

# A Prospective Observational Study on Mode of Delivery and Perinatal Outcome in HIV Positive Pregnant Female

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**Abstract:** ***Introduction:** It is a disorder of immune system in which body's normal defence against infection break down leaving it vulnerable to threatening infection. India has third largest pool of HIV cases in the world and 2.14 million people living with HIV. Parent to child transmission of HIV is major route of new HIV infection in children. Pregnant women who are found HIV positive should have immediate and lifelong ART to treat HIV and improve her own health and maximally suppress maternal viral load prior to conception to decrease the risk of perinatal transmission and HIV transmission to uninfected partner. **Aim:** To study the mode of delivery in HIV positive women and to study perinatal outcome like birth weight, stillbirth, NICU admissions. **Methods:** This was prospective observational study which was conducted for 6 months (From August 2023 to January 2024) 30 patients were having HIV positive among 3412 deliveries. Thorough examination, investigations and treatment given according to NACO guidelines and fetomaternal outcome were noted in all cases. **Results:** In present study, prevalence of HIV Positive pregnant women was 0.87%. Out of 30 patients, 3 (10%) cases were diagnosed with HIV during ANC examination. 22 (73%) patients were having CD4 count >500 and 1 (3.33%) patient having low CD4 count. 24 (80%) patients delivered vaginally and 6 (20%) underwent LSCS. 6 (20%) of babies were admitted to NICU, 1 (3.33%) stillbirth and 28 (93.33%) babies tested negative, 2 (6.6%) losses to follow up. **Conclusion:** Maternal HIV transmission is the primary means by which infants become infected. hence prevention of HIV transmission is of paramount importance. Regular ANC care and multidisciplinary approach has similar obstetric outcome in HIV infected and uninfected women. Duration of HIV positive status, CD4 count, ART treatment and compliance, mode of delivery, breast feeding practices, neonatal prophylaxis these factors attribute to perinatal transmission.*

**Keywords:** HIV Positive, PPTCT, CD4 count, ART

## 1. Introduction

AIDS was first described in June 1981 in Los Angeles, USA and is presently one of the worst global health concerns. AIDS is caused by infection with HIV, a lentivirus in the retrovirus family. Two types of HIV have been identified, HIV - 1 and HIV - 2. Majority of HIV infections are caused by HIV - 1, but HIV - 2 has been found to infect individuals in certain parts of Africa.

It is a disorder of immune system in which body's normal defence against infection break down leaving it vulnerable to threatening infection. HIV has dramatic impact on the health of women and their children. India has third largest pool of HIV cases in the world and 2.14 million people living with HIV. Parent to child transmission of HIV is major route of new HIV infection in children. Pregnant women who are found HIV positive should have immediate and lifelong ART to treat HIV and improve her own health and maximally suppress maternal viral load prior to conception to decrease the risk of perinatal transmission and HIV transmission to uninfected partner.

In the developed countries vertical transmission has been virtually eliminated mainly because of the introduction of highly active antiretroviral therapy (HAART) from early pregnancy, choice of delivery based on viral load and infant feeding counseling.

HIV infection in itself has been associated with varying rates of adverse pregnancy outcomes such as increased spontaneous abortions, stillbirths, perinatal and infant mortality, intrauterine growth restriction, low birth weight and chorioamnionitis.

**Aim:** To study the mode of delivery in HIV positive women and to study perinatal outcome like birth weight, stillbirth, NICU admissions.

## 2. Methods

All HIV positive pregnant patients admitted in Department of Obstetrics and Gynaecology septic, Labour room, Vijayanagar Institute of Medical Sciences, Ballari in the period of the study meeting the inclusion criteria. This was prospective observational study which was conducted for 6 months (From August 2023 to January 2024) and 30 patients were having HIV positive among 3412 deliveries.

**Inclusion Criteria:** All HIV positive pregnant patients admitted for delivery (vaginal/Caesarean section) in the department of OBG SLR and who gave consent for the study will be included.

**Exclusion Criteria:** Women with less than 28 weeks of gestation.

Volume 13 Issue 8, August 2024

Fully Refereed | Open Access | Double Blind Peer Reviewed Journal

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3. Results

Total deliveries during 6 months study period were 3412. No. of seropositive patient who give consent were 30. Out of 30 patients studied, 27 patients were pre - conceptionally diagnosed as seropositive.03 patients were detected to be seropositive during present ANC, with prevalence being 0.87%.

Table 1: Prevalence of HIV Positive Patients.

Parameters	Observations
Study period	for 6 months (From August 2023 to January 2024)
Total number of deliveries	3412
Newly detected cases	03
Total seropositive cases	30
Prevalance	0.87%

Table 2: Distribution according to Age Group (N=30)

Age group in years	Frequency	Percent
< 20	01	3.3
21 - 25	18	60
26 - 30	08	26.6
31 - 35	02	6.6
>35	01	3.3
Total	30	100.0

Study was conducted in 34 pregnant women with HIV. Out of 34 women, majority were from 21 - 25 years

Table 3: Distribution according to Husband HIV Status (N=30)

Husband status	Frequency	Percent
Positive	22	73.3
Negative	06	20
Not known	02	6.6
Total	30	100.0

Husband's HIV status was positive in 22 cases i. e.73.3% and negative in 6 cases i. e.20% and not known in 2 cases i. e.6.6%.

Table 4: Distribution according to duration of HIV Infection (N=30)

Duration of HIV status	Frequency	Percent
New Cases (Present pregnancy)	03	10
Old Cases (Before pregnancy)	< 5 years	18
	5 - 10 years	08
	>10 years	01
Total	30	100

Majority of the women were diagnosed with HIV before the pregnancy i. e.27 (70%) and 3 (10%) are diagnosed in present pregnancy.

Table 5: Distribution according to Gravida Status (N=30)

Gravida	Frequency	Percent
01	18	60
02	06	20
03 or more	06	20
Total	30	100

Of the 30 women, 60% were primigravida and 40% were multigravida women

Table 6: Distribution according to Gestational Age (N=30)

Gestational age	Frequency	Percent
28 - 32 <sup>+6</sup> weeks	01	3.45
33 - 36 <sup>+6</sup> weeks	04	13.3
≥37weeks	25	83.3
Total	30	100

Of the 30 women, 25 (83.3%) were term gestation and 5 (16.75%) were preterm.

Table 7: Distribution according to CD4 Count (N=30)

CD4 Count (WHO stage)	Frequency	Percent
≥500 (stage 1)	22	73.3
350 - 499 (stage 2)	03	10
200 - 349 (stage 3)	04	13.3
<200 (stage 4)	01	3.3
Total	30	100

The CD 4 count was >500 in 22 cases i. e.73.3% and 350 - 499 in 3 cases i. e.10% and 200 - 349 in 4 cases i. e.13.3% and <200 in 01 cases i. e.3.3%.

Table 8: Distribution according to Mode of Delivery (N=30)

Mode of delivery	Frequency	Percent
VAGINAL	24	80
LSCS	06	20
Total	30	100.0

In 20% cases mode of delivery was LSCS and vaginal delivery in 24 (80%) cases. No needle stick injury in health care professionals.

Table 9: Distribution according to Birth Weight (N=30)

Birth weight	Frequency	Percent
<2kg	01	3.3
2 - 2.4kg	23	76.6
2.5 - 2.9kg	05	16.6
3 - 3.4kg	01	3.3
Total	30	100

Out of 30 cases, 6 (20%) babies had birth weight ≥2.5kg and 24 (80%) of them have birth weight <2.5kgs

Table 10: Distribution according to Indication for NICU Admission (N=6)

Indications	Frequency	Percent
Birth asphyxia	03	50
Preterm	02	33.3
IUGR	01	16.6
Total	06	100.0

Out of 30 cases, 6 (20%) of babies were admitted to NICU, 1 (3.33%) stillbirth. Out of 6 NICU admission, indication for NICU admission, meconium aspiration i. e 3 (50%), preterm 2 (33.3%), IUGR 1 (16.6 %)

**Table 11:** HIV Status of the Baby at 6 Weeks of Age (N=29)

HIV status of Baby at 6 weeks of age	Frequency	Percent
Negative	28	96.55
Positive	01	3.45
Total	29	100.0

Incidence of HIV positive baby in our study was 3.45%.

#### 4. Discussion

Maternal HIV transmission is the primary means by which infants become infected, hence prevention of HIV transmission is of paramount importance. HIV infection itself has been associated with varying rates of adverse pregnancy outcomes such as increased spontaneous abortions, stillbirths, perinatal and infant mortality, intrauterine growth restriction, low birth weights and chorioamnionitis. Regular ANC care and multidisciplinary approach has similar obstetric outcome in HIV infected and uninfected women. Duration of HIV positive status, CD4 count, ART treatment and compliance, mode of delivery, breast feeding practices, neonatal prophylaxis these factors attribute to perinatal transmission.

#### 5. Conclusion

Good antenatal care and multidisciplinary approach to HIV - infected women can have good pregnancy outcome and early prophylaxis to the baby can reduce the vertical transmission of HIV to neonate by less than 2 percent. Primary prevention of HIV infection in parents - to - be, early identification of seropositivity in pregnant women, prevention of mother to child transmission of HIV by appropriate antiretroviral therapy, special interventions in maternal management during labor, appropriate care and follow up of the newborn, all play an important role.

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