**Autoimmune disease in pregnancy**

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**Systemic lupus erythematosus**

More common in women than men (9:1). The incidence is 1:1000 and onset during the reproductive age is common. It is a connective tissue disease of relapses (flares) and remissions. Monitoring disease severity in pregnancy • Flare-ups can be diffi cult to diagnose as similar symptoms occur in normal pregnancy, e.g. fatigue, hair loss, joint aches, anaemia.

• Renal disease can also be difficult to distinguish from pre-eclampsia, as hypertension, proteinuria, and thrombocytopaenia are common to both conditions.

**Maternal risks**

• Long-term prognosis is not affected by pregnancy.

• There is increased risk of flare-up, especially in the puerperium.

• Hypertension, pre-eclampsia, and placental abruption are more common.

Do not stop hydroxychloroquine as this may precipitate a flare.

**Fetal risks**

• Increased risk of miscarriage, preterm delivery, preterm rupture of membranes, IUGR, and in utero fetal death.

• These risks are due to anticardiolipin antibodies, lupus anticoagulant, renal impairment, or hypertension. Risk is low if all these are absent.

• Congenital heart block may occur in women with anti-Ro (or La) antibodies, which cross the placenta (risk of occurrence if anti-Ro +ve is 2–3%, increasing to 25% if previously affected child).

• Transient skin lesions similar to cutaneous lupus can occur in neonates (usually in fi rst 2wks of life).

**Management**

• Multidisciplinary team management.

• Prepregnancy counselling of maternal and fetal risks based on BP, renal function, anti-Ro, and antiphospholipid antibody status.

• Treat hypertension and modify medication if necessary

• Advise conception during periods of disease remission: less risk of flare.

• Flare-ups should be treated by starting or increase dose, of steroids.

• Assess fetal growth and well-being (uterine artery Doppler at 24wks is a useful screening test).

NOTE: American Rheumatism Association criteria Diagnosis requires four of the following features, either simultaneously or following each other:

• Facial butterfl y rash.

• Discoid lupus.

• Photosensitivity of skin rash.

• Oral or nasopharyngeal ulceration.

• Arthritis: non-erosive, migratory of two or more peripheral joints.

• Serositis: pleurisy or pericarditis.

• Renal problems: proteinuria >500mg/day or cellular casts.

• Neurological problem: psychosis or convulsions.

• Haemotological problem: haemolytic anaemia, leucopaenia.

**Antiphospholipid antibody syndrome**

This condition is diagnosed on the basis of the presence of one or more clinical features and one or more positive laboratory

findings.

**Diagnostic criteria**

**Clinical criteria**

• Vascular thrombosis: arterial or venous.

• Three or more consecutive miscarriages <(10wks).

One or more fetal death >10 weeks.

• One or more preterm delivery (<34wks) due to preeclampsia or placental insufficiency

**Laboratory criteria:**

Lupus anticoagulant present on at least two occasions >6wks apart.

Anticardiolipin antibody ( IgG OR IgM ) in medium or high titer on at least two occasions >6 wks apart

**Maternal risks**

• These include placental abruption and pre-eclampsia.

• Previous poor obstetric history is an important predictor of outcome (the risk is less with just recurrent miscarriages).

**Fetal risks**

• Risks include early and late miscarriage, in utero death, IUGR. • Fetal outcome may be improved by multidisciplinary management, fetal monitoring (including growth, umbilical and uterine artery Dopplers), appropriate drug therapy, and timely delivery.

• Anticardiolipin antibody is the best predictor of fetal outcome

• Possible mechanisms of fetal injury are recurrent placental infarction and direct cellular injury.

Mnagment of Antiphospholipid antibody syndrome: recommendations

• No thrombosis or pregnancy loss: no treatment or aspirin 75mg.

• Previous thrombosis: aspirin + LMWH.

• Previous recurrent 1st-trimester miscarriages: aspirin +/– LMWH.

• Previous IUD or IUGR or severe pre-eclampsia: aspirin + LMWH.

Start aspirin when pregnancy confirmed; LMWH when fetal heart seen. Consider stopping heparin if 24wk uterine arteryDoppler is normal.

Rheumatoid arthritis

This is more common in women than men, with an incidence of 1:1000– 2000 pregnancies. Characterized by symmetrical chronic infl ammation and destruction of synovial joints. Autoantibodies are formed to immunoglobulins, which are deposited as immune complexes in the synovial fluid and elsewhere. It is a multisystem disorder with extra-articular features including anaemia, nodules, carpal tunnel syndrome, and eye and lung involvement.

**Maternal risks**

• The condition improves in pregnancy in 75% of cases, but flare-up is common in the puerperium.

• At this age atlantoaxial subluxation rarely causes problems during intubation.

**Fetal risks**

There is usually no adverse effect on pregnancy unless the woman is anti-Ro +ve or has antiphosphlipid antibodies (5–10%).

Drugs used in the treatment of autoimmune diseases **Safe** to continue in pregnancy

• Paracetamol. • Steroids.

Hydroxychloroquine.

• Sulfasalazine (in conjunction with 5mg folic acid). • Azathioprine.

• Biological agents, such as infliximab (until 3rd trimester as effect on neonatal immune system is unknown).

Discontinue/**avoid** in pregnancy

• NSAIDs: oligohydramnios, premature closure of ductus arteriosus and neonatal haemorrhage especially with 3rd-trimester use.

• Gold: teratogenic effect seen in animals only.

• Penicillamine: connective tissue abnormalities only in high doses.

• Cyclophosphamide (alkylating agent): risk of leukaemia.

• Methotrexate (folate antagonist): causes miscarriage and congenital anomalies.

**MYASTHENIA GRAVIS**

Uncommon condition; highest incidence in women of childbearing age. It is caused by autoimmune disruption of nicotinic acetylcholine receptors at the skeletal muscle motor end plate, leading to muscle weakness and fatigue. 90% have acetylcholine receptor antibodies. Muscles affected include eyes (ptosis, diplopia), face, neck, limbs, and trunk. Diagnosis confi rmed by prompt, transient improvement in muscle strength with Tensilon test. Condition can be worsened by infection, hypokalaemia, exercise, emotion, and drugs (aminoglycosides, MgSO 4, local anaesthetic, β -blockers, β -agonists, narcotics, and neuromuscular blocking drugs).

**Effect of pregnancy on myasthenia**

• No change 60%, improvement 20%, deterioration 20%.

• There is no consistent effect between pregnancies.

• Symptoms commonly worsen post-partum.

• Hyperemesis, delayed gastric emptying, increase volume of distribution of drugs, increase renal clearance can lead to subtherapeutic drug levels.

• Increased doses of anticholinesterases may be required as pregnancy advances

• Parenteral anticholinesterases should be given in labour to avoid absorption problems.

**Effect of myasthenia on pregnancy**

• Preterm delivery, polyhydramnios, and IUGR are all increased. • The 1st stage of labour is not prolonged (the smooth muscle of the myometrium is not affected by the condition).

• In the 2nd stage there can be skeletal muscle fatigue; instrumental delivery may be required to prevent maternal exhaustion.

• Neonatal myasthenia can occur following delivery in 10–20% of babies:

• it results from transplacental passage of maternal antibodies. **MgSO 4** is contraindicated for treatment of eclampsia in myasthenia.

**Management**

• Inform neurologist, paediatrician, and anaesthetist of pregnancy.

• The usual treatment options have all been used in pregnancy: • long-acting anticholinesterases (e.g. pyridostigmine)

• immunosuppression: steroids, azathioprine

• plasmapheresis

• thymectomy.

THE END