

MATERNAL AND FETAL OUTCOME IN PREGNANCIES WITH SLE - A PROSPECTIVE STUDY OF 40 CASES

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ABSTRACT: Pregnancy and child birth in SLE patients can be complicated by disease activity, lupus nephritis, gestational diabetes, hypertensive disorders, intrauterine growth retardation, placental abruption, intrauterine and neonatal death, birth asphyxia, neonatal lupus and maternal mortality. **AIMS AND OBJECTIVES:** To find out 1) The most common complications and their incidence. 2) Maternal and fetal outcome in SLE patients during pregnancies. Study design; Prospective observational study. **MATERIALS AND METHODS:** Patients are enrolled for the study from pregnant mothers with known as well as newly diagnosed SLE who are attending outpatient department of obstetrics and gynecology department of Institute of maternal and child health, Calicut Government Medical college from 2011 February to 2012 June (18 months). Data collected from available past medical records, interview, physical examination, progress records and laboratory investigations of patients using predesigned proforma. **RESULTS:** Of the total 40 patients enrolled in the study, 45% were in the age group 26-30. 25% had one abortion in the past and 2 patients had 3 abortions. 65% had the disease for more than 6 years. Prior to the present pregnancy, 95% patients were in remission. During the present pregnancy 25 % patients had active lupus nephritis and 20% had flare. 25% and 75% patients had gestational diabetes mellitus and hypertensive disorders respectively. The incidence of intra uterine growth retardation was 45%. Placental abruption occurred in 10% pregnancies. The incidence of intrauterine death (25%) was higher than that of neonatal deaths (10%). 20% babies had birth asphyxia and the incidence of low birth weight was very high (60%). 10% mothers had flare and 10% babies neonatal lupus. Maternal mortality was 5%. **CONCLUSION:** The study highlights the increased incidence of complications associated with pregnancies in SLE and thus the need for high quality care for better maternal and fetal outcome.

KEYWORDS: SLE, Maternal outcome, fetal outcome.

INTRODUCTION: SLE is an autoimmune connective tissue disorder that affects many organs including skin, joints, kidneys, lungs, liver, nervous systems etc. Course of the disease is characterized by periods of relapses and remissions.¹ The incidence of SLE has been estimated as between 1.8 and 20 cases per 100,000 per year. More than 90% of patients are women. Usual age of onset is between 15 and 45 years of age.² It has predilections for reproductive age group women and is frequently encountered in pregnancies.³ Women are at increased risk for infertility, recurrent pregnancy loss, placental insufficiency, IUGR, preterm birth, still birth and neonatal deaths. Majority of the exacerbations are seen to occur in patients in the first trimester.⁴ There is an increased risk of flare up of disease and thrombosis during pregnancies and post-partum.⁵ Pre-

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existing disease activity plays a large role in SLE flare during pregnancy. Flares are most likely in women who discontinued maintenance therapy before pregnancy and had a history of more than 3 severe flares prior to pregnancy. Transmission of auto-antibodies from mother to fetus is also noticed. Preeclampsia and eclampsia are part of the spectrum of high blood pressure, or hypertensive, disorders that can occur during pregnancy.⁶ At the mild end of the spectrum is gestational hypertension, which occurs when a woman who previously had normal blood pressure develops high blood pressure when she is more than 20 weeks pregnant. About 15% to 25% of women with gestational hypertension will go on to develop preeclampsia and eclampsia. It is well known that the risk of adverse fetal outcome is increased in pregnancies complicated by lupus.⁷ The frequencies of fetal growth restrictions, frequent abortions and stillbirths are increased in women with lupus.

AIMS AND OBJECTIVES: To find out 1) the most common complications and their incidence and 2) maternal and fetal outcome in SLE patients during pregnancies.

MATERIALS AND METHODS: The study was a prospective observational study conducted at the department of Obstetrics and gynecology Government medical college Calicut from 2011 February to 2012 June (18 months). The study was conducted in patients after excluding patients who did not satisfy the inclusion criteria. 4 patients who were not maintaining regular antenatal visits and 2 patients who did not report for follow up were excluded from the 46 patients who were enrolled initially for the study. Data was collected by interviewing patients, reviewing their records performing detailed clinical examinations relevant investigations and follow up. All the patients were examined for dermatological, renal, neurological, pulmonary and cardiovascular manifestations. Detailed obstetric examination was done and pregnancy complications like preeclampsia and IUGR were evaluated. Routine obstetric investigations like CBC, ESR, 24 hour urine protein, LFT, RFT, along with relevant investigations specific to the disease were performed. Periodic USG assessment of fetal growth was evaluated. All cases were followed up through delivery and 3 months post-partum. The neonates also were followed up for any complications. Relevant investigations of neonates like ECG were evaluated. Obstetric out come as well as disease activity during pregnancy and puerperium were also evaluated.

RESULTS: 45% of the patients were in the age group 26 to 30 years. 20% each were in the age group 21 to 25 and 31 to 35.10% were in the age group 36 to 40 and 5% in the age group 16 to 20.85% of pregnant women with SLE were in the low SES and the remaining 15% middle SES. 25% had single abortion and 5% had 3 abortions. The duration of the disease was 6 to 10 years in 40% of the patients. 35% of the patients were suffering from the disease for 1 to 5 years and 25% for more than 10 years. 95% of the patients were in remission prior to pregnancy and 5 % were in flare.55% of the patients was in remission during pregnancy and 25% of the patients were suffering from lupus nephritis followed by flare in 20% of the cases (Table-1). 25% of patients had gestational diabetes mellitus out of which 15% were on diet control and 10% were on insulin. GDM was absent in 75% of the patients. 30% of the patients had severe pre eclampsia. Mild preeclampsia was noticed in 20% of the patients. 10% of the patients had

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Gestational hypertension 10% had chronic hypertension and 5% had eclampsia (Table-2). Hypertensive disorders were absent in 25% of the populations. 40% of the patients showed mild IUGR, and 5% IUGR with oligohydramnios (Table-3). IUGR was absent in 55% of the patients. 90% of the patients did not show abruptio placenta, 5% each grade 0 and grade 1 abruptio. (Table-4). Intra uterine death was noticed in 25% of the patients. In the study 20% were born asphyxiated. Majority of the babies weighed 2.01 to 3 Kg. In the study 15% of the babies weighed less than 1 kg, 5% between 1 and 1.5 kg 15% between 1.5 and 2 kg and 25% between 2.01 and 2.5 Kg. 25% between 2.51 and 3 Kg and 15% more than 3 kg. Neonatal deaths were observed in 10% of the cases. Neonatal lupus was seen in 10% of the patients. Congenital heart block was seen in 5% and skeletal defect was noticed in another 5%. 10% mothers showed post-partum flare. Maternal mortality occurred in 5%.

DISCUSSION: SLE is a chronic multisystem autoimmune disorder affecting in particular women of child bearing age. The impact of SLE on pregnancy and of pregnancy on maternal lupus has been reported by several studies but with variable results. SLE can be detrimental to pregnancies and may cause adverse pregnancy outcome. Conversely pregnancy can cause flare of lupus disease activity. As a result of advances in the understanding pregnancy lupus interactions and better therapeutic options pregnancy outcomes have improved over the last few years. However several studies have shown that maternal and fetal complications can still occur. In our study the incidence of abortion was 30% out of which 2 had 3 abortions. The finding is in agreements with the previous reports. In a study by Agarwal et al⁸ the incidence of abortions was 33.8%. The duration of the disease was 6-10yrs in 40% of the patients. 35% of the patients were suffering from the disease for 1-5yrs and 25% for more than 10yrs. This result is in contrast with other study where majority of the patients showed duration of >11yrs.⁹ 55% patients were in remission during pregnancy. 25% of patients were suffering from lupus nephritis followed by flare in 20% of the patients. This is in contrast to other studies¹⁰ which showed an increased remission of 72%. Our study is in contrast with the other study in lupus nephritis which showed an increased LN [50.5%]. It has been proposed that SLE patients with quiescent renal disease do not have adverse pregnancy outcomes and our results support this finding. Lupus flare in pregnancy was found to be related to adverse pregnancy outcomes including pregnancy loss, preterm delivery and IUGR in our patients, consistent with previous reports. Women with lupus nephritis can have successful pregnancies under the right circumstances; however, they have higher risk of losing the pregnancy and should be monitored very closely and counseled appropriately. The risk of lupus flare is higher if the woman has had active disease in the 6 months prior to pregnancy. Our finding of 25% diabetes mellitus is much higher than the incidence of gestational diabetes in patients without any pregnancy complications. Study by Avalos GE et al¹¹ showed a less occurrence of gestational diabetes mellitus [12.4%]. Only 7% had gestational diabetes mellitus in the study conducted by Buchanan TA.¹² 30% of the patients had severe preeclampsia. Mild preeclampsia was noticed in 20% of the patients, 10% had gestational hypertension, 10% had chronic hypertension and eclampsia occurred in 5% patients. This result is higher when compared to other studies. Agarwal et al showed that hypertensive disorders of pregnancy were seen in 28.5% women, while chronic hypertension was present in 5.6% women. Hypertension is even more common in women with LN and is reported to occur 44% of pregnancies. Rates of fetal loss

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in women with LN have been reported to be higher in women with hypertension compared to those with normal blood pressure. Expectant mothers with lupus have a higher likelihood of developing hypertensive complications of pregnancy and of experiencing preterm birth. SLE may affect the health of the mother and her baby. Pregnant women with SLE are at increased risk of eclampsia and preeclampsia. Among women with renal disease the incidence may be up to 66%. Pre eclampsia/eclampsia was a significant finding in active SLE group. Our study was in consistent with regard to preeclampsia/eclampsia incidence with previous reports of 13 to 35% while in our study an incidence of 55% was noted. 45% of the patients had IUGR which is higher when compared with other studies. In contrast to our results Hamed et al¹³ reported a 9% IUGR rate in women with cutaneous lupus erythematosus compared with 32% in those with SLE. Studies have shown that the main factors contributing to the increased rate of IUGR in patients with SLE are hypertension preeclampsia/eclampsia and low complement level. IUGR is reported in 10 to 30% of patients with SLE. The risk is higher in the presence of active disease and lupus nephritis. Placental abruption is an uncommon obstetric complication with very high perinatal mortality rate. In our study 10% had abruptio placenta which is much higher. Study by Ananth CV¹⁴ showed abruption in 6.5 per thousand births. Placental abruption occur 0.8 to 1% of all pregnancies and 1.2% of twin pregnancies worldwide. In our study intrauterine deaths occurred in 25% of the cases. This is far less than earlier reported rate of 42.8% but more than certain other studies. 11.1% of fetal loss occurred in pregnancies in SLE patients. Live birth rates of 85 to 90% have be reported in recent studies. This change over the decade could be due to awareness among women and the practice of pre-conceptional counseling and delaying pregnancy till the disease is controlled. In our study majority of the babies weighed 2.01 to 3 Kg which is similar to other studies. Agarwal et al showed a mean birth weight of 2.433Kg. Low birth weight at each gestational age is more prevalent in SLE pregnancies when compared to healthy women. Neonatal deaths occurred in 10% of cases which is higher when compared to other studies. In a study by Liu et al¹⁵ neonatal death was 3.6%. In the present study congenital heart block was seen in 5% of the cases and skeletal problems in 5% cases. Neonatal lupus rash was reported to occur in 10 to 25% of newborns with NLS. It is generally photosensitive and is manifest between 4 to 6 weeks of life. 10% of patients had post-partum flare. Post-partum monitoring is essential as many flares and thrombo-embolic complications occurred within 6 months following delivery. Maternal mortality occurred in 5% cases which is consistent with other studies. In a review of 13 studies that reported a total of 17 deaths in the 6 week post-partum period were attributable to SLE and lupus nephritis. In all the cases deaths occurred in the setting of active disease and were attributed to infection 41.25% or disease activity in 29.4%. The remaining deaths were due to pulmonary embolism in 11.8%, pregnancy associated cardiomyopathy in 5.9%, adrenal failure in 5.9%, and undefined in 5.9%. The maternal deaths in our study were due to LN and pulmonary embolism.

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Dis. activity in pregnancy	No. of cases	Percentage
Remission	22	55
Flare	08	20
Lupus nephritis	10	25
Total	40	100

Table 1: Disease activity

Hypertensive disorders	No. of cases	Percentages
GHTN	04	10
Mild PE	08	20
Severe PE	12	30
Chronic HTN	04	10
Eclampsia.	02	05
NO HTN	10	25
Total	40	100

Table 2: Hypertensive disorders.

IUGR	No. of cases	Percentage
Mild IUGR	16	40
IUGR with Oligamnios	2	05
Normal	22	55
Total	40	100

Table 3: Intra uterine Growth retardation.

Abruptio-Placenta	No. of cases	Percentage
Grade-0	02	05
Grade-1	02	05
No Abruptio	36	90
Total	40	100

Table 4: Abruptio placenta

CONCLUSION: Our findings suggest that the fetal and maternal outcome of pregnant women with SLE was similar to the previously published reports of other population groups. Control of disease activity 6 months prior to pregnancy and good maternal and fetal monitoring during pregnancy will go a long way in decreasing fetal and maternal complications.

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