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Original Research Article

SLE during pregnancy, maternal and perinatal outcome in teritary hospital

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ABSTRACT

Background: SLE is an autoimmune disease most frequently found in women of child bearing age and may co-exist with pregnancy. Its multisystem involvement and therapeutic interventions pose a high risk for both the mother and the foetus. Disease flares in pregnancy pose challenges with respect to distinguishing physiologic changes related to pregnancy from disease related manifestations. The present study analyzes the fetomaternal outcome of pregnant women with SLE.
Methods: An analysis of fetomaternal outcome of pregnant women with SLE during April 2015 to May 2016 at JSS hospital.
Results: During the period from April 2016 to May 2016, 3773 deliveries were conducted in the department. Eleven pregnant women with SLE were followed up during this period, giving an incidence of 0.29/1000 deliveries. A high rate of lupus flare during pregnancy was found in the current study. Even among women in remission for more than six months before pregnancy, the rate of lupus flare was not low (27%). Also other complications seen were pre-eclampsia 54.54%, HELLP syndrome in 9.09% , PPH in 50%, polyserositis seen in 9.09% and one maternal death was seen (9.09%). No neonate suffered from heart-blocker however there was 75 % NICU admissions among live borns.
Conclusions: Advancing technology and better understanding of the maternal-foetal relationship in lupus have improved outcomes in lupus pregnancies over the last decade. The multisystem nature of the disease, the severity of the organ involvement needs to be assessed and a multidisciplinary approach is required for its diagnosis and successful management.

Keywords: Maternal outcome, Perinatal outcome, Pregnancy, SLE

INTRODUCTION

Systemic lupus erythematosus (SLE) is a common autoimmune disease and predominantly affects fertile women. The usual disease onset is in the third to fourth decades of life, in the reproductive years.[1,2]

Some previous studies indicated that pregnant women with SLE are at a higher risk of adverse pregnancy outcomes.[3-5] The other important concern is the impact of pregnancy on SLE. Aberrations in pregnancy-related maternal immune adaptations are likely contributors for this. However, there has been a trend towards more favourable outcomes.

Pregnancy and its outcome is a major concern to most SLE patients. SLE may also be associated with secondary APS (anti-phospholipid syndrome) which is a multisystem disorder characterized by recurrent abortions and also other systemic manifestations.[6] They are at higher risk for exacerbations of the disease during pregnancy like spontaneous abortions, intrauterine foetal

death, pre-eclampsia and eclampsia, preterm delivery and intrauterine growth restriction. Also queries regarding the safety of various drugs used are often raised. The diagnostic criteria of SLE, if first suspected during pregnancy are not different from those of non-pregnant women.[7]

The prognosis for both mother and child is best when SLE has been quiescent for at least six months prior to the pregnancy.[8] Disease flares during SLE pregnancy pose challenges with respect to distinguishing physiologic changes related to pregnancy from disease-related manifestations.[9] Thus, a multidisciplinary approach with close medical, obstetric, and neonatal monitoring is necessary to optimize both maternal and fetal outcomes.

As we know, there is a paucity of data on pregnancy of Indian women with SLE. The aim of this study was to evaluate the maternal and fetal outcomes of pregnant women with SLE. The present study analyzes the feto-maternal outcome of pregnant women with SLE.

METHODS

Study was done at JSS Medical College and Hospital, Mysore. An analysis of feto-maternal outcome of pregnant women with SLE was done during April 2015 to May 2016. Pregnancy associated with SLE, diagnosed/referred during antenatal check-up at JSS Hospital, Mysore were source of data.

Inclusion criteria

We conducted a prospective study in order to determine planned pregnancy outcome in systemic lupus erythematosus followed in a tertiary referral centre. Once patient presented with known case of SLE/diagnosed first time with pregnancy councelling done regarding the disease (SLE) its course during pregnancy and delivery and its complication in detail , written consent taken with respect to counseling as well as for study.

Assessment of SLE: A detailed history was taken and general, systemic and obstetric examinations were carried out.

Obstetrician visits are as follows:

- Monthly until 20 weeks,
- every two weeks until 28 weeks,
- weekly after 28 weeks until delivery.

Rheumatologist visits were every 4-6 weeks.

First visit investigations included complete blood count (CBC) with platelets, renal function tests, liver function tests, urinalysis, 24 hour urine protein excretion ,anti-ds-DNA antibody, anti-cardiolipin, lupus anticoagulant, anti-Ro,/SSA antibody, anti-La/SSB antibody, thrombophilia profile were carried out.

During each antenatal visits CBC and platelets, blood glucose, BUN, creatinine, uric acid, AST, and ALT, urinalysis, coagulation profile were carried out. 24-hour proteinuria or protein/creatinine ratio was done if preeclampsia or lupus nephritis was suspected.

Foetal monitoring included: a) monthly ultrasound and doppler velocimetry studies after 24 weeks: for evaluation of fetal growth, amniotic fluid, and umbilical artery (fetal-placental flow), b) uterine artery evaluation at 24 weeks: screening tests for preeclampsia and intrauterine growth restriction c) fetal ECHO at 24 and 30 weeks d) CTG was performed on a weekly basis after 32 weeks.

Intervals of the visits and frequency of laboratory tests may be frequent in case of progress in disease activity or suspected complications like preeclampsia, flares etc. During each visit we looked for signs and symptoms of organ damage, dermatological changes , musculoskeletal damage, hematological changes, kidney and nervous system. All drugs administered pre-conception, during pregnancy and puerperium were recorded.

Outcome measures

The maternal outcome was noted in terms of the mode of termination of pregnancy, maternal complications and maternal end result till 1 montth post natally.

Fetal outcome was assessed by perinatal morbidity and mortality, need for admission in NICU, and neonatal end result till 1 month post natally.

RESULTS

During the period from April 2016 to May 2016, 3773 deliveries were conducted in the department. Eleven pregnant women with SLE were followed up during this period, giving an incidence of 0.29/1000 deliveries. 72% (8/11) were between 20 and 30 years of age and 27%(3/11) were between 30 and 40 years of age. Among 11 patients 63% (7/11) had remission for > 6 months before pregnancy, 27% (3/11) patients had SLE disease activity in the six months before pregnancy and 9% (1/11) had new onset SLE during pregnancy.

Table 1: Pregnancy outcome.

Outcome	Number(n=11)	Percentage
Mode of delivery	8	72.72%
Vaginal	2	25%
Caesarean section	6	75%
Aborted		
Spontaneous	2	27.3%
Induced	1	-

Table 2: Maternal complications.

Maternal complications	Number(n=11)	Percentage
Spontaneous abortions	2	18.18%
Induced abortion	1	9.09%
Gestational hypertension	2	18.18%
Pre-eclampsia	6	54.54%
Eclampsia	0	0
HELLP syndrome	1	9.09%
SLE Flare	2	18.18%
Mild to moderate	1	9.09%
Severe	2	18.18%
SLE flare in	1	9.09%
Antepartum period	7	87.5%
Postpartum period	4	50%
Preterm labour		
Post partum haemorrhage	1	18.18%
Oligohydromios	1	9.09%
Polyserositis	1	9.09%
Death		

Table 3: Perinatal outcome.

Outcome	Number(n=8)	Percentage
Born alive	8/8	
Stillborn	0	100%
Early neonatal deaths	1/8	8.33%
Pre term deliveries	5/8	12.5%
Term deliveries	2/8	62.5%
Admission to NICU	6/8	25%
Reason for NICU admission		75%
Prematurity	5/8	62.5%
IUGR	1/8	12.5%
Congenital neonatal lupus	0	
Congenital heart block	0	

DISCUSSION

The peak incidence of SLE occurs between the ages of 15 and 40 years, with an estimated female-to-male incidence of 9:1.[10]

In the current study among 11 patients, 63% (7/11) had remission for >6 months before pregnancy, 27% (3/11)patients had SLE disease activity in the six months before pregnancy and 9% (1/11) had new onset SLE during pregnancy. Only 25% pregnancies achieved full-term deliveries and 62.5% achieved preterm deliveries. In our study shows new onset SLE occurred during the third trimester of pregnancy, there was a better outcome. A high rate of lupus flare of 27 % was found in the current study. Even among women in remission for more than six months before pregnancy, the rate of lupus flare was not low. Also other complications seen were pre-eclampsia 54.54%, HELLP syndrome in 9.09%, PPH in 50%, polyserositis seen in 9.09% and one maternal death was seen (9.09%). Fortunately, psychiatric and central nervous system manifestations and irreversible renal failure were not found during pregnancy in our study.

Table 4: Therapy of SLE patients during pregnancy and postpartum.

Causes of jaundice	Number (n=11)	Percentage
During pregnancy-Oral prednisone	11	
- iv methylprednisolone	0	100%
-iv hydrocortisone		-
-Anti-hypertensive agents	8	72.72%
-Low molecular weight heparin	7	63.63%
-Hydroxychloroquine		72.72%
-Hemodialysis	8	100%
-Plasmapheresis		
Postpartum	11	
- Hydroxychloroquine	11	
-Prednisone/prednisone	11	100%
-Cyclophosphamide	0	
- Methotrexate	0	100%
-Azathioprine	2	18.18%

Previous studies have shown poor pregnancy outcome in women with SLE.[1-5,11] The pathogenesis is complex and not completely clarified. Risk factors of pregnant loss in women with SLE include active SLE, new onset SLE during pregnancy, aPLs, hypocomlementemia, anti-dsDNA antibodies, thrombocytopenia, hypertension and lupus nephritis.[1,2,12,16] A new study based on 992 SLE patients with 2026 pregnancies suggested that thrombocytopenia, aPL antibodies and anti-SSA antibody are associated with fetal loss in Chinese women.[17] Although women with SLE have an increased risk of adverse outcomes, patients in remission or stable mild/moderate SLE might have favorable outcomes.[1,2,18] In the current study, 63.63% pregnancies of women in remission for more than 6 months had live born infants. Apart from SLE activity, aPLs and anti-Ro/SSA antibody usually are considered highly associated with fetal loss.[1,2,15] The results of the current study also support that SLE disease activity in the six months before pregnancy is a risk factor of lupus flare and fetal loss. No neonate suffered from heart-blocker however there was 75% NICU admissions among live births.

Previous studies reported varied widely rate of lupus flare during pregnancy.[1,2] Lockshin et al reported that pregnancy does not exacerbate SLE.[19,20] In several prospectively studies, increased rates of lupus flare (30.8% - 65%) during pregnancy were reported.[3,12,21-23] In some studies, the rates of lupus flare were relative lower,

still 19.4% - 28.3% patients suffered from lupus flare during pregnancy or post-delivery.[1,2,24]

The results of the current study indicated that SLE flare is common in pregnant women with SLE. In our study among 11 patients mild to moderate flare was seen in 18.18% and severe SLE flare was seen in 9.09%.

Unfortunately, there was one maternal death . In patients with remission of more than six months, the prevalence of lupus flare is significantly lower. Our result supports that planned pregnancy after remission of SLE had better maternal and perinatal outcome.

New onset SLE during pregnancy can be considered as SLE activity and might be associated with worse outcome.[25] However, the results of the current study indicated that new onset SLE during the third trimester of pregnancy had better outcome.

CONCLUSION

Advancing technology and better understanding of the maternal-foetal relationship in lupus have improved outcomes in lupus pregnancies over the last decade. The multisystem nature of the disease, the severity of the organ involvement needs to be assessed and a multidisciplinary approach is required for its diagnosis and successful management.

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