Maternal SLE with ANA, anti-Ro/ SSA and anti-La/ SSB antibodies and fetal congenital heart block

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• Pregnancy among the anti-SSA/SSB-La positive women is commonly associated with different kinds of complications such as renal involvement, proteinuria and preterm delivery (1).

• Congenital autoimmune atrioventricular (AV) block is usually seen in association with autoimmune antibodies in mother that cross the placenta and damage the AV node of fetus. The incidence of CHB is 2% in cases of maternal anti-Ro/ SSA antibody positivity, 3% when both anti Ro/SSA and anti La/SSB are positive. The risk of recurrence is 9 times higher in the subsequent pregnancies (2).

• Complete congenital fetal heart block related to maternal anti-Ro/SSA autoantibodies typically develops between 20 and 24 weeks of gestation. CHB with a structurally normal heart is frequently associated with maternal autoimmune antibodies to Ro/SSA and La/SSB.

Aim and objectives :
• To know the incidence of fetal CHB in patients of SLE who had ANA, anti-Ro/SSA and anti-La/SSB positivity.

Materials & methods :
• Prospective study with data collection for 33 months from Jan 2012 to Sep 2014.

• Pregnant women previously diagnosed as a case of SLE or diagnosed during the present pregnancy were included in the study and were followed up till 6 months post delivery. After diagnosis of SLE, all the mothers underwent blood test for ANA (if not done earlier), anti Ro/SSA and anti La/SSB.

• All the fetuses underwent first or second trimester aneuploidy screening, anomaly scan at 18-20 weeks period of gestation and fetal echocardiography at 18-22 weeks period of gestation. Pregnant mother was treated during antenatal period with dexamethasone (4 mg/ day) after detection of fetal congenital heart block and all her previous medications (if any) were continued throughout during pregnancy.

• Data have been collected regarding the following aspects: Socio-demographic data; Maternal characteristics in current pregnancy; Indication of delivery; Mode of delivery; Apgar score and NICU admissions.

Results :
• Total number of deliveries were 9115 during the 33 months study period and makes the incidence of SLE was 0.14%. 12 out of 13 SLE patients had ANA positive status. 06 patients had Anti Ro/ SSA and 05 patients had Anti La/ SSB positivity.

• Among the Anti Ro/ SSA and Anti La/ SSB positive patients only 02 had fetal congenital heart block (Table 2) and both the fetus had complete heart block and one of them required permanent pacemaker placement at 5 months of age.

Discussion :
• Total number of deliveries were 9115 during the 33 months study period and makes the incidence of SLE was 0.14%. 12 out of 13 SLE patients had ANA positive status. 06 patients had Anti Ro/ SSA and 05 patients had Anti La/ SSB positivity.

• Among the Anti Ro/ SSA and Anti La/ SSB positive patients only 02 had fetal congenital heart block and both the fetus had complete heart block and one of them required permanent pacemaker placement at 5 months of age.

• The frequency of CHB in a primigravida with positive antibodies is 1.75%; however, the recurrence rate in subsequent pregnancies is about 2-3 times higher, i.e., around 20% (3). Risk factors for recurrence other than a previous child affected with CHB are positive anti-Ro/SSA and anti-La/SSB antibodies (3), and the presence of human leukocyte antigen-DR3 in the mother (4).

• Fetal congenital heart block was diagnosed in two fetuses at 34 w and 24 w period respectively. The fetus which was diagnosed CHB at 24 weeks of POG, received antenatal corticosteroids in the form of tab dexamethasone 4mg/ day. Both the fetus had complete congenital heart block as detected by fetal echocardiography which was confirmed by neonatal echocardiography after delivery.

• Regular and close monitoring for heart block and transplantal therapy with fluorinated steroids (dexamethasone) have shown satisfactory results at first evidence of heart block and it is beneficial in first and second degree heart block but once fetal third-degree block is detected, it is irreversible regardless of treatment (2).

• For treatment of CHB early pacemaker insertion may be required in some newborns and permanent pacemaker placement is eventually needed in most children with congenital heart block.

Conclusion :
• Most of the fetal congenital heart blocks are associated with maternal anti-Ro/ SSA and anti-La/SSB antibodies.

• Treatment by steroids may improve the outcome in early stages of fetal CHB and delivery should be planned in a tertiary care centre where pacemaker placement facility is available.

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