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Feto maternal outcome in HIV positive pregnant women

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ABSTRACT

Background: By the end of 2017, 21.40 lakhs population had HIV/AIDS in India. Pregnancy in HIV positive women has not only been a concern for mother but also the risk of transmission to the baby. HIV is not a contraindication for pregnancy. Risk of anemia, fetal growth restriction, and preterm labor has raised an issue on the topic. Stigma and discrimination associated with the disease has to be removed by proper awareness and education, so as to remove fear from ante-natal checkup (ANCs). The study was conducted to know the prevalence of HIV among pregnant women and feto-maternal outcome associated with the disease.

Methods: A cross sectional study was conducted in the Department of Obstetrics and Gynecology, RIMS Imphal over a period of 18 months.

Results: It was observed that prevalence of HIV in pregnant women was 0.14%. Anemia was the most common maternal complication seen in 44.1% followed by pre-labor rupture of membrane (PROM) in 20.5% and preterm delivery in 5.8%. In fetus, low birth weight was observed in 14.7% of cases. In majority of newborn 91.2% apgar score was $\geq$ 7. All babies who came for follow up at 18 months were tested negative.

Conclusion: Although HIV infected women had high incidence of adverse pregnancy outcome than non-infected women, the disease course and mother to child transmission can be curtailed by proper awareness, ANCs and anti-retroviral treatment (ART) use. Prevention of parent to child transmission (PPTCT) programme plays an active role for the same.

Keywords: HIV, Antiretroviral therapy (ART), Prevention of Parent to Child Transmission (PPTCT).

INTRODUCTION

By the end of 2017, 21.40 lakhs people were living with HIV /AIDS in India, which constitute 0.22% of the adult population between the age group of 15-49 years (NACO HIV estimation report 2017). Although there has been a decline in incidence of HIV infections in national level but there are significant inter-state variation. In developing countries like India, HIV infections during pregnancy has become one of the most important complications.

Pregnancy in individuals infected with HIV has become an important problem because of fourfold rise of infection in women of childbearing age in the developing country. Mother-to-child transmission (MTCT) transmission of HIV is the most significant route of infection in children. The mode of transmission may be ante-partum (in utero) intra-partum (during labor) or post-partum (through breast feeding). Maternal viral load, mode of delivery and maternal nutrition being the strongest determinants of risk for transmission.[1]

Pregnant women with HIV were more likely to have anemia during pregnancy, less maternal weight gain,

intrauterine fetal growth restriction and sometimes present with preterm labor.[2] Other factors such as stigma and discrimination associated with the disease also leads to significant less antenatal checkups.

The principal approach suggested for prevention of transmission of HIV is antiretroviral therapy (ART) and safe delivery practices.[3] Based on careful data collected from a hospital based study over a period of two years, we have estimated the prevalence of HIV infection among the pregnant women and the feto-maternal outcome associated with the disease.

METHODS:

After approval from Institutional Research and Ethical Board, cross-sectional study was conducted in the Department of Obstetrics & Gynecology RIMS, Imphal over a period of one and half year from 1st October 2015 to 31st March 2017.

Inclusion criteria:

- All HIV positive pregnant women admitted in antenatal ward for safe confinement.

Exclusion criteria:

- Participants who refuse to give consent or participate.
- Pregnant women with medical complications like heart disease, diabetes mellitus, essential hypertension, renal disease.

After obtaining informed written consent a detailed history was taken from the patient i.e age, parity, occupation, educational qualification, last menstrual period, obstetrical history, family history, whether on ART or not. After detailed history general physical examination, systemic and obstetrical examination was done. Investigations such as complete blood count, liver function test, kidney function test, blood grouping, blood sugar estimation, HIV, HBsAg, HCV Ab, VDRL, CD4 count were done. Details of induction, duration of labor, mode of delivery, complications were noted. Immediate care of the newborn was taken care of. APGAR score of new-born at 1 minutes and 5 minutes, birth weight, NICU admission were recorded along with the associated complications. Both the maternal and neonatal health and wellbeing were recorded everyday till the day of discharge and as well as at eighteen months for mother and baby who came for follow-up.

All details were entered in a pre-designed perfoma and analysed using SPSS 21 IBM. Descriptive statistics like mean, percentage and standard deviation were used. For differential statistics, Chi square, Fisher's exact test and independent t-test were utilized and p value <0.05 was taken significant.

RESULTS

During the study period there were a total of thirty-four HIV seropositive pregnant women who delivered in the department of Obstetrics and Gynecology of RIMS.

Table 1: Prevalence of HIV infection

Number of pregnant women tested for HIV during the study period	13,467
HIV positive pregnant women detected	19
Prevalence of HIV infection among tested women	0.14%

The prevalence of HIV women among tested women during the study period is 0.14%

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Table 2: Age wise distribution of cases

AGE YEARS	NUMBERS	PERCENTAGE
<20	3	8.8
20-29	11	32.4
30-39	19	55.9
≥40	1	2.9
TOTAL	**34**	**100.0**
Mean ± SD	**29.6 ± 6.80**	

Majority of the respondent were in the age group of 30-39 years, which accounted for 55.9% of the cases. With a mean age of 29.6±6.80

Table 3: Distribution of cases based on parity

PARITY	FREQUENCY	PERCENTAGE
0	10	29.4
1	12	35.3
2	7	20.6
≥3	5	14.7
TOTAL	**34**	**100.0**

Maximum seropositive women were Para1 which accounted for 35.3% of the cases.

Table 4: Distribution of cases by gestational age at the time of delivery

GESTATIONAL AGE	NUMBERS	PERCENTAGE
$<36^{+6}$	2	5.9
37-40	21	61.8
40^{+1}-42	10	29.4
>42	1	2.9
TOTAL	**34**	**100.0**

Preterm delivery was observed in 5.9% of the cases. Majority i.e 61.8% of the cases delivered between 37-40 weeks period of gestation. 29.4% of the cases delivered after 40 weeks and post term pregnancy was observed in 2.9% of cases.

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Table 5: Distribution of cases based on type of labor

LABOUR TYPE	NUMBERS	PERCENTAGE
SPONTANEOUS	33	97.1
INDUCED	1	2.9
TOTAL	**34**	**100.0**

Table 6: Distribution of cases based on mode of delivery

MODE OF DELIVERY	NUMBERS	PERCENTAGE
Preterm Vaginal Delivery	2	5.9
Normal Vaginal Delivery	22	64.7
LSCS	8	23.5
VBAC	2	5.9
TOTAL	**34**	**100.0**

Majority of the cases i.e 64.7% delivered by normal vaginal delivery followed by LSCS which accounted for 23.5% of the cases.

Table 7: Distribution of cases based on obstetrical complication

OBSTETRIC COMPLICATIONS	FREQUENCY	PERCENTAGE
ANEMIA	15	44.1
PRETERM LABOUR	2	5.8
PROM	7	20.5

Anemia was the most common complication observed in 44.1% of the cases followed by Pre labor rupture of membrane (PROM) in 20.5% of the cases. Preterm delivery was observed in 5.8% of cases. There were no any intra and post-partum complications.

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Table 8: Distribution of cases status according to initiation of treatment with ART at the time of delivery

CASES	FREQUENCY	PERCENTAGE
NOT ON ART	13	38.2
BEFORE 6 COMPLETED MONTHS OF TREATMENT	4	11.8
6 COMPLETED MONTHS TREATMENT	17	50.0
TOTAL	34	100.0

It was observed that 50% of the cases were already on ART for more than 6 months at the time of delivery. And 11.8% of the cases had not completed their 6 months of treatment. However, 38.2% of cases were not on any treatment at the time of delivery.

Table 9: Distribution of cases based on birth weight

BIRTH WEIGHT	**NUMBERS**	**PERCENTAGE**
≥ 2.5 Kg	29	85.3
1.5 - 2.4 Kg	5	14.7
TOTAL	**34**	**100.0**

Low birth weight was observed in 14.7% of the cases.

Table 10: Distribution of cases based on Apgar score at 5 minutes.(this to be in BOLD)

APGAR SCORE	**FREQUENCY**	**PERCENTAGE**
≥7	31	91.2
<7	3	8.8
TOTAL	**34**	**100.0**

Majority of the babies 91.2 % had Apgar score of ≥7 at the time of delivery, however Apgar score of <7 was observed in 8.8% of cases.

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Table 11: Distribution of cases based on adverse neonatal outcome

Adverse neonatal outcome	Frequency	Percentage
Preterm delivery	2	5.8
NICU admission	1	2.9
Still birth	1	2.9
Low Birth Weight	5	14.7

Number of babies who came for follow up at 18 months were 17 (50%) and all of them were tested negative.

- ***Effect of pregnancy on HIV***

There was no maternal death and no AIDS defining disease in this study.

- ***Antiretroviral therapy***

The regimen followed was Zidovudine (AZT), Lamivudine (3TC) and Nevirapine (NVP). The regime was started as soon as the diagnosis was made. All neonates were administered dose adjusted Nevirapine drops (2mg/kg of body weight) within 72 hours of birth under Prevention of Parents to Child Transmission PPTCT programme.

DISCUSSION

As the incidence of HIV infection in women population is on the rise so are the incidence of pregnancy associated with HIV infection. Adverse feto-maternal outcome are often associated with it. Vertical transmission to baby which is high without treatment can be reduced with anti-retroviral treatment or prophylaxis, elective cesarean section, exclusive breastfeeding or replacement feeding.

The present study conducted from October 2015 till March 2017, the prevalence of HIV infection among tested pregnant women was found to be 0.14%.

Most of the cases observed are in the age group of 20-39 years of age with a mean of 29.6±6.8 years. Goswami S and Chakravorty PS[4] in their study observed maximum in the age group of 25-30. Coetzee D et al[5] observed it to be 26 years. Olagbuji BN et al[2] observed mean age of the HIV infected women in their study to be 30.1±3.9 years which is comparable to our findings.

In the present study, 35.5% of cases are para1 and 29.4% of cases are primigravida. Gupta A et al[6] observed 50% of cases in primigravida and Habib N et al[7] observed 26.7% of cases in para 1. Olagbuji BN et al[2] in their study observed prevalence of HIV more among multiparous than nulliparous. These findings are similar to our findings.

In the present study, mean gestational age at the time of delivery was 39.1±1.6 weeks. Habib N et al[7] observed mean gestational age of 39.3 weeks. Dos Reis HL et al[8] observed a mean gestational age of 37.6 weeks. Abbas and Shabbir[9] observed a mean gestational age of 39 weeks which is similar to our present finding.

Antenatal complications like anemia, was found to be 44.1% in sero-positive women in the preset study which is comparable to study conducted by Uneke CJ[9] et al where they found anemia in 76.9% of the cases. Preterm delivery was observed in 5.8% of the cases in present study which was similar to study conducted by Habib N et al[7] where they observed preterm labor in 8.3% of cases.

Gomubutra V[11] observed 50.6% cesarean rate among study group whereas Coetzee D et al[1] observed it to be 23%. Habib N et al[7] observed it to be 36.5% in HIV positive pregnant women who received treatment. In our present study, it was found to be 20.5% which is comparable to the findings of above studies.

In the present study, the mean birth weight was found to be 2800gm±0.48. Dos Reis HL et al[20] observed mean birth weight of 2900gm±0.71 and Habib N et al[7] observed mean birth weight of 2900gm±0.70 and low birth weight in 18% of cases. Low birth weight was observed in 14.7% of cases in the present study. Leroy V et al[12] observed low birth weight < 2.5 kg in

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25.5%. Gomutbutra V[11] observed low birth weight in 22% of cases. Dos Reis HL et al[8] observed low birth weight in 20.2% of the cases which is comparable to our study.

In the present study, Apgar score at 5 minutes of less than 7 was observed in 8.8% of cases. Dos Reis HL et al[8] observed Apgar score of less than 7 in first 1 minute in 3% of cases. Habib N et al[7] observed low Apgar score of 0-3 at 5minutes in 1.4% which are comparable.

Number of babies who came for follow up at 18 months was 17 and all tested negative. Goswami S and Chakravorty PS[4] observed MTCT in only 1 cases during follow up at 18 months whereas Coetzee D et al[5] reported MTCT in 8.85% and Gomubutra V[11] reported MTCT in 4%.

CONCLUSION

HIV infected women had higher incidence of adverse pregnancy than uninfected women. The course of HIV infection seems to be unaffected by pregnancy as there was no incidence of maternal death in the study.

The vertical transmission of HIV in our study was nil among babies who had come for follow up at 18 months. Thus finding the present PPTCT programme to be effective in bringing awareness of HIV among antenatal patients and reducing perinatal transmission of HIV. The dropout rate for mother-baby pair for post-delivery checkup was high 50%. Anti- retroviral therapy, exclusive breastfeeding or replacement feeding were found to be associated with lower rate of mother-to-child transmission of HIV infection.

REFERENCES

1. Kotler DP. HIV in pregnancy. Gastroenterol Clin North Am 1998;27(1):269-80.
2. Olagbuji BN, Ezeanochie MC, Ande AB, Oboro VO. Obstetrics and perinatal outcome in HIV positive women receiving HAART in urban Nigeria. Arch Gynaecol Obstet 2010;281(6):991-4.
3. Cunningham FG, Kenneth JL, Bloom SL, Catherine YS, Jodi SD, Hoffman BL, ed al. William obstetrics. 24th ed. NewYork: McGrawHill; 2014.
4. Goswami S, Chakravorty PS. Prevention of parents to child transmission of HIV (PPTCT): An effort of four years in a tertiary centre. J Obstet Gynaecol India 2011;61(4):394-8.
5. Coetzee D, Hilderbrand K, Boulle A, Beverly D, Abdullah F, Goemaeve E. Effectiveness of first district wide programme for prevention of mother to child transmission of HIV in South Africa. Bull WHO 2005;83(7):489-94.
6. Gupta A, Gupte N, Sastry J, Bharucha KE, Bhosale R, Kulkami P, et al. Mother-to-child transmission of HIV among women who choose not to exclusively breastfeed their infants in Pune, India. Indian J Med Res 2007 Aug;126(2):131-4.
7. Habib N, Daltveit A, Bergsjo P, Shao J, Oneko O, Lie R. Maternal HIV status and pregnancy outcomes in northern Tanzania: a registry-based study. BJOG 2008;1159(5):616-24.
8. Dos Reis HL, Araujo Kda S, Riberio LP, Da Rocha DR, Rosato DP, Passos MR, et al. Preterm birth and fetal growth restriction in HIV infected Brazilian pregnant women. Rev Inst Med Trop Sao Paulo 2015;57(2):111-20.
9. Abbas and Shabbir. Feto-maternal outcomes in HIV positive pregnant women:Pakistan PPTCT experience. Retrovirology 2010;7(1):134-6.
10. Uneke CJ, Duhlinska DD, Igbinedion EB. Prevalence and public health significance of HIV infection and anemia among pregnant women attending antenatal clinics in South-eastern Nigeria. J Health Popul Nutr 2007;25(3):328-35.
11. Gomutbutra V. Characteristics of pregnancy with human immunodeficiency virus and perinatal transmission in Nakornping hospital. J Med Assoc Thai 2008;91(2):142-5.
12. Leroy V, Ladher J, Nyiraziraje M, De Clercq A, Bazubagira A, Van de Perre P, et al. Effect of HIV-1 infection on pregnancy outcome in Kigali, Rwanda. Pregnancy and Study Group AIDS 1998;12(6):634-50.

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