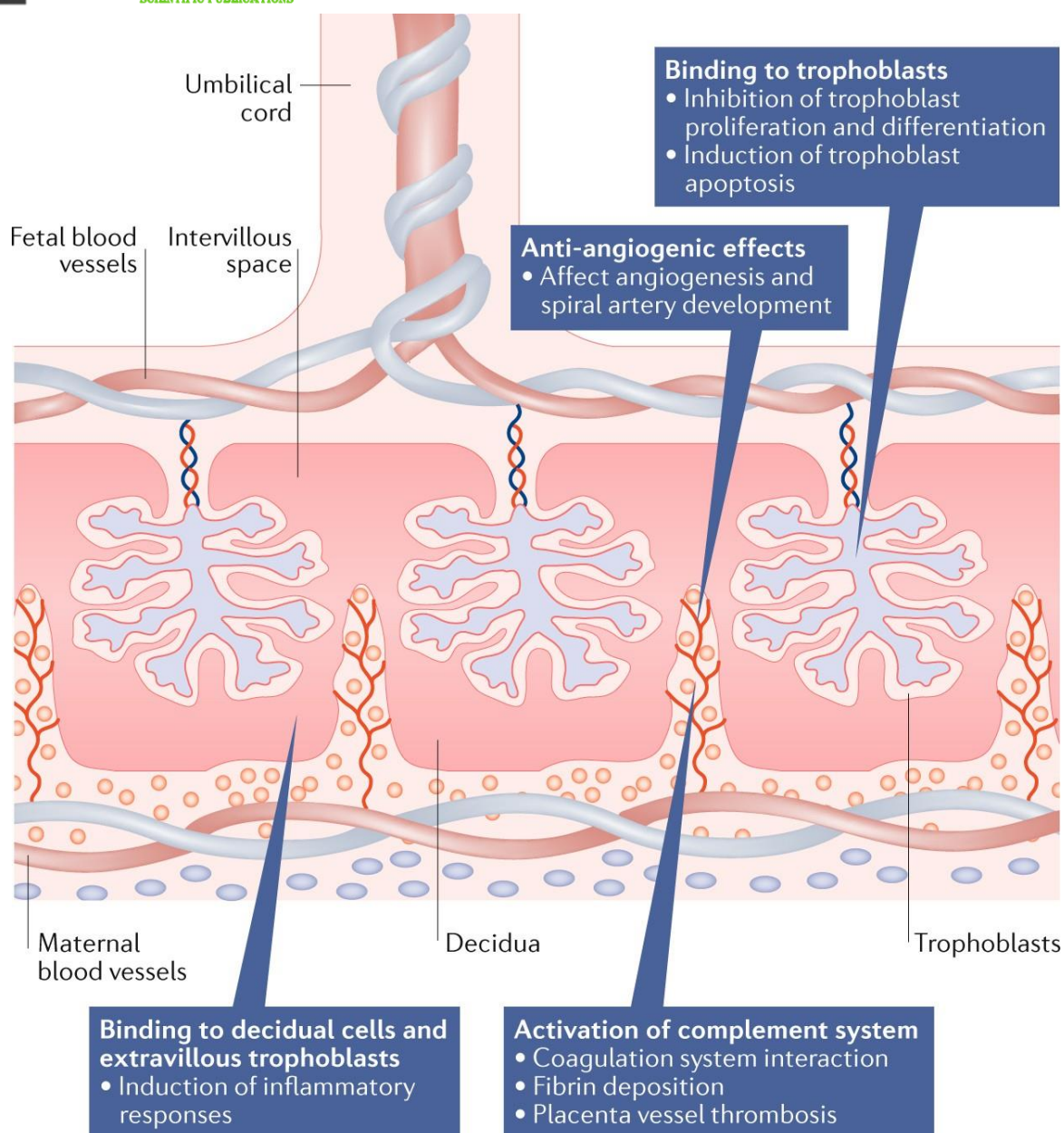


Image showing a small placenta that has partially come away from the wall of the uterus.



c. Antiphospholipid Syndrome (APS)

Many SLE patients have antiphospholipid antibodies, leading to:

- Increased clotting
- Recurrent miscarriages
- Placental infarction

3. Maternal and Fetal Outcomes

Maternal Complications:

- Disease flare (especially in active SLE)
- Preeclampsia
- Lupus nephritis

Fetal Complications:

- Intrauterine growth restriction (IUGR)
- Preterm birth
- Miscarriage

Neonatal Outcomes:

- Neonatal lupus

- Congenital heart block



4. Clinical Manifestations

Maternal Symptoms:

- Joint pain
- Skin rash
- Fatigue
- Renal involvement

Pregnancy-specific Signs:

- Hypertension
- Proteinuria
- Edema

5. Diagnosis and Monitoring

Laboratory Tests:

- ANA, anti-dsDNA
- Antiphospholipid antibodies
- Complement levels



Fetal Monitoring:

- Ultrasound
- Doppler studies
- Fetal echocardiography

6. Management

Preconception Care:

- Disease remission for at least 6 months
- Medication adjustment

Pharmacological Treatment:

- Hydroxychloroquine (safe and recommended)
- Low-dose aspirin
- Heparin (for APS)

Monitoring:

- Regular antenatal visits
- Multidisciplinary care

DISCUSSION

Autoimmune diseases, particularly SLE, significantly impact pregnancy outcomes through immune-mediated mechanisms and vascular complications. Active disease at conception is associated with worse outcomes.

Early diagnosis, careful monitoring, and appropriate treatment can improve both maternal and fetal prognosis. The use of safe medications such as hydroxychloroquine has significantly improved outcomes.

CONCLUSION

Autoimmune diseases, especially SLE, pose significant risks during pregnancy. Their impact is mediated through immune dysregulation, placental dysfunction, and thrombosis. Proper preconception planning, close monitoring, and multidisciplinary management are essential to achieving favorable outcomes.

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