

## Prevalence of HIV Infection among Pregnant Women in a Tertiary Care Hospital

Dr. B Rajeswari, Associate Professor, Niloufer Hospital (First Author)  
Dr. Y. Indiramani, Associate Professor, Niloufer Hospital (Corresponding Author)

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### Abstract

**AIM:** The aim of our study is estimating the seroprevalance of HIV in pregnant women in a tertiary care hospital and assisting in prevention from mother to child transmission and to study neonatal outcome

**Methods:** This is a retrospective study conducted in Niloufer hospital, a tertiary care hospital from 2013 to 2017. The study includes 31,071 pregnant women who attended the ante-natal clinic. Blood samples were collected after pre test counselling. Informed consent taken. Tested for HIV antibodies as per NACO guidelines. First antibody test was ELISA. If initial results were positive confirmed by two other supplementary tests.

**Results:** Out of 31,071 pregnant women 60 were found to be HIV positive with seroprevalance rate of 0.193%. Majority of seropositive women were in the age group of 20-30 years (71.66%), 16.66% were in age group of 15-19 years. 27 women out of 60 (45%) were with second pregnancy and 17 women (28.33%) were primigravida. 46 women (76.66%) were residing in urban area compared to 14 women (23.33%) who were from rural areas. 50% of women were illiterates and 25% have primary education and 8.3% have higher education. The delivery outcomes among 60 women, 52 (86.66%) were having live births and 2 had intrauterine deaths before they attended the hospital, 6 (10%) women opted for MTP in first three months. Among neonatal outcome 80.77% were normal children and seropositive conversion rate was 5.75%

**Conclusion:** The study indicates a gradual decline in seropositivity in antenatal women who were tested in five years with our study population being 31,071. Mother to child transmission of HIV infection during pregnancy, delivery or breast feeding is responsible for more than 90% paediatric AIDS. Proper antenatal counselling, screening, interventions like antiretroviral therapy, preventive measures during pregnancy, delivery, counselling regarding breast feeding and early neonatal care will bring down the mother to child transmission of HIV.

**Key Words :-** HIV, Seroprevalance, Pregnant women, New born outcome

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### I. Introduction

India launched National AIDS Control Programme in 1987. Meghalaya, Mizoram, Nagaland, Maharashtra, Andhra Pradesh were the states with high prevalence (According to HSS 2017). The prevalence of HIV infection among pregnant women in India varies in different states with highest in Mizoram and lowest in Tamil Nadu (0.27). Illiteracy, early marriage, sexual abuse against women are major socio economic factors which influence HIV infection. As per the National AIDS Control Organisation HIV prevalence is estimated as 0.26% in adults in 2017 with prevalence of 0.3% among males and 0.22% among females. Mother to child transmission of HIV is most common form of transmission of HIV in children. Screening in antenatal women is important because HIV can be transmitted from an infected mother to her child during pregnancy, labour and delivery and through breast feeding. The transmission rates ranged from 13 - 32% in developed countries and 25 - 48% in developing countries. In breast feeding infant up to 20% may acquire HIV through breast feeding depending on the duration. In children mother to child transmission is the most significant route of transmission of HIV infection and account for 4% of total perinatal transmission. As screening methods increased to detect HIV positive women in India, incidence of children with HIV also is increased accordingly. Screening of pregnant women for seroprevalance is an effective method to predict the seroprevalance in new born and young children and also for monitoring of HIV patients in general populations. The study was done to determine the

seroprevalence of HIV in pregnant women attending antenatal clinic at Niloufer Hospital and to study the neonatal outcome from 2013 to 2017.

## **II. Materials and methods**

This is a retrospective hospital based descriptive study which included 31071 women who attended antenatal clinic of Niloufer Hospital from 2013 -2017. Pregnant women registered at antenatal clinic of this hospital were routinely advised to undergo HIV screening after pre test counselling and informed consent. All the essential information was collected from the pregnant women and also from the spouse who attended the hospital. The variables studied were age ,parity, residential area, literacy rate. All pregnant women were interviewed with strict confidentiality. The services offered to HIV infected pregnant women in our hospital includes antenatal care(atleast 4 visits),counselling on choices of continuation or medical termination of pregnancy, if the women comes in first 3months of pregnancy only. Screening for TB (gene -xpert testing) done. Screening and treatment for STIs done. WHO clinical staging and CD4 staging done. Counselling on positive living, safe delivery, birth planning and infant feeding options was done for couple. Safe sex counselling ,HIV testing of spouse was done. Linkage to ART services done. ART (anti retro viral therapy) provided regardless of clinical stage and CD4 count. Nutrition counselling was done. Family planning services were explained. Children are followed in ART centre of our hospital.

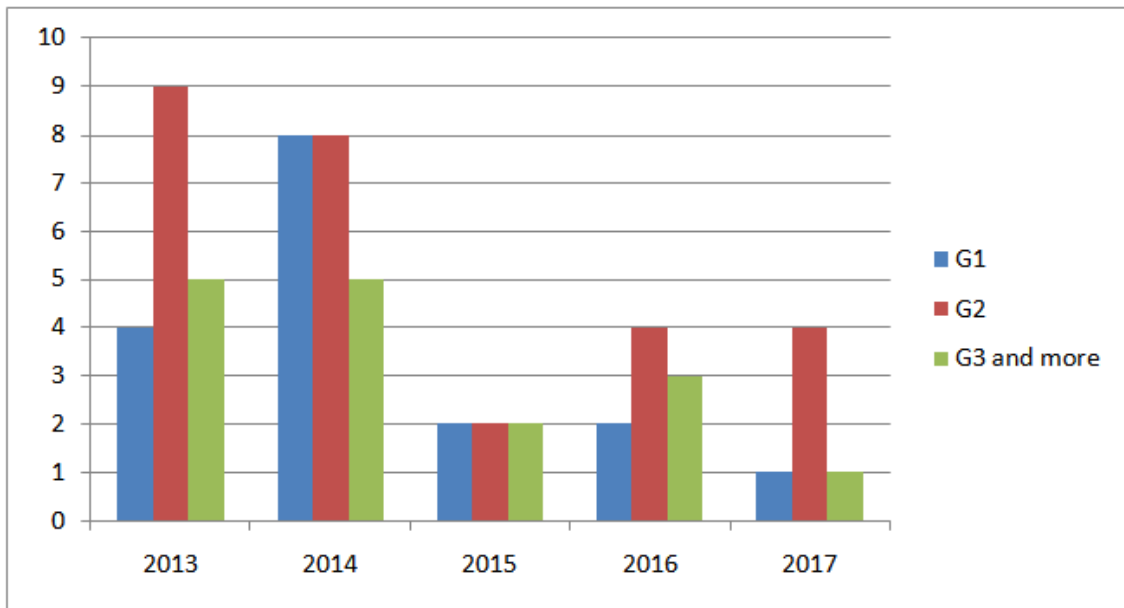
## **III. Results**

No of pregnant women included in the study were 31071 during a 5 year period from 2013- 2017. Majority of women were in the age group of20-30(71.66%)and 16.66 were in <20 years. Among tested 45% were second Gravida and 28.33% were Primigravida and 16% were G3 and more. Out of 31071, 60 women were found to be positive accounting for seroprevalence rate of 0.193%. Educational status among the seropositive women was 50 % illiterate,25% have primary education and 8.3% have higher education.76.66% women belong to urban area , 23.33% belongs to rural area. Even with repeated counselling the number of spouses who came for HIV testing was less.

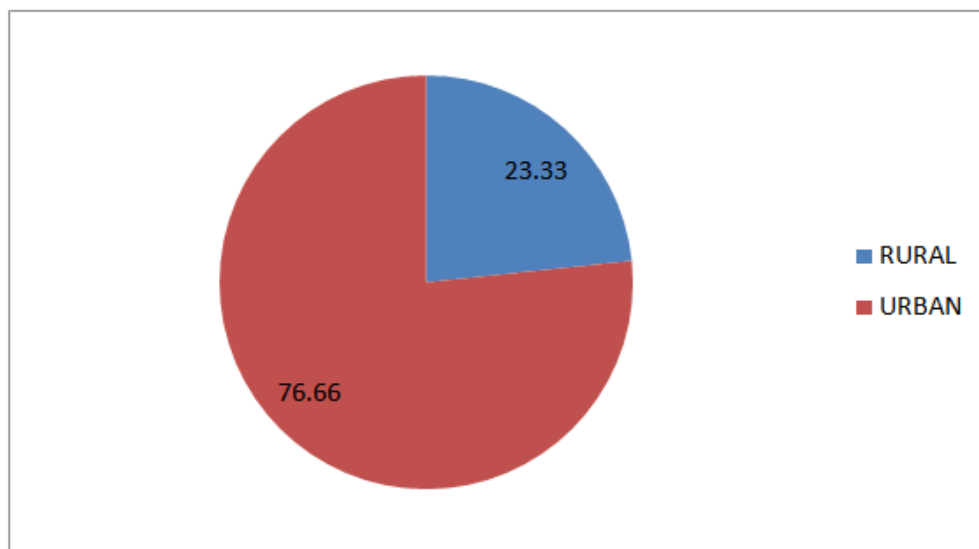
**TABLE 1** Number of ANCS tested and results.

SL.NO	YEAR	ANCS TESTED	SEROPOSITIVE	%POSITIVITY
1	2013	6001	18	0.29%
2	2014	7012	21	0.29%
3	2015	6647	6	0.09%
4	2016	6532	9	0.14%
5	2017	4789	6	0.125%
TOTAL		31071	60	0.193%

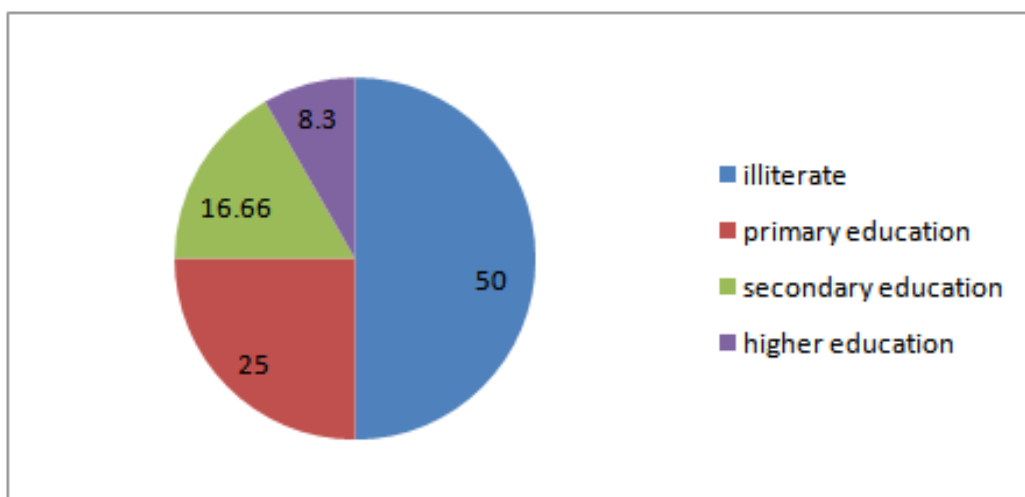
**Diagram 1:** Parity wise distribution of seropositive mothers.



**Diagram 2:** Percentage of seropositive women based on Residential areas.



**Diagram 3:** Percentage of women based on literacy.



**Table 2: Delivery outcome of seropositive mothers**

SL NO	YEAR	TOTAL	MTP (in first 3 months)	I U D	LIVE BIRTHS
1	2013	6	0	0	18
2	2014	11	3	1	17
3	2015	4	0	1	5
4	2016	5	2	0	7
5	2017	4	1	0	5
total		60	6 (10%)	2 (3.33%)	52 (86.66%)

**Table 3: neonatal outcome of live born babies of seropositive mothers**

SLno	Year	No of live born	Death at			Seropositive conversion 18 months	NR live child
			6 weeks	6 months	12 months		
1	2013	18	0	2	0	1	15
2	2014	17	2	1	0	1	13
3	2015	5	1	0	0	1	3
4	2016	7	0	1	0	0	6
5	2017	5	0	0	0	0	5
total		52	3 (5.7%)	4 (7.7%)	0	3 (5.7%)	42 (80.77%)

**Table 4: Various study results of seroprevalence in pregnant women in India.**

Study	Location	Seroprevalence
Sarkate et al (2015)	Maharashtra	0.88%
Khokar et al (2015)	Gujurat	0.39%
Farhana Aljabri et al(2012)	South India	0.27%
Chaudhury et al (2007)	Kolkata, West Bengal	0.17%
Preetkanwal S et al (2016)	Punjab	1.03%
Poonam C et al (2016)	Akola, Maharashtra	1.03%
Our study	Niloufer Hospital, Telangana	0.193%

#### IV. Discussion

The social mists, cultural variations and migration of people between different areas of India make it vulnerable to HIV /AIDS. HIV has spread rapidly from urban to rural area,from illiterate to literate people in

general population. Heterosexual contact remains the major mode of transmission. Parent to child transmission occurs in approximately 25-35% of HIV infection load in India. In the present study 31,071 pregnant women screened for HIV after pre test counselling and informed consent. The average HIV prevalence among women attending antenatal clinic in Telangana state is 0.28(as per HSS 2017). Sarkate et al from Maharashtra studied in 2015 shows prevalence of 0.88%. Khokar et al from Gujarat showed a seroprevalence of 0.39%. Preetaanwals et al (2016) from Punjab showed prevalence of 1.03%.punam c et al 2016 (Maharashtra) showed a prevalence of 1.03 %,Ajith Kumar study in 2014 from Orissa showed prevalence of 0.5%. Our study shows prevalence of 0.193 %. The prevalence was high among new sexually active pregnant women. Different authors have reported different seropositivity rates ranging from 1.1 to 0.19. The figures vary widely between various states of India. In our study out of total 60 HIV positive pregnant women 71.66% were in the age group of 20- 30 years,16.66% were less than 20 years. Among seropositive women 50% were illiterate and 25% have primary education. Out of 50% of literate women 16.66% have secondary education ,and 8.3 % have higher education .The prevalence of seropositivity among illiterate pregnant women was high as compared to literate women. The positive reasons of this high prevalence could be their ignorance about HIV infection and its mode of transmission, inaccessible health care facility. Among HIV positive pregnant women in our present study 45% were second gravida and 28.33% were primigravida and 16% third gravida and more. Our present study findings are comparable to Ajith Kumar et al whose study also shows majority were second gravida. Among 60 seropositive pregnant women 86.66% have live births and 3.33% had intra uterine death (came with IUDs to the hospital) and 10% opted for medical termination of pregnancy in first 3 months only. Out of 52 live births the babies were followed in our ART centre and deaths happened in 5.7%(3) by 6 weeks and 7.7 % by 6 months. The seropositive conversion rate by 18 months is 5.7 % (3 children)in our study there is no correlation between CD4 count of mother and outcome of baby .

**Conclusion:-** Appropriate antenatal screening, intervention and preventive strategies during pregnancy, delivery and breast feeding will bring down the mother to child transmission of HIV. Every pregnant women should be screened for HIV in antenatal clinic. After screening seropositive cases should be treated by Anti retro viral therapy, safe delivery and counselling for breast feeding done.

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