***Autoimmune disease in pregnancy*** د.بان هادي

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**Systemic lupus erythematosus (SLE)**:

***Definition***: is a chronic autoimmune inflammatory disease. It is ten times more common in women, particularly in black and Asian populations, and the incidence is around 1 in 1000 women. It may cause disease in any system, but principally it affects the joints (90 per cent), skin (80 per cent), lungs, nervous system, kidneys and heart.

SLE may be diagnosed prenatally or may be suspected for the first time during pregnancy or postpartum, usually as a result of complications.

***Diagnosis***: a positive assay for antinuclear antibodies at least 2 readings 6 weeks apart, while the presence of antibodies to double-stranded DNA is the most specific for SLE. If 4 of the 11 criteria in the ACR classification system for SLE are present serially or simultaneously, a person is said to have SLE.

American College of Rheumatology (ACR) criteria for classification of SLE1. Malar rash2. Discoid rash3. Photosensitivity4. Oral ulcers5. Non-erosive arthritis6. Pleuritis or pericarditis7. Renal disorder8. Neurologic disorder9. Haematologic disorder10. Immunologic disorder11. Positive anti-nuclear antibodySLE is characterized by periods of disease activity, flares and remissions. Pregnancy increases the risk of flares, but these also become more difficult to diagnose accurately due to coincident pregnancy symptoms. Flares are more common in the late second and third trimesters. Active disease at the time of conception or new-onset SLE in pregnancy both increase the chance of a flare.

***Pregnancy complications:*** the outcome is generally good as immunosuppressive therapy is safe, however an increased risk of:

1. miscarriage,
2. fetal death,
3. pre-eclampsia,
4. preterm delivery and
5. FGR.

***Management of SLE in pregnancy*** :

* **First Trimester**.The mother should **book early to multidisciplinary care**
* Initial laboratory studies include

1. Complete blood count
2. serum creatinine
3. 24-hour urine collection for measurement of protein and creatinine
4. General urine examination
5. lupus panel (antinuclear antibody, anti Sjogren's antibody or anti-Ro and anti-La antibody titers, lupus anticoagulant levels, and anticardiolipin antibody, anti-dsDNA antibody titers,
6. Evaluation for lupus flares should be done at each visit.

* **Second Trimester**.

1.Repeated laboratory studies

2.Obstetric ultrasonography should be performed every 4 weeks after 20 weeks' gestation until delivery to monitor fetal growth.

3.In women positive for anti-Ro or anti-La antibodies, echocardiography should begin at 16 to 18 weeks' gestation to assess for possible heart block and be repeated weekly until delivery.

* **Third Trimester**.

1. Fetal testing, with weekly nonstress tests and/or biophysical profile, may be initiated as early as 28 weeks.

2.Doppler ultrasonographic studies should be performed, In the presence of IUGR . Treatment with betamethasone or dexamethasone should be initiated in patients with poor fetal test results or worsening maternal disease in anticipation of a preterm delivery.

* **Postpartum**.
* Repeated labs, as recommended in the first trimester, should be repeated postpartum.

***Antenatal treatment for SLE***( Treatment During Lupus Flare),

1. Steroids: The usual dosage is prednisone 60 mg daily for 2 to 3 weeks, which is then tapered to the lowest dosage, ideally <10 mg/d, to control symptoms.
2. Immunosuppressive agents: azathioprine,
3. sulphasalazine and hydroxycloroquine may be given safely.

**Antiphospholipid syndrome(APS)** is used to describe the association of anti-cardiolipin antibodies (aCL) and/or lupus anticoagulant (LA) with the typical clinical features of arterial or venous thrombosis, fetal loss after 10 weeks, three or more miscarriages at less than 10 weeks, or delivery before 34 weeks due to intrauterine growth restriction or pre-eclampsia.

APS may be primary or found in association with SLE.

**Diagnostic criteria for APS1.Clinical**• Thrombosis : venous or arterial

**2.Pregnancy morbidity**• fetal death >10 weeks• preterm birth <34 weeks due to severe pre-eclampsia or growth restriction• three or more unexplained miscarriages <10 weeks

3. **Laboratory**• anticardiolipin aCL immunoglobulin (Ig)G and/or IgM, medium or high titre, two occasions, 8 weeks apart•lupus anticoagulant LA, two occasions, 8 weeks apart

**Managemen**t

Due to these significant risks, pregnant women with APS require intensive monitoring for both maternal and fetal indications. The mother should **book early to multidisciplinary care** and be seen frequently. **1.Baseline renal studies, including a 24-hour urine collection for protein**.

**2.** **Blood pressure should be monitored closely** because of the increased risk of pre-eclampsia**.**

**3. Serial ultrasonography** is performed to assess fetal growth, umbilical artery Doppler and liquor volume.

4.In women with APS who have suffered repeated pregnancy loss or severe obstetric complications, **the combined use of low- dose aspirin and low-molecular-weight heparin during pregnancy** has been shown to reduce the pregnancy loss rate.

**Rheumatoid arthritis (RA**)

This is a chronic multisystem disease of unknown cause with an immunologically mediated pathogenesis.

Pregnancy and Rheumatoid Arthritis

Rheumatoid arthritis improves in up to 90 % of affected women during pregnancy, there are no obvious adverse effects of rheumatoid arthritis on pregnancy outcome.

**Management during Pregnancy**

The main concern of RA patients is the safety of medication used to control the disease. If **paracetamol-based analgesics** are insufficient, **corticosteroids** are preferred to **non-steroidal anti- inflammatory drugs**, although the latter can be used up to 32 weeks if needed. **Azothiaprine and hydroxychloroquine** have been used in pregnancy, with no increase in malformation rates reported and no apparent adverse outcomes. Mode of delivery is determined by the usual obstetric indications, except where severe RA limits hip abduction and vaginal delivery is not possible

**Immune thrombocytopenic purpura (ITP)**

In immune thrombocytopenicpurpura (ITP), autoantibodies are produced against platelet surface antigens, leading to platelet destruction by the reticuloendothelial system. The incidence in pregnancy is around 1 in 5000. Maternal haemorrhage at delivery is very unlikely if the platelet count is >50\*109/L, and spontaneous bleeding during pregnancy very unlikely if the platelet count is >20\*109/L. There is a 5–10 per cent chance of associated fetal thrombocytopenia (<50 \*109/L).

**Management in pregnancy** should include:

1. **serial monitoring of platelet counts** and, provided the count remains above 80 \*109/L, no complications are likely. If the count falls below 50 \* 109/L approaching term, treatment should be considered. **2.Corticosteroids** act by suppressing platelet autoantibodies; Corticosteroids also take 2–3 weeks to have a significant effect.

3.Intravenous **immunoglobulin G (IgG)** has been a major advance in the treatment of autoimmune thrombocytopenia.

4.Vaginal delivery should be facilitated and regional anaesthesia avoided if the platelet count is <80\*109/L. **Fetal blood sampling in labour and instrumental delivery by ventouse are best avoided** because of the risk of fetal thrombocytopenia.

**5.A cord blood sample** must be collected for platelet counting, but the nadir of the neonatal platelet count occurs 2–5 days after delivery.

***Myasthenia Gravis***

Myasthenia gravis is a chronic disorder of the neuromuscular junction of striate muscles as result of acetylcholine receptor dysfunction.

**Treatment**

1.Anticholinesterases (eg, neostigmine) is the same as in the nonpregnant state, although dosages must be administered more frequently during pregnancy.

2. Other treatment options include thymectomy, steroids, plasma exchange, and IVIG.

3.During labor, anticholinesterases should be administered parenterally rather than orally. Parenteral and regional anesthesia are not contraindicated in labor. Curare like agents eg. aminoglycoside antibiotics and magnesium sulfate, as well as the older general anesthetics such as ether and chloroform, should be avoided.

4.Women taking anticholinesterase drugs are advised not to breastfeed

End of lecture