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**Research Article**

# MATERNAL AND PERINATAL OUTCOME IN AUTOIMMUNE DISORDERS COMPLICATING PREGNANCY

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**ABSTRACT**

**Objective:** To study the maternal and perinatal outcome in pregnant women with Autoimmune disorders like SLE, Rheumatoid arthritis, Systemic sclerosis, Sjogrens disease, Scleroderma, autoimmune hemolyticanemia. etc in a tertiary care teaching maternity hospital.
**Method:** A total of 26 pregnant women with various Autoimmune disorders were identified among antenatal women attending the hospital between April 2011 to September 2013. They were evaluated, monitored and followed up with a standardized protocol to assess the pregnancy outcome.
**Results:** Out of total 26 patients with Autoimmune disorders19 cases are diagnosed as SLE, 1 case Sjogrens syndrome, 2 case Systemic sclerosis, 1 case Scleroderma and 3 cases Rheumatoid arthritis. Out of 26 patients 19 have live births of which 12 are preterm and 7 are term deliveries.5 cases had IUD, 2 had spontaneous abortions. Of the 19 cases of SLE 11cases had positive antiphospholipid antibodies, 8cases had Anticardiolipin antibodies and 3 cases had lupusanticoagulant. One baby diagnosed as congenital heart block. One baby died after birth on 2nd day. 12 cases delivered by caesarian section for indications of PROM, oligohydromnios, IUGR...etc. 6 had normal vaginal delivery and one case by forceps delivery.
**Conclusion:** Pregnancy with autoimmune disorders have increased risk of spontaneous abortions, IUD, preterm delivery, small for gestational age, high perinatal morbidity and mortality. Cases managed in tertiary care hospitals have good perinal outcome though there is definite risk of prematurity and small for gestational age.



## INTRODUCTION

Autoimmune disorders are a group of heterogeneous disorders characterized by immunological reaction against auto antigens by auto antibodies, immune complex reaction and auto reactive T lymphocytes (Castellino *et al*). Autoimmune disorders are classified into organ specific disorders and systemic disorders. Systemic autoimmune disorders are commonly known as connective tissue disorders as connective tissues and vascular tissues are primarily affected by immune complex reaction and deposition in these tissues (Saar P Hermann *et al*).

Connective tissue disorders include Systemic lupus erythematosis, Rheumatoid arthritis Systemic sclerosis, Sjogrens disease, Scleroderma, auto immunehemolyticanemia etc. In organ specific disorders antibodies are produced against specific cellular antigens damaging single organ. Autoimmune disorders though considered different have similarities in pathogenic point of view, chronicity of disorders, general symptoms and management. Connective tissue disorders affect predominantly women of child bearing age between the ages of 20 to 45 years (Jameela A.Kari). Pregnancy in women with autoimmune disorders is considered as high risk pregnancy as there is increased incidence of maternal disease flare ups, spontaneous abortions, recurrent pregnancy loss, preterm deliveries, IUD, oligohydromnios, IUGR, infections, increased risk of arterial and venous thrombosis, end organ failures, drug teratogenic effects on the fetus (Federico Mecacci *et al*). Neonatal lupus erythematosis occurs in 1 to 4 % of pregnancies associated with SLE. These babies may present with typical features like lupus dermatitis, congenital complete heart block, thrombocytopenia, cholestaticjaundice etc (Arisenio spinilli *et al*). Sjogrens syndrome is associated with high risk of congenital complete heart block in the fetuses (Bernhard H Singsen *et al*). These women need integrated, multidisciplinary approach in high risk centers addressing all aspects of obstetrics, rheumatology, immunology and neonatology to improve maternal and perinatal outcome. Other auto immune disorders have variable effect on pregnancy. Pregnancy has

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variable effects on auto immune disorders. In SLE flare ups of SLE occur in 50% 0f cases (Steen V D *et al*). In Rhematoid arthritis improvement of symptoms occur in about 70% of cases. In Scleroderma there is increase in maternal and fetal risks with pregnancy (F.Susan Cowchock *et al*).

## METHODS

Among Pregnant women attending high risk clinic at Gandhi medical college and Government maternity hospital, sulthan bazaar, Hyderabad from April 2011 to September 2013pregnantwomen with auto immune disorders complicating pregnancy were identified, evaluated, managed and followed up to assess the maternal and fetal outcome. Patients were counseled regarding progress and outcome of pregnancy complicated with auto immune disorders. They were managed by combined approach of obstetrician and rheumatologist. All cases were reviewed and evaluated with blood pressure, protinuria, complete blood count, urine analysis, anti-ds DNA, anti phospholipid antibodies, lupus anti coagulant, rheumatoid factor and other immunological markers depending on the type of auto immune disorders kidney function tests, liver function tests, serial ultrasound and Doppler examination to assess the fetal growth. Data noted regarding age at conception, gestational age at delivery, outcome of pregnancy, mode of delivery, weight of baby, any features of neonatal complications and treatment received before and during pregnancy. Booked cases were treated with low dose aspirin, LMW heparin and monitored with coagulation profile.

## RESULTS

A total 26 pregnant women with various autoimmune disorders were identified among antenatal women attending op between April 2011 and September 2013.the mean age at conception was 23.6 years. Range being 18 to 37 years.

**Table 1** Diagnosis of various autoimmune disorders.

| Disease | Number of cases |
|---|---|
| Systemic lupus Erythematosis | 19 |
| Systemic Sclerosis | 2 |
| Sjogrens Syndrome | 1 |
| Scleroderma | 1 |
| Rhematoid Arthritis | 3 |

Out of 19 cases of Systemic lupus erythematosis 1 cases gave history of SLE in siblings, 8 cases were diagnosed before pregnancy and 11 cases diagnosed during pregnancy.

**Table 2** Booking Status of Cases

| Boocked cases on treatment | 8 |
|---|---|
| Booked cases not on treatment | 15 |
| Unbooked cases | 3 |

**Table 3** Anti Body Status of Cases

| Antibodies | Number of Cases |
|---|---|
| Anti Nuclear Antibodies (ANA) | 12 |
| Anti Phospho Lipid Antibodies - | |
| Anti Cardiolipin Antibodies Ig M | 8 |
| Anti Cardiolipin Antibodies Ig G | 3 |
| Lupus Anti Coagulant | 3 |
| Rheumatoid Factor | 2 |
| Anti Ss A Antibodies, Anti SS B Anti Bodies | 2 |
| Anti ds dna anti biodies | 3 |
| Anti rnp anto bodies | 1 |

**Table 4** Complications During Pregnency

| Comlication | Number of Cases |
|---|---|
| Preeclampsia | 6 |
| Eclamsia | 1 |
| Chronic hyper tension | 4 |
| Anaemia | 14 |
| Jaundice | 1 |
| Arthralgea | 13 |
| Lupus rash | 3 |
| Thrombocytopenia | 4 |
| Term prom | 2 |
| Preterm prom | 5 |
| Oligohydromnios | 3 |
| Iugr | 6 |
| Polyhydromnios | 1 |

**Table 5** Outcome of Pregnency

| Spontaneous abortion | 2 |
|---|---|
| IUD | 5 |
| Live births | 19 |
| Term live births | 7 |
| Preterm live births | 12 |

One baby died 2 days after birth due to respiratory distress, one baby diagnosed as congenital complete heart block, 2 babies presented with features of neonatal lupus.

**Table 6** Gestational Age at Delivery
Live Births-19

| Gestational Age In Weeks | Number of Deliveries |
|---|---|
| >37 | 7 |
| 34 - 37 | 9 |
| 32 - 34 | 1 |
| <32 | 2 |

IUD -5

| | |
|---|---|
| 32-34 Weeks | 3 |
| <32 Weeks | 2 |

**Table 7** Birth Weight of Fetuses

| Birth Weight in KGS | Number of Babies |
|---|---|
| >2.5 | 6 |
| 1.5 -2.5 | 9 |
| <1.5 | 4 |

**Table 8** Apgar At 5 Minutes

| Apgar AT 5 MTS | Number of Babies |
|---|---|
| 8 - 10 | 8 |
| 6-8 | 5 |
| 4-6 | 6 |
| <4 | NIL |

## DISCUSSION

Autoimmune disorders are not uncommon in women in reproductive age group.SLE is the most common among all auto immune disorders. Though pregnancy is not considered as a contraindication in auto immune disorders there is high rate of relapses, pregnancy related complications and poor perinatal outcome when compared to pregnancies not associated with auto immune disorders (Buyon J .P *et al*). Booked cases who received treatment and follow up have improved outcome compared to unbooked and untreated cases. Le Huong *et al* study reported fetal loss improvement from 18% to 4%.in our study 73% of cases had successful outcome with live births, Jameela *et al* study reported 94% live births, Le Huong *et al*

reported 96%, but high percentage of fetal loss reported in Klienman *et al* study.

In our study incidence of IUGR is 31%, Jameela *et al* 25%, Le Huong *et al* 29%, Aggarwar *et al* 40% and Rehman *et al* 8%. In our study 44% had preterm deliveries compared to 34% in Le Huong *et al* study and 18% in Jameela *et al* study. 11% of cases developed lupus flare ups during pregnancy. Of the 3 patients who developed flare ups 2 had live births and one case had IUD at 30 weeks of gestational age and terminated vaginally by medical induction.

Out of 4 cases with chronic hypertension 3 developed oligohydromnios and IUGR requiring immediate delivery by emergency caesarian section at 32 to 34 weeks of gestation. Hypertension, protinuria, renal parenchymal disease, raised ESR, thrombocytopenia are some of the predictors for poor perinatal outcome (Nathalie Costedout *et al*).

Incidence of congenital anomalies is 2% in Rehman *et al*, 3.8% in our study and no congenital anomalies reported in Jameela *et al* study. Federico Mecacci *et al* reported a 2% to 3% incidence of congenital heart blocks in SS A /SS B Positive cases (Bernhard H .Singsen *et al*).

Systemic sclerosis characterized by anti Ro/SS A are at high risk of congenital heart blocks, idiopathic cardiomyopathy and neonatal lupus (Le Huong D *et al*).

The live birth rate is 73% compared to 94% in Jameela *et al* study. The difference in the successful pregnancy outcome may be due to difference in selection of cases. Pregnency outcome depends on disease remissions before and during pregnancy, receiving treatment or not, antenatal care throughout pregnancy in high risk pregnancy ward, frequent maternal and fetal monitoring for development of complications, early decision in cases with complications and availability of excellent neonatal care.

## CONCLUSION

Pregnancy in women with auto immune diseases though considered high risk and associated with various complications like preeclampsia, eclampsia, anemia, PROM, flare ups, end organ failure if managed with multidisciplinary and integrated approach the maternal and perinatal outcome can be improved with a live birth rate as high as 94% for booked and managed cases though the risk of prematurity still persists.

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