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Outcomes of HIV in Pregnancy in A Teritiary Care Center

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ABSTRACT
INTRODUCTION*: HIV disease in humans is caused by HIV-1 or HIV- 2. HIV is RNA retrovirus belonging to family retroviridae that causes incurable infection that over a period of time leads to Acquired Immunodeficiency Syndrome. Globally around1.3 million women and girls living with HIV become pregnant each year . In the absence of intervention the rate of transmission from mother to the child ranges from 15-45%. Mother to child transmission is `the primary route of HIV transmission in children. Mother to child transmission can be preventable with appropriate interventions by providing antiretroviral therapy to mother, antiretroviral prophylaxis to infants, caesarean section and formula feeds to the newborn. India is committed to achieving the goal of Elimination of Mother to Child Transmission of HIV by 2025 under NACP.*
AIMS: *to study the maternal and fetal outcomes in HIV positive pregnant women*
MATERIALS AND METHODS*: retrospective observational study based on the data obtained from PPTCT centre at GGH Vijayawada from April 2020 to December 2022.*
RESULTS*: a total of 20291 antenatal women were registered and tested for HIV during the study period; of which only 42 women were tested positive (0.20%). The total no of antenatal women registered elsewhere and referred to GGH Vijayawada were 144(0.70%). Total no. of HIV positive women delivered were 177; of which 104(58.7%) were delivered vaginally and 72 (40.6%) were delivered by caesarean section. Outcomes of pregnancy: no of livebirths were 175(93%) ; no of still births 2(1.06%); no of HIV positive women who underwent MTP 9(4.78%)*
CONCLUSION*: HIV is potentially a dangerous disease that can have profound effects on pregnancy. Vertical transmission can occur to fetus during pregnancy or during lactation. The elimination of parent to child transmission program has been responsible for lower rates of transmission to newborns. Early initiation of ARV prophylaxis and strict adherence to ART, identifying and treating the risk factors helps in achieving the goals of EMTCT*
Key words: *HIV, pregnancy, vertical transmission, EMTCT.*

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I. INTRODUCTION:

HIV disease in humans is caused by HIV-1 or HIV- 2. HIV is RNA retrovirus belonging to family retroviridae that causes incurable infection that over a period of time leads to Acquired Immunodeficiency Syndrome. Most common cases world wide are caused by HIV-1. HIV targets lymphocytes, monocytes, macrophages expressing cd4 molecules. Mode of transmission is through sexual contact; vertical transmission(mother to child transmission); exposure to infected blood or body fluids ; breastfeeding. Globally around1.3 million women and girls living with HIV become pregnant each year. In the absence of intervention the rate of transmission from mother to the child ranges from 15-45%. With effective intervention this rate can be decreased to <10%.

In India the prevalence of HIV in antenatal population is <1% except in states Andhra Pradesh, Karnataka, Maharastra, Manipur, Nagaland, Orissa, where the prevalence is >3%.

Mother to child transmission is `the primary route of HIV transmission in children. The PPTCT program aims to prevent mother to child transmission. Mother to child transmission can be preventable with appropriate interventions by providing antiretroviral therapy to mother, antiretroviral prophylaxis to infants, caesarean section and formula feeds to the newborn. PPTCT(prevention of parent to child transmission) was started in India in 2002 with aim of reducing mother to child transmission.

India is committed to achieving the goal of Elimination of Mother to Child Transmission of HIV by 2025 under NACP. Targets for process validation of EMTCT are:

- 95% of all estimated pregnant women are registered for AANC and receive at least 1 antenatal care check up
- >95% of all estimated pregnant women are tested for HIV
- >95% of all HIV positive pregnant women are on ART.

EBF provides the infant with all required nutrients and immunological factors that help to protect them against common infections. EBF maximizes the chances of survival of these infants and is recommended as the preferred choice of infant feeding for HIV-exposed infants in India**.**

Under the national programme, it is recommended to provide lifelong ART for all pregnant and breastfeeding women living with HIV.

All pregnant women living with HIV receive a 'Fixed Drug Combination (FDC)' triple-drug ART regimen regardless of CD4 count or clinicalstage. Presently as per national guidelines, TLD is the preferred regimen for pregnant women.

Tenofovir(TDF)- 300mg+ Lamivudine(3TC)- 300mg+ Dolutegravir(DTG)- 50mg

HIV risk categorization in the infants should be done based on viral load suppression in HIV-positive pregnant women. Therefore, viral load testing of all HIV-positive pregnant women should be done during 32 to 36 weeks of pregnancy irrespective of ART . The HIV-exposed infants are categorized as low risk or high risk and their prophylaxis options are given .

HIV RISK STATUS	features	ARV	Duration
LOW RISK	Born to mothers with viral load <1000copies/ml >32 weeks	Syp nevirapine or syp zidovudine	Birth - 6weeks
HIGH RISK	Born to mothers not on ART Viral load not done/ not suppressed after 32 weeks Newly diagnosed < 6weeks of delivery	Syp nevirapine + zidovudine	Birth- 12 weeks

As of 2021 the estimated number of pregnant mother needing PMTCT(prevention of mother to child transmission) services was 20,612, nearly 64% are receiving services. In Andhra Pradesh the need for PMTCT is 2.01 thousand. The mother to child transmission rate in India is 24.25% in 2021. GOI is currently implementing phase V of NACP- the goal is attainment of zero vertical transmission of HIV by 2025. Elimination of vertical transmission of HIV is directly related related to SDG 3.3 of ending HIV/AIDS epidemic as public threat by 2030. Pregnant women registering for antenatal services was 95% in 2021-2022 but the progress on HIV testing was 84%. The mother to child transmission rate is 24%. The treatment coverage of HIV was 64%. The overall seropositivity of HIV was 0.03%. HIV seropositivity in Andhra Pradesh was 0.05-0.07%. pregnancy among known HIV positive reported were 51%

Risk .of HIV transmission from mother to child with or without intervention

ARV INTERVENTION	RISK OF HIV TRANSMISSION
No ARV, breastfeeding	30-45%
No ARV, no breastfeeding	20-25%
Short course with one ARV; breastfeeding	15-25%
Short course with one ARV; no breastfeeding	5-15%
Short course with two ARV; breastfeeding	5%
3 ARV's breastfeeding	2%
3 ARV's, no breastfeeding	1%

Early infant diagnosis is necessary for early detection of infection and provide timely antiretroviral treatment. All HIV exposed babies are tested for infection using total nucleic acid polymerase chain reaction (TNA-PCR) at 6 weeks.

AIMS: to study the maternal and fetal outcomes in HIV positive pregnant women

MATERIALS AND METHODS: retrospective observational study based on the data obtained from PPTCT centre at GGH Vijayawada from April 2020 to December 2022.
RESULTS AND DISCUSSION: a total of 20291 antenatal women were registered and tested for HIV during the study period; of which only 38 women were tested positive (0.20%).

TABLE 1 : NO OF ANTENATAL WOMEN REGISTERED AND TESTED

Total no of antenatal women registered and tested	**20,291**
Total no of antenatal women tested positive	**38(0.20%)**
Total number of antenatal women registered elsewhere and referred	**138(0.70%)**
Total no of antenatal women came directly in labor and tested positive	**1(0.004%)**

The total no of antenatal women registered elsewhere and referred to GGH Vijayawada were 138(0.70%).Total no of antenatal women came directly in labor and tested positive were 1

TABLE 2: AGE OF WOMEN TESTED POSITIVE

Age(years)	**Number**
</= 20	**45(25.4%)**
21-25	**94((53.1%)**
26-30	**29(16%)**
>30	**9(5.08%)**

The mean age of antenatal women tested positive was 25.4 years. With standard deviation of 3.9 years. The youngest was 17 years and the oldest was 35 years.

TABLE :3 MODE OF DELIVERY

Total no of HIV positive women delivered	**177**
NVD	**103(58.7%)**
LSCS	**72(40.6%)**
Male child	**89(50.2%)**
Female child	**85(49.8%)**

Total no. of HIV positive women delivered were 177; of which 103(58.7%) were delivered vaginally and 72 (40.6%) were delivered by caesarean section.

TABLE :4 OUTCOMES OF THE HIV POSITIVE WOMEN

OUTCOMES	**Number**
LIVE BIRTHS	**175(93%)**
STILLBIRTHS	**2(1.06%)**
MTP	**9(4.78%)**

Outcomes of pregnancy: no of livebirths were 175(93%) ; no of still births 2(1.06%); no of HIV positive women who underwent MTP 9(4.78%). Total no of women HIV positive women opted for breastfeeding were 143(76%). Total no positive women opted for formula feeds were 75(39.8%) All neonates born to HIV positive mother were initiated with ARV prophylaxis.

II. DISCUSSION:

The study showed pregnant women receiving antenatal services are at 25.4 years. The caesarean rate was 40.6%. 4.78% underwent MTP which were higher compared to study done by S Acharya et al which was 19.4%. According to a study in Brazil the causes for termination family size, economic constraints and fear of transfer of HIV. The still birth rate was 1.06%. The higher rate may be due to small study population. The still birth rate according to S Acharya et al was 2.7%. the still birth rate is influenced by maternal HIV status and by use of ART regimen and maternal complications like anemia and pre eclampsia.

III. CONCLUSION:

HIV is potentially a dangerous disease that can have profound effects on pregnancy. Vertical transmission can occur to fetus during pregnancy or during lactation. The elimination of parent to child transmission program has been responsible for lower rates of transmission to newborns. Early initiation of ARV prophylaxis and strict adherence to ART, identifying and treating the risk factors helps in achieving the goals of EMTCT

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