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Original Research Article

Study of maternal and fetal outcome in HIV positive women on HAART therapy in a tertiary hospital

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ABSTRACT

Background: India has the third largest population of HIV. Moving from single dose nevirapine in labor to use of HAART treatment for all pregnant women and the outcome of the same was the subject of present study.
Methods: Retrospective study of HIV positive pregnant women on HAART treatment admitted in labor room at Karnataka institute of medical sciences from June 2015 to December 2016. A retrospective analytical study of 93 women with HIV positive status on HAART therapy admitted in labor at KIMS was done by collecting data from case records. Baby follow up details were collected from ART center, KIMS.
Results: Parameters studied were maternal and fetal outcomes. Maternal outcome in terms of mode of delivery, morbidity and mortality and fetal outcomes in terms of APGAR at birth, weight of the baby, NICU admission, incidence of meconium, still birth and intrauterine fetal demise, follow up of the babies at 6 weeks, 6 Months and 18 Months for seropositivity.
Conclusions: HAART in pregnant women significantly improved the maternal and fetal outcomes.

Keywords: Fetal outcome, HAART, Maternal outcome

INTRODUCTION

India has the third largest population of HIV. India has an estimated 2.1million people living with HIV. Prevalence of HIV in India is 0.22% in adult population. Adult HIV prevalence in India has shown a steady decline from an estimated peak of 0.38% in 2001-03, 0.34% in 2007, 0.28% in 2012 and 0.26% in 2015 to 0.22% in 2017.[1] The decline reflects the impact of scaled up HIV prevention interventions under National AIDS Control programme (NACP). Overall prevalence of HIV in among antenatal care clinic attendees is around 0.35%.[2] India has an estimated 145000 children <15years infected with HIV and 22000 new infections occur every year. Children account for 7% new HIV infections.[3] More than 90% of HIV infections in children are the result of maternal to child transmission (MTCT).

Untreated MTCT is 15-45% and hence is largest source of infection among young children in HIV transmission.[4] NACP launched prevention of parent to child transmission (PPTCT) OF HIV service in the year 2002 to address HIV burden among children. Single dose nevirapine in labor was the most widely implemented ART regimen.[5] WHO had recommended use of HAART to reduce risk of HIV transmission and improve survival.[6] Introduction of HAART has changed the fate of a child born to HIV positive mothers.[7] From 2014 January all women were initiated on lifelong HAART irrespective of CD4 count and viral load, new-born of these mothers were given nevirapine syrup immediately, extended to 12 months if mother had received <24 weeks of HAART.[8] This study aims to know the results of HAART therapy on maternal and fetal outcome.

METHODS

Retrospective data analysis for duration of 19 months from June 2015 to December 2016 of women with HIV positive status admitted to Karnataka institute of medical sciences (KIMS), Hubli for labor. Case record details of all HIV positive women admitted in labor were analyzed. Details in terms of age parity, gestational age, booking status, districts where she was booked, details of ART, any antenatal complications, any other medical disorders, onset of labor, rupture of membranes and mode of delivery were collected. Any postpartum complications were noted. Fetal outcome in terms of APGAR score at birth, birth weight, meconium aspiration and NICU admission were collected. Details of follow up of babies of mothers booked at Dharwad were collected from ICTC center, KIMS, Hubli. Newborns received nevirapine syrup for 6 weeks/ extended to 12 weeks if the duration of HAART of mother is less than 24 months. Newborns were advised exclusive breast feeding. All newborns were tested for HIV at 6weeks, 6 months and 18 months.

Inclusion criteria

- All pregnant women with HIV positive status on HAART admitted to KIMS, Hubli for labor.

Exclusion criteria

- Any chronic medical disorders, full blown AIDS and HIV positive women not on HAART were excluded.

Statistical analysis

Simple statistical methods like mean, percentage and proportion were utilized to analyze results.

RESULTS

A total of 93 women fulfilled the inclusion and exclusion criteria.

Table 1: Age distribution.

Age	Number of mothers with HIV positive babies
<20	Nil
20-30	67
>30	26

Majority of women belonged to young reproductive age group 20 to 30years (Table 1).

Table 2: Parity distribution.

Parity	No. of cases
G1	33
G2	40
G3 and more	20

Out of 93 women, 33 cases were primigravida, 40 cases were second gravida, and remaining 20 were gravida 3 and above (Table 2).

Table 3: Period of gestation.

	No.	Percentage
Preterm	15	16.12
Term	76	81.72
Post term	1	1.07

Fifteen women of 93 women (16.12%) had preterm labor. HAART therapy has significantly reduced incidence of preterm labor (Table 3).

Table 4: District wise distribution.

District	Number of women
Dharwad	52
Gadag	16
Koppal	7
Belagaum	7
Haveri	9
Mudhol	1
Uttar kannada	1

Being a tertiary care centre, there were cases from outside Dharwad district. Though majority of women were from Dharwad district (n=52), there were significant number of women from other districts (n=41).

Table 5: Birth weight.

	No.	Percentage
<2kg	5	5.37
2-2.5kg	64	68.08
>2.5kg	25	26.59

Out of 94 babies born (1 twins), only 5 babies weighed <2kg, 68% of the babies were between 2-2.5kg, but they did not fit into the criteria of IUGR. Mean birth weight was 2.8kg (Table 6).

Table 6: Mode of delivery.

	No.	Percentage
PTVD	11*	11.82
FTVD	54	57.44
Outlet forceps	3	3.19
LSCS	21	22.34
VBAC	1	1.06
LSCS with BAT	4	4.25

*3 still births and 1 intrauterine fetal demise (94 babies, as one woman delivered twins).

57.44% of women had FTVD. Cesarean section was done only for obstetric reason as all women were on HAART. 26.68% of women underwent cesarean section. Authors had one case of VBAC delivery.

Outlet forceps delivery was done in 3 cases. Authors had 3 cases of still birth and one case of intrauterine fetal demise.

Table 7: Antenatal complications.

	No.	Percentage
PROM	11	11.7
IUGR	5	5.36
Preeclampsia	10	10.7
Oligohydramnios	1	1.07
Antepartum eclampsia	1	1.07
Mild to moderate anaemia	16	17.2
Severe anaemia	5	5.36
IUD	1	1.07
Placenta previa	2	2.14
Abruptio placenta	-	-

Incidences of antenatal complications were similar to normal population. Introduction of HAART therapy significantly reduced incidence of PROM and IUGR. Anemia was observed among 21 women (22.56%), preeclampsia in 10 women (10.7%). There were 2 cases of placenta previa.

Post-natal complications

Five patients had atonic PPH and were managed medically. There were no cases of puerperal sepsis, postpartum depression.

Table 8: Fetal outcome.

	No.
APGAR score at 5mins >8	83
APGAR score at 5mins <8	6
Meconium stained liquor	15
NICU admissions	6
IUD and stillbirth	4

Out of the 6 NICU admissions two had transient tachypnoea of new-born (TTN), one had acute respiratory distress of new-born (ARDS), other three had Meconium aspiration syndrome (MAS). Five babies recovered and were discharged, and one baby was taken against medical advice.

Babies follow up

Babies of 52 women delivered at KIMS booked in Dharwad district was followed up by ICTC, KIMS, Hubli. Seropositivity was seen in all babies at 6 weeks, 6 months and 18 months.

Only one baby was seropositive at 6th month. Out of babies of 52 women followed up, 6 were lost for follow up, 4 babies died, one baby was seropositive at 6 months and remained seropositive at 18months and is on ART.

DISCUSSION

Being the third largest population of HIV positive women, it is of utmost importance to reduce mother to child transmission to prevent adding further to this burden. Largest source for potential new young children becoming HIV positive is maternal to child transmission. In present study, ages of the largest group of HIV positive pregnant women were between 20-30 years. Caesarean section was done only for obstetric indications as all patients in present study were on HAART. Authors also had one case of vaginal birth after caesarean section delivery (VBAC). Preterm delivery is one of the major complications of HIV infection in pregnancy attributed to placental infection. In present study HAART therapy has significantly reduced incidence of preterm labor. Maximum deliveries were term babies (76 out of 94). Incidence of preterm delivery was similar to HIV negative women.

Fekadu et al, found that rate of preterm birth was 10% in women who were started on HAART before pregnancy.[9] In present study, incidence of preterm labor was 16%. Exclusive breastfeeding was practiced among seropositive women with live births in accordance with NACO guidelines. Authors had 64 babies with the birth weight of 2-2.5kg (68.08 %) which was lower than average birth weight of babies delivered to HIV negative mothers at our center.

Olagbuji et al, reported increased incidence of IUGR, preterm birth in HIV infected women on HAART.[10] Haeri et al, in his study compared outcome of HIV infected women on HAART and HIV uninfected women had found similar maternal outcome, more SGA babies in HIV infected women, but was attributed for higher tobacco or cocaine use.[11] Neonatal outcomes were otherwise similar, HAART did not increase maternal complications. This was in accordance to present study Vatsla et al, reported decreased incidence of preterm birth and IUGR in HIV infected women on ART.[12] Authors had 3 stillbirths (3.1%) and 1 IUD (1.06%) out of 94 deliveries. Out of 93 babies of women delivered at KIMS, 46 babies belonging to Dharwad district was followed up at KIMS ART center. Seropositivity was checked at 6weeks, 6months and at 18months. One baby was seropositive at 6th month. (Source of data from ART center at KIMS, Hubli).

CONCLUSION

Authors follow a policy of universal screening after adequate counselling protest and post-test for all antenatal women coming to our centre and also those in labor if they have not previously had a test. Hence on putting the women on HAART therapy early on in pregnancy or before pregnancy has given a better outcome for babies and mother at our centre. Use of HAART in reducing MTCT is one of the best successes.

Team approach involving an experienced obstetrician, neonatologist and physician gives hope of having a healthy uninfected baby for HIV infected mothers.

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