Original Article

Clincial profile and pregnancy outcomes of women with multiple sclerosis

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Abstract

Background: Multiple Sclerosis is a rare disease complicating pregnancy in India and there is very limited literature available from our country. **Objective:** To study the clinical profile, pregnancy and fetal outcomes of women with Multiple Sclerosis. **Methods:** It is a retrospective study done at a tertiary care dedicated obstetric hospital in South India. **Results:** During study period there were 10 women with Multiple Sclerosis with 12 completed pregnancies. There was no pregnancy loss or fetal anomalies. There were no disease relapses during pregnancy or postpartum period. **Conclusion:** Our cohort of pregnant women with Multiple Sclerosis had good pregnancy and fetal outcomes and there were no disease relapses in pregnancy or postpartum period.

Key Words: pregnancy, multiple sclerosis, clinical, outcomes, relapse

Introduction

Multiple sclerosis (MS) is a chronic immune mediated, inflammatory disease of the central nervous system (CNS) resulting in demyelination, gliosis (plaques or scarring) and neuronal loss.[1] Incidence of MS in India is much less compared to the West and most obstetricians in India may not encounter a pregnant woman with MS.[2] Though women who develop MS are in mostly in their reproductive period, we do not have a registry and there is hardly any data of pregnant women with MS from our country. To our knowledge, there has not been a single case series published from India so far. We intend to publish our data of pregnant women with MS and their outcomes.

Methods

This is a retrospective study done in a tertiary level, dedicated obstetric hospital in South India. All women with MS admitted for pregnancy care over a period of 8 years starting from 2013 to 2021 were included in this study. Data was collected from EMR (Electronic Medical Records) and verified with case sheets. All patients had been diagnosed to have MS based on clinical-radiological findings by a qualified neurophysician.

Results

There were ten women with MS during study period **(Table 1)**. We had total of 12 completed pregnancies among these women after diagnosis of MS and one woman was pregnant at the time of anaylsis. Twelve (of 13) conceptions were Spontaneous, none had MS diagnosed during pregnancy and 2/12 deliveries were preterm **(Table 2)**. All caesarean sections (LSCS) were for obstetric indication. None of the patients had significant neurological disability warranting an elective LSCS becuase of neurological status. One pregnancy was associated with fetal growth restriction. All babies were alive and there were no congenital anomalies. There were no pregnancy losses. None of the pregnancies were complicated by a relapse during pregnancy and there was no postpartum relapse in 9 out 12 pregnancies (within one year after delivery) **(Table 3)**. We did not have follow up data for three pregnancies. Three women had relapses after 2–4 years of delivery. Only one woman received interferon beta 1a during pregnancy and one woman was on low dose steroids during pregnancy. One woman stopped Dimethyl fumarate soon after conception (ongoing pregnancy at the time of analysis).

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Table 1: Clinical profile of patients (n =10)

Age range	25 – 34 years
Treatment details (prior to pregnancy)	Steroids – 7 women
	Azathioprine - 1
	Interferon beta 1a – 5 women
	Dimethyl fumarate -1
	Homeopathy treatment - 1
Treatment complications	Interferon beta 1a induced hepatitis - 1
	Pulmonary tuberculosis -1 (probable immunosuppression related)

Table 2: Pregnancy and fetal outcomes

Conception	Spontaneous – 12/13 Intrauterine insemination – 1/13
Foetal growth restriction	1
Gestational diabetes	2
preeclampsia	0
Delivery timing	Preterm – 2/12 (1- 36 + weeks, 1- 33 +weeks)
Mode of delivery	3- spontaneous vaginal delivery 3- assisted vaginal delivery 6- LSCS
Indication for LSCS	Obstetric indiacation – 6 neurological status - 0
Anaesthesia	General – 1 (converted to general due to inadequate spinal block) regional - 5
Pregnancy loss	0
Congenital anomaly	0

Table 3: Relapse of MS (follow up available for 9/12 pregnancies)

During pregnancy	0
Postpartum (within one year)	0
More than one year of delivery	3 (2 to 4 years after delivery)

Discussion

Since late 1300, progressive neurological illness suggestive of MS was observed but it was Jean Martin Charcot who first lectured on clinical features of MS and coined the term in the year 1868.[3] There has been a lot of development in the understanding of pathogenesis and treatment of MS since then! Incidence of MS is very less in India compared to the West. There is good amount of literature on pregnancy and multiple sclerosis from West but there is hardly any published data from India.

Previous observational studies and systematic reviews suggested reduction of relapse during second and third trimesters of pregnancy but increase risk of relapse in postpartum period (3 to 6 months following delivery).[4,5,6,7,8,9,10] However, in our study, there were no relapses during or postpartum period. PRIMS study was the first large prospective study which looked at pregnancy effect on MS.[6] PRIMS study and subsequent cohorts (including EMEMAR study) were among important studies which looked at relapse rate.[6,8] In PRIMS study, an increased relapse rate in the year preceding conception, an increased relapse rate during pregnancy and a higher Kurtzke's Disability Status Scale score at pregnancy onset significantly correlated with the occurrence of a post-partum relapse.[6] In our cohort, none of the pregnancies were associated with these risk factors (except the ongoing pregnancy) which probably explains absence of expected relapses in postpartum period. All pregnancies except for one were spontaneous conceptions and fertility does not seem to be an issue in women with MS. This observation is similar to the literature available on MS and infertility.[11] Only two women were on treatment during pregnancy and it is difficult to draw conclusions regarding effect of immunomodulatory therapy on fetal anomalies and fetal outcomes. From recent data of a large European registry of pregnant women with MS exposed to interferon beta before conception and or during pregnancy, there was no evidence to suggest association with congenital anomalies.[12] Treatment of women with MS needs to be individualized in pregnancy as many immunomodulators registered for usage in MS have limited or no controlled data of safety in pregnancy though there is no evidence of harm for many of the agents. Our cohort had good pregnancy outcomes similar to large cohort studies and a systematic review.[4,8] In a large retrospective cohort study done by Van Der Kop etal, in comparison to the control group, infants of women with MS did not vary much in gestational age or weight, and having MS was not linked to increased rates of vaginal delivery or Caesarean section.[10] Type of neuraxial anesthesia including spinal, epidural or spinal-epidural do not increase disease activity and are considered safe in women with MS.[13] Based on small studies, exclusive breast feeding was earlier considered to have protective effect on postpartum relapse but recent data does not support this observation.[14,15] Limitation of our study was small sample size and lack of follow up data of some patients.

Conclusion

Our cohort of pregnant women with MS had no relapse during pregnancy or in postpartum period and had good maternal and fetal outcomes. Our study adds to the evidence to suggest that women with MS should not be discouraged from planning pregnancy.

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