Original Article

Neonatal and obstetric outcome of systemic lupus erythematosus at King Hussein Medical Center, Amman Jordan

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Objectives: To study pregnancy outcome in women with systemic lupus erythematosus (SLE) in regard to preterm delivery, growth restricted babies and the effect of SLE in developing pre-eclampsia.

Methodology: This study was conducted in collaboration between Rheumatology and Antenatal clinics and included 500 pregnancies of healthy women labeled as group 1, and 49 pregnant women with SLE labeled as group 2. Birth weight, pre-mature labour pain and developing pre-eclampsia were looked for.

Results: Women with SLE had more premature deliveries, (25% versus10%, OR 1.97) and had more growth restricted babies at ?5th centile, (20% versus 5%, OR 2.87). SLE women were more prone to develop pre-eclampsia, (10% versus 2%, OR 5.36).

Conclusion: Pregnant women with SLE bear higher risk for premature deliveries, growth restricted babies and higher rates of developing pre-eclampsia. (Rawal Med J 2014;39:449-451).

Key Words: SLE, Pre-eclampsia, Preterm labour, IUGR.

INTRODUCTION

Systemic lupus erythematosus (SLE) is a chronic inflammatory auto-immune disease, characterized by production of auto-antibodies circulating in the blood, affecting various systems. It follows a relapsing and remitting course and varies from mild to severe life threatening presentations.[1-3] It affects female more than male (9:1), and mostly starting at childbearing age.[1-5] The specific etiology of SLE is unknown.

It is well known that pregnancy is highly associated with lupus flare causing irreversible organ damage.[6-10] Although this flare is unpredictable it can be correlated to disease activity 6-12 months prior to conception.[11] A flare up in pregnancy is characterized by articular, hematological and dermatological manifestations, but severe flares may affect major organs mainly the kidneys.[8-13] SLE with or without secondary anti-phospholipid syndrome has been associated with fetal loss, premature babies and intrauterine growth retardation (IUGR).[14-15] In our study, we looked at premature deliveries, IUGR, and pre-eclampsia in pregnant SLE women.

METHODOLOGY

A retrospective and prospective study was held in collaboration between Rheumatology and Antenatal clinic from July 2011to July 2013. It included 49 women, diagnosed to have SLE who got pregnant when disease was in remission, and delivered at King Hussein Medical Center, Amman, Jordan. They were labeled as group 2. They were compared with 500 healthy pregnancies (as control) labeled as group 1. We excluded women having associated diseases other than SLE, such as endocrine disorders, history of gestational diabetes, hypertension or developed hypertension during the first 20 weeks of pregnancy (as this could be secondary to pre-existing hypertension rather than pre-eclampsia). The study had been approved by the Ethics Committee of the Royal Medical Services.

Their obstetric and neonatal outcomes were noted including gestational age at birth, baby's body weight adjusted for gestational age and if their pregnancies were complicated by pre-eclampsia or not. As per antenatal care clinic protocol; regular blood pressure measurement and urine testing were done each visit. SLE patients were followed by rheumatologist and gynecologist, counseled and

evaluated pre conceptual when possible. Ultrasound scans were done as per ante-natal protocol, extra scans were offered when suspicion of fetal compromise appeared. Deliveries that occurred spontaneously before 37 week of gestation were considered premature.

Pre-eclampsia was defined as any new-onset hypertension after 24 weeks of pregnancy (systolic blood pressure ≥140 mm Hg or diastolic blood pressure ≥90 mm Hg) associated with proteinuria with or without evidence of organ involvement. Babies with birth weight at or below the 5th percentile for the corresponding gestational age, (using a United States population reference) were considered intrauterine growth restricted. Data analysis was performed using Z-Test Calculator for 2 Population Proportions and Vassar Stats software calculator.

RESULTS

A total of 500 healthy pregnant ladies were compared to 49 SLE patients. SLE ladies aged 19-32 year, (mean 27±5), while healthy ladies age varied between19 and 47 (mean age 35±10). More than 75% of SLE women were in their first or second pregnancy (Table 1).

Table 1. Age and parity for healthy and SLE patients.

	Group 1 Healthy	Group 2 SLE patients
Number	500	49
Mean age	35± 10	27± 5
Parity □3	100 (20%)	37 (75%)
Parity ≥3	400 (80%)	12 (25%)

Table 2. Pregnancy outcomes in healthy and SLE patients.

	Group 1 Healthy	Group 2 SLE	P value*	OR
Preeclampsia	6 (1.2%)	3 (6%)	< 0.01	5.36
Preterm labour	39 (7.8%)	7 (14.3%)	< 0.1	1.97
IUGR	15 (3.0%)	4 (8.1%)	< 0.01	2.87

*Significant ?0.05

Statistically significant increase in pre-eclampsia and growth restricted babies was found in group 2 than in group 1(Table 2). Cutaneous, musculoskeletal symptoms and lupus nephritis were commonest manifestations of flare during pregnancy (Table 3).

Table 3. Characteristics of SLE patients.

	Number (%)	Disease flare	Pre-eclampsia	Preterm labour	IUGR
Cutaneous	20 (40%)	4	0	0	1
Musculoskeletal	13 (26%)	2	1	1	5
Lupus nephritis	10 (20%)	3	2	5	6
CNS Lupus	2 (4%)	0	0	1	1
Secondary APS	5 (10%)	0	0	0	2

DISCUSSION

SLE pregnant ladies are at higher risk for both medical and obstetric complications during their pregnancy. In comparison to general population, the risk may increase to 20 fold regarding maternal mortality, pre-gestational diabetes, renal impairment, pulmonary hypertension, major infections, thrombotic events and other hematologic complications.[16] Regarding the obstetric complications, the risk of pre-eclampsia, cesarean section, preterm labor and intrauterine growth restriction (IUGR) was increased two- to four-fold higher in women with SLE, especially in patients with chronic hypertension, renal impairment and women on high-dose oral steroids.[14-17] Pregnant SLE women, who started their pregnancy in disease remission, and no major organ involvement, usually had better pregnancy course.

Because Hydroxychloroquine (HCQ) had a protective effects in SLE patients, mainly disease flares and thrombosis especially in pregnant patients.[7] All our patients were on HCQ except those who had contraindications, as drug allergy. Recent studies showed that pregnant women who took HCQ had lower disease activity and had lower prednisone doses at the end of pregnancy.[17-18] However, those who were not on HCQ, had higher disease activity, more flares and required higher doses of steroids.[18]

Our study showed an increase in the incidence of pre-eclampsia by more than 5 folds as well as more than 2 fold greater risk of IUGR. The association of IUGR and premature deliveries in SLE patients is unclear but a possible explanation is that it is linked with pre-eclampsia and placental insufficiency through an auto-immune events.[19-20]

Limitations of our study are the small number of SLE patients, no further follow up, no adjustment for maternal age and parity. Because proteinuria is a common finding in SLE patients, it presented difficulty in diagnosing pre-eclampsia. On the other hand, the close follow up of SLE patients by frequent blood pressure measurement and urine analysis makes early detection of pre-eclampsia possible, as it may pass unnoticed in healthy women.

CONCLUSION

Pregnancy in SLE is associated with premature deliveries, growth restricted babies in utero and carries higher risk to develop pre-eclampsia. We recommend antenatal counseling and close monitoring during the pregnancy. Women are advised to plan their pregnancies when disease is in remission for at least six months.

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