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Maternal and Fetal Outcome in HIV Infected Pregnant Women, 5 Years Study At Tertiary Hospital

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Abstract:
Introduction: *Acquired immunodeficiency syndrome (AIDS) is currently one of the worst global health pandemics in recorded history.Due to the implementation of prenatal HIV testing and highly active antiretroviral therapy (HAART) there is increase in number of people living with chronic HIV infection and thus associate with co-morbidities affecting pregnancy.*
Aim And Objectives*:*
1. *To know maternal and fetal outcome in HIV infected pregnant women.*
2. *The incidence of HIV infected pregnancy.*

Material And Method: *A retrospective study carried at Cheluvamba Hospital, Mysore Medical College and Research Institute during 2009 to 2013. The hospital records of all HIV infected pregnant women were collected. Mother and Babies follow up details were obtainedfrom ICTC centre.*
Results: *Total deliveries 63959. Of these 334 pregnant women were HIV positive. 59.3% primegravida. 73.1% had CD4 count of >200. 59.2% wereprimegravida. 10.2% were not on Antiretroviral Therapy (ART). 73.7% delivered vaginally. 50.8% hadbaby birth weight of >2.5 kg. 65.2% preferred breast feeding. 97.8% neonates received nevirapine .65infant died.6babies turned HIV positive.*
Conclusion: *Care of HIV infected pregnant women is enhanced by having multidisciplinary team approach frequent visits and discussion regarding adherence to medication regimens to reduce perinatal transmission and to prevent drug resistance.*
Keywords: *Antiretroviral Therapy (ART), HIV in pregnancy,*

I. Introduction

Acquired immunodeficiency syndrome (AIDS) was first described in 1981, and it is currently one of the worst global pandemics in recorded history. Worldwide, it was estimated in 2012 that there were 35.3 million infected persons with HIV/ AIDS: 2.3 million new cases of HIV infection and 1.6 million HIV related deaths (UNAIDS, 2013)[1].

India had an estimated 2.1 million persons living with HIV in 2011.HIV prevalence among adult population in India has declined consistently over last one decade from 0.4% in the year 2000 to 0.27% in 2011. This decline reflects impact of scaled up HIV prevention interventions under the National AIDS Control Programme (NACP).On the contrary reduction in new HIV infections among children is only about 35% .Without any intervention the risk of transmission is between 20 to 45%. NACP has launched Prevention of Parent to Child Transmission (PPTCT) of HIV service in the year 2002,to address burden of HIV among children.Thisincludes HIV testing service to all pregnant women enrolled into antenatal care along with provision of ARV prophylaxis [2]

The introduction of highly active antiretroviral therapy (HAART), choice of delivery based on viral load and infant feeding counselling have changed the fate of the child of HIV Positive mother especially in developed countries where vertical transmission has virtually been eliminated[2]. 20% transmissions occur before 36 weeks gestation, 50% in the days before delivery and 30% intrapartum[3]. Transmission rates for breast feeding may be as high as 30-40% and are associated with systemic HIV burden [4].

In past it was thought that there is increased risk of transmission with rupture of membranes, but recent analyses in the setting of combination antiviral therapy have not found this to be a risk factor with an HIV viral load <1000 copies/ml [5].

Perinatal HIV transmission is most accurately correlated with maternal plasma HIV RNA burden. Transmission of HIV infection however has been observed at all HIV RNA level including those that were non

detectable by current assays. Hence, the viral load should not be used to determine whether to initiate antiretroviral therapy in pregnancy [6].

Getting to Zero 2011-2015 UNAIDS strategy has many goals and vision, amongst these one of the vision is to get to Zero New infection. One of these goal for 2015 is sexual transmission of HIV reduction by half, vertical transmission of HIV elimination and AIDS related maternal mortality reduction by half [7].

The findings from this study are thus expected to reflect the actual effect of HIV infection on pregnancy, obstetrics and neonatal outcome.

II. Aims And Objectives:

The aim of this study is to know the maternal and perinatal outcome in HIV infected person.
The incidence of HIV infected pregnancy.

III. Material And Methods:

The study is a retrospective descriptive study conducted from the year January 2009 to December 2013, 5 years study carried at Cheluvamba Hospital, Mysore Medical College and Research Institute Mysore, Karnataka,India.The hospital records of all HIV infected pregnant women were collected. Data on age, parity, mode of delivery, neonatal outcome were obtained and analyzed.For HIV positive women detected first time during labour and for those not on ART during year 2009- September2012, single dose nevirapine table 200mg was given during labour. If she was on treatment then ART was continued. For infants single dose nevirapine syrup was given based on birthweight. Nevirapine dosage for infants with birth weight less than 2000g, 2000-2500g, more than 2500mg were 0.2ml/kg/day, 1ml/day, and 1.5ml/day respectively.Infant -feeding depends on affordability. If affordablefor replacement feed. If not affordable then breastfeeding was advised.

From the year October2012-december 2013, for HIV positive women ARV was started at 14 weeks of gestation. Tab Duovir [Nevirapine (NVP) 200mg+Lamivudine (3TC) 150mg+Zidovudine (AZT) 300mg].Nevirapine was given to infants born to HIV positive mother based on the birth weight. Nevirapine daily dose (in ml) 10mg in 1ml suspension. Nevirapine dosage for infants with birth weight less than 2000g, 2000-2500g, more than 2500mg were 0.2ml/kg/day, 1ml/day, and 1.5ml/day respectively up to 6 weeks. ExclusiveBreastfeeding was advised for all women.

Both Mother and babies follow up in ART centre data were collected and analyzed. Babies' dry blood spot (DBS) was done at 6 weeks, 6months, 12 months and 18 months. Early infant diagnosis (EID) by collecting DNA PCR (dried blood spot) at 6 weeks. If EID result is positive then whole blood testing was done. If whole blood sample was positive then ensureinitiation ofpaediatricART. If EID was negative then follow up of infant was done. Confirmation of HIV status was only at 18 months of age.
Statistical test used is chi square test, standard deviation.

IV. Results

There were a total of 63959 deliveries during our study period. Of these 334 were detected to be HIV infected.

Table 1:Agewise distribution

Age	Number	Percent (%)
< 20 yrs	91	27.2
> 20 yrs	243	72.8
Total	334	100.0

Table2:Urban/Rural Distribution

	Number	Percent (%)
Urban	105	31.4
Rural	229	68.6
Total	334	100.0

Table3 : Parity Wise Distribution

Parity	Number	Percent (%)
Primegravida	198	59.3
Multigravida	136	40.7
Total	334	100.0

Table 4:Partner Status

	Number	Percent (%)
Not Obtained	147	44.0
Non Reactive	39	11.7
Reactive	148	44.3
Total	334	100.0

Table5:CD4 Count

CD4 Count	Number	Percent (%)
Not Known	56	16.8
< 100	8	2.4
100-200	26	7.8
>200	244	73.1
Total	334	100.0

Table6:ART Status

ART Status	Number	Percent (%)
Not On ART	34	10.2
PRE ART	160	47.9
ON ART	96	28.7
ARV	44	13.2
Total	334	100.0

Table7: Mode Of Delivery

	Number	Percent (%)
FTND	246	73.7
LSCS	69	20.7
IUD	13	3.9
PTD	6	1.8
Total	334	100.0

Table 8:Hospital Stay

	Number	Percent (%)
Upto 3 Days	251	75.1
4-7 Days	74	22.2
7+ Days	9	2.7
Total	334	100.0

Table9:Birth Weight

	Number	Percent (%)
1-2.5 Kg	158	49.2
> 2.5 Kg	163	50.8
Total	321	100.0

Table 10:Feeding options

	Number	Percent (%)
Breastfeeding	204	65.2
Replacement Feeding	109	34.8
Total	313	100.0

Table 11: Nevirapine Prophylaxis

	Number	Percent (%)
Yes	310	97.8
No	7	2.2
Total	317	100.0

TABLE 12:Follow up of babies

	Number	Percent (%)
6 Weeks NR*	17	5.1
6 Months NR	23	6.9
12 Months NR	22	6.6
18 Months NR	120	35.9
Fetal Death	65	19.5
Lost Of Followup	81	24.3
Reactive	6	1.8
Total	334	100.0

V. Discussion

There were a total of 63959 deliveries during our study period. Of these 334 were detected to be HIV infected .incidence being 0 .52%. 72% of women were aged more than 20 years (Table 1). Mean age being 23years as compared with Ezechi et at[8] .68.6% of them were from rural area(Table 2).In our study 59.3% of them were primegravida, this evidence is supported by Ezechi et al and E Azria et al[9] study. HIV testing was done to spouse also and 44.3% of them were found positive (Table 4).

For all HIV positive pregnant women CD4 testing was done, 73.1% had CD4 count of > 200, while 2.4% had count of less than 100 (Table 5).While 87.4% had CD 4 more than 200 in E Azria et al study. In our study of 8 womenhad CD4count less than 100,of them 3 required caesarean section and 5 delivered vaginally. Of the 3 delivered by caesarean section 1 infant died , 2 babies followed till 18 months were found non reactive. 5 babies delivered vaginally , 3 babies died, 2 were found non reactive when followed till 18 months.7 women with CD4 count less than 100 breastfed babies, while one preferred replacement feed and that baby died.

75% of them were on ART regimen during pregnancy (Table 6).

1.8% delivered preterm while 73.7% delivered vaginally at term(Table 7).20% required caesarean section in contrast to E Azria et al study were 55% required caesarean section and 45% delivered vaginally.50.8% 0f neonates were weighing more than 2.5kg (Table 9). 97.8% of neonates received nevirapine prophylaxis (Table 11) .65.2% of them preferred breastfeeding (Table 10).

Following delivery babies and mother were followed in ART centre. Data were collected and analyzed. Babies' dry blood spot (DBS) was done at 6 weeks, 6months, 12 months and 18months. 1.8% of child turned out to be HIV positive and 19.5% mortality.24.3% of them lost follow up (Table 12). Confirmation of HIV status is only at 18 months of age.6 babies turned out to be positive. Of these 6 babies, 2 were delivered by caesarean section while 4 delivered vaginally. After confirmation of positive status babies were referred for paediatric ART initiation.

VI. Conclusion

Globally evidence suggest that although ARV prophylaxis using SD- NVP is highly effective in reducing risk of transmission from about 45% to less than 10%, the 10% uncovered risk is unacceptably high since paediatric HIV can be eliminated if currently available drugs are used effectively. The World Health Organization (WHO) therefore recommends use of more efficacious ARV regimen, using multiple drugs for PPTCT. These regimens can reduce transmission to less than 5% if started early in pregnancy and continued throughout period of delivery and breast feeding [2].CD4 testing in HIV positive pregnant women, ARV intervention and Early Infant Diagnosis (EID) is appropriate in management of HIV infection [2].

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