IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 17, Issue 10 Ver. 10 (October. 2018), PP 54-56
www.iosrjournals.org

Decreasing trend of seroprevalence of HIV among pregnant women in Southern Odisha

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ABSTRACT
BACKGROUND
India is ranked third in the world with 2.1 million people living with HIV. The trend of infection especially in young people who have recently become sexually active, is a sensitive marker to track the course of the HIV epidemic. But, it is not possible to measure thr prevalence among all young people of an area.So, prevalence of young women can be an useful alternative. Hence, we conducted a study to find out the seroprevalence of HIV among pregnant women in Southern Odisha.
METHODS
Blood samples from pregnant ladies attending antenatal clinic of a tertiary hospital were collected after informed consent and pretest counselling. All the samples were tested for HIV antibodies as per NACO guidelines over a period of five years from January 2013 to December 2017.
RESULTS
Total 8702 number of women were tested for seroprevalence HIV, among which 0.51%(95% CI) were positive. Out of the HIV seropositive women 57% were belonged to 18-27 years age group.
CONCLUSION
The seroprevalence of HIV among pregnant women was found to be decreasing in Southern Odisha.

Date of Submission: 12-10-2018 Date of acceptance: 27-10-2018

I. Introduction

India is ranked third in the world for AIDS prevalence with 2.1 million people living with HIV. In the year 2016 , around 62,000 people have died from AIDS-related illness in India.[1] However, HIV epidemic in India is slowing down with a 32% decline in new HIV infection and 56% decline in AIDS-related deaths between 2007 and 2015.[2] Ganjam district belonging to Southern Odisha has been identified as one of the 14 most critical districts affected by HIV in the country.[3] Moreover, the prevalence of HIV is changing over time with implementation of different AIDS control organisations. Hence, we conducted a study to find out changing pattern of prevalence of HIV among pregnant women (cases of unprotected sex) attending the antenatal clinic(ANC) of a tertiary care hospital of Southern Odisha.

II. Materials & Methods

This retrospective study was done by collecting and analysing results of HIV testings from January 2013 to December 2017.

III. Study Population

INCLUSION CRITERIA
All pregnant ladies of the group between 18 years to 45 years (Reproductive age group) attending ANC clinic of the tertiary care hospital were included in the study group.
EXCLUSION CRITERIA
Non pregnant ladies and ladies not in the reproductive age group were excluded from the study group.

IV. Methodology

After counseling and informed consent of pregnant ladies 5ml of venous blood was collected in a plain sterile container. Blood was allowed to clot for 30 minutes at room temperature and serum was separated after

centrifugation. The serum samples were tested for HIV-antibody as per NACO guidelines. Detection of HIV-antibody was done by the three ELISA/Rapid/Supplemental tests (strategy III) and the test result was disclosed to the patient after post –test counselling.[4]

V. Observation & Results

Data of pregnant ladies attending ANC clinics were collected over a period of 5 years and analysed. Total 8702 number of pregnant women were tested among whom 0.51 %(95% ci 0.18-1.17%) were seropositive for HIV antibodies (Table-1). Out of 45 number of seropositive cases majority(57%) belonged to age group of 18-27 years followed by the age group of 28-37 years. All the pregnant ladies older than 38 years were found to be HIV- seronegative(Table-2).

Seroprevalence of HIV among pregnant ladies in the years 2013,2014,2015,2016 and 2017 was found to be 0.71%(95% CI 0.08-1.07%),0.77%(95% CI 0.05-1.05%),0.52%(95% CI 0.19-1.18%), 0.30%(95% CI 0.39-1.38%) and 0.23%(95% CI 0.59-1.58%) respectively (Table-1).

VI. Discussion

Regardless of the state of epidemic, prevalence of infection should be collected from population that are more or less representative of the general population such as pregnancy, as well as considered to be at risk of infection and transmission. The importance of estimation of sero-prevalence among pregnant ladies relies on the assumption that HIV prevalence trends among them are representative of HIV trends among all adults aged 15-49 years.

Overall sero- prevalence of HIV among pregnant ladies was found to be 0.51% (95% CI 0.18-1.17%) which is comparable with 0.88% of a North Indian study conducted for four years from 2003 to 2006.[5] On the other hand , a study conducted from 2004 to 2007 in South India on seroprevalence of HIV among pregnant women has shown to range from 0.25% to 3.25%.[6] Majority (57%) of the HIV- seropositive women of our study belonged to 18-27 years age group while 43% were of 28-37 years age group. Similar study from North India has been noticed showing HIV- seropositivity of 41.9% and 25.8% among pregnant ladies belonging to 20-24 years and 30-34 years range group respectively. [5] As most common method of transmission in pregnant ladies is by sexual route, increased seroprevalence among young newly sexual active age group can be well explained. [7,8]Not a single case of seropositivity was detected among ladies older than 38 years which is similar to the data cited in North Indian study.[5] This might be due to the fact that, older less fertile women of more than 38 tears age group might be least exposed to sexual transmission. Seroprevalence of HIV-in the years 2013 and 2014 (0.71% and 0.77% respectively) was almost same..But it gradually decreased in the next three years 2015,2016 and 2017 to 0.50%(95% CI 0.19-1.18%),0.30%(95% CI 0.39-1.38%) and 0.2% (95% CI 0.59-1.58%) respectively (Figure-1) . Such type of decreasing trend in prevalence of HIV among pregnant ladies from 1.7% to 1.1% during the years 2000 to 2004 was also found in a study.[9] Although prevalence of HIV was very high it was found to be decreasing from 6.5% to 5.3% among pregnant women of Sub-Saharan Africa.[10] This gradual decline in seroprevalence of HIV among pregnant ladies might be due to increased safe sex education and awareness of people towards risk, transmission and prevention of HIV; conducted by various organisations including the State AIDS Control Organisation (OSAC) for which it has also been awarded by NACO (National AIDS Control Organisation) for care, support and treatment of PLHA (people living with HIV/AIDS) in the year 2018.The states where HIV seroprevalence is more than 1% in women attending antenatal clinic are categorised as high prevalence state whereas those with less than 1% as low prevalence state. The overall prevalence of HIV among pregnant ladies attending antenatal clinic in India is 0.35%. It is reported to be highest in Nagaland(0.88%) followed by Mizoram(0.68%),Manipur(0.64%),Andhra Pradesh(0.59%),Karnataka(0.53%),Chhatishgarh(0.51%),Gujurat(0.50%),Maharastra(0.40%),and Punjab(0.37%).[11] Our study was carried out among women attending ANC in a tertiary care hospital of southern part of Odisha and was found to be 0.51%.But similar studies from other parts of the state would help in determining the prevalence rate of HIV in the state.

VII. Conclusion

The seroprevalence of HIV among pregnant women was found to be decreasing in South Odisha. It should be tried to lower this to as minimum as possible so that pediatric HIV infections will be prevented by early screening of HIV in pregnancy, necessary chemotherapy, safe delivery practices and modified infant feeding.

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Table-1 SHOWING YEAR WISE DISTRIBUTION OF CASES

Year	Total number of patients	Number of Seropositives	Prevalence(95% CI)
2013	1830	13	0.71%(0.08-1.07)
2014	1795	14	0.77%(0.05-1.05)
2015	1975	10	0.50%(0.19-1.18)
2016	1627	05	0.30%(0.39-1.38)
2017	1475	03	0.2%(0.59-1.58)
Total	8702	45	0.51%(0.18-1.17)

Table -2 Showing Age Range Of HIV-Seropositive Women

Age	Number	%age
18-27 years	26	57
28-37 years	19	43
More than 38 years	Nil	Nil
Total	45	100

Dr M V Narasimham, MD. "Decreasing trend of seroprevalence of HIV among pregnant women in Southern Odisha." IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 17, no. 10, 2018, pp 54-56.