

Original Research Article

Seroprevalence of HIV positive pregnant women in a tertiary care centre

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Abstract

Background: Prevention of Mother to Child Transmission (PMTCT) as part of HIV programs was introduced and has since then been adopted by various countries in Africa and elsewhere. Yet mother-to-child transmission (MTCT) remains the most significant route of HIV infection among children and remains a significant problem in the developing world despite the development and growing availability of effective prevention methods appropriate for resource limited settings

Objectives: This study assessed the seroprevalence rates of HIV among pregnant women at MGMH, Petlaburz from 2013-2017.

Materials and methods: Retrospective study of HIV seropositive pregnant women delivered at MGMH, Petlaburz. Both booked and unbooked cases were included. Management of HIV seropositive pregnant women was done as per NACO guidelines. The data of five year period from January 2013 to December 2017 was evaluated to identify the trends of HIV seroprevalence among pregnant women delivered at MGMH.

Results: The prevalence of HIV infection in this sample 0.75% (in 5 year period) were corresponding to the global prevalence rates (0.8%) but higher than the prevalence of India 0.3%. Percentage of unbooked cases was more in the study (overall 69%) compared to booked cases. Majority of HIV positive pregnant women were in the age group of 20-29 years.

Conclusion: Elevated rates of HIV prevalence found in MGMH were higher compared to national statistics as it is a tertiary care centre.

Key words

HIV, Pregnant women, Positive, Seroprevalence.

Introduction

Prevalence of HIV is the percentage of people living with HIV infection in a given time period. HIV transmission is 74-82% through heterosexual route, 7.4% through homosexual route, 4-7% through blood transfusion, 4-8% intravenous drug users and perinatal route is only 1.5%. Mother to Child Transmission of HIV is the major route of HIV infection in children.

HIV continues to be a major public health issue. In 2016, an estimated 36.7 million people were living with HIV with a global prevalence of 0.8% among adults [1]. Prevalence is driven by the same forces driving the total number of people living with HIV.

HIV remains a major health concern for women and children globally. Worldwide majority of new HIV infections occur in young women. Each year 1.5 million women living with HIV become pregnant. Without effective treatment, up to 45% of HIV infected mothers will transmit the virus to their child usually through breastfeeding, researchers' said.

Women and children are vulnerable to HIV. The majority of new HIV infections in women and children occur in developing countries with limited resources.

There was previous concern that the annual number of new infections remain static as the incidence rates fail to shift from 2010-2015. However a slightly more positive trend is emerging as new infections among adults are now estimated to have declined by 11-16% for the general population between 2010 and 2016 where as there was only an 8% decline between 2010 and 2015.

Progress made across the 69 countries which witnesses a decline in new infections. Some countries have achieved a decline of 50% or more in new HIV infections among adults over last 10 years, while many have made no measurable progress.

HIV prevalence in India

Due to its large population size, India has the third largest HIV epidemic in the world. Compared to neighboring countries India has made good progress in reducing new HIV infections by half since 2001.

In 2016, HIV prevalence in India was an estimated 0.3%. This figure is small compared to most other middle income countries but because of India's huge population (1.324 billion) this equated to 2.1 million PLHIV. Overall India's epidemic is slowing down with a 32% decline in new HIV infections (80,000 in 2016) [2] and a 54% decline in AIDS related deaths from 2007-2015.

NACP- 4 (2012-2017) aims to reduce annual new HIV infections by 50% through provision of comprehensive HIV treatment, education, care and support for the general population and build on targeted interventions for key affected groups and those at HIV transmission.

Preventing mother to child transmission (PMTCT)

Indian government is committed to elimination of new HIV infections among children. India's PPTCT programme has started in 2002. To date there are more than 18,000 sites offering PPTCT services. Based on 2013 WHO guidelines the program aims to initiate antiretroviral treatment for all pregnant and breastfeeding women living with HIV regardless of CD4 count or HIV infection.

Among the states/UTs, in 2015, Manipur has shown the highest estimated adult HIV prevalence of 1.15%, followed by Mizoram (0.8%), Nagaland (0.78%), Andhra Pradesh and Telangana (0.66%), Karnataka (0.45%), Gujarat (0.42%) and Goa (0.4%) [3].

Present study was done to determine the HIV seroprevalence among pregnant women delivered at Modern Government Maternity Hospital, Petlaburz which is a tertiary care hospital over 5 years from 2013 to 2017.

Materials and methods

Place of study: Modern Government Maternity Hospital, Petlaburz.

Period of study: 2013-2017.

Study design: Hospital based retrospective study.

Source of data: All HIV positive pregnant women delivered at Modern Government Maternity Hospital, Petlaburz.

For all the pregnant registered at MGMH pretest counselling was done, informed consent obtained and tested for HIV as per WHO and NACO guidelines. Post-test counseling was done.

Management of HIV seropositive mothers during antenatal period, labor and postnatal period and babies was according to PPTCT guidelines, 2013 by NACO [4].

Mode of delivery, birth weight of the baby, infant feeding during hospital stay, perinatal outcome (mortality and NICU admissions) were observed.

Mothers were counseled and motivated regarding the contraceptive methods available before discharge.

They were asked to come for the follow up of their health status and for HIV status of the baby. Ethical clearance was obtained by institutional ethical committee.

Data was presented in frequency and percentage distribution in tabular and graphical form.

Results

Data was collected and analyzed during five year period from 2013-2017 at Modern Government Maternity Hospital, Petlaburz. Total number of women delivered was 83,095. Among those HIV positive were 625. Total prevalence in 5 year period was 0.75%.

Seroprevalence in 2013 was 0.9%, decreased in 2015 to 0.6% and again increased to 0.7% in 2017 (**Table – 1**).

Table – 1: Year wise prevalence of HIV positive pregnant women delivered.

Year	Total number of cases delivered	HIV positive women	Prevalence
2013	16926	159	0.9%
2014	16077	132	0.8%
2015	16634	101	0.6%
2016	16459	106	0.64%
2017	16999	127	0.7%

Table - 2: Booked vs unbooked in present study.

Year	Booked	Unbooked	Total
2013	62 (39%)	97(61%)	159
2014	42 (32%)	90 (68%)	132
2015	27 (27%)	74 (74%)	101
2016	32 (30%)	74 (70%)	106
2017	29 (23%)	98 (77%)	127
Total	192(31%)	433 (69%)	625

Percentage of unbooked cases was more and increasing year by year being 61% in 2013 to 77% in 2017. Overall unbooked cases percentage in 5 years is 69% (**Table – 2**).

Majority of HIV positive pregnant women were in the age group of 20-24 years (49%) and 25-29 years (40%) as per **Table - 3**.

Table - 3: Age wise distribution.

Age (years)	2013	2014	2015	2016	2017	No. of cases	%
<20	4	1	3	2	4	14	2.2%
20-24	78	67	55	53	54	307	49%
25-29	68	50	36	42	53	249	40%
30-34	8	12	6	8	14	48	7.6%
≥35	1	2	1	1	1	6	0.1%

Table - 4: Different studies reported different seroprevalence in various states of India.

Study	Year	Location	Seroprevalence
Gupta, et al. [5]	2007	North India	0.88%
Nagdeo, et al. [7]	2007	Maharashtra	0.72%
Parameshwari, et al. [8]	2009	Tamil Nadu	0.70%
Mandel, et al. [9]	2010	West Bengal	0.56%
Devi, et al. [10]	2012	Andhra Pradesh	0.45%
Sarkate, et al. [11]	2015	Maharashtra	0.88%
Patil, et al. [12]	2016	Maharashtra	0.44%
Preetkanwal S, et al. [13]	2016	Punjab	1.03%
Present study	2017	Telangana	0.75%

Discussion

In present study, total number of pregnant women delivered in 5 years (2013-2017) was 83,095. Seroprevalence of HIV was found to be 0.75%.

The global HIV seroprevalence is 0.8%. The average HIV adult prevalence in India is 0.26% in 2015. Among women prevalence is 0.22%. Manipur has shown the highest estimated adult HIV prevalence of 1.15% followed by Mizoram (0.8%), Nagaland (0.78%), Andhra Pradesh and Telangana (0.66%).

Our institute HIV seroprevalence is higher than the national prevalence (0.26%) but the difference is less when compared to state prevalence (0.66%), and comparable to global prevalence (0.8%).

Kulkarni, et al. (2013) [6] and Nagdeo, et al. [7], (2007) from Maharashtra observed the seroprevalence rates of 0.76% and 0.72% respectively which are comparable to our study (Table – 4).

In our study percentage of unbooked cases was more and increased from 61% in 2013 to 77% in 2017. This might be the reason for increasing prevalence despite decreased adult seroprevalence national wide. MGMH being a tertiary care centre gets referral from neighboring villages.

In our study, majority of HIV seriously I've cases are in the age group of 20-29 years. Percentage of cases in 20-24 years age group is 49% and in 25-29 years age group is 40%. This is because of high reproductive activity in that age group.

Conclusion

Our seroprevalence rates are higher compared to national prevalence. Because MGMH is a tertiary care centre and our study is a hospital based study with limited sample size which is not representative of whole India.

As heterosexual contact is the major mode of transmission, it results in growing population of HIV infected women. Mother to Child transmission of HIV infection during pregnancy, delivery or breastfeeding is responsible for more than 90% of pediatric HIV cases.

Effective counseling, early booking, testing of all antenatal women for HIV status, antiretroviral prophylaxis to the mother and the baby, institutional delivery and follow-up with infant testing in postpartum period etc. are required for the successful implementation of PPTCT program.

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