Seroprevalence of HIV in Pregnant Women Attending Antenatal Clinic In A Health Institution In Ahmedabad, Gujarat

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Abstracts: Background: The issue of HIV/AIDS and women's health can be viewed in the context of (1) the unravelling epidemic, (2) the screening of women for HIV and provision of ongoing surveillance, and (3) hope for the future, even though the battle against HIV has not won. Estimating the seroprevalence of HIV in a low risk population such as pregnant women provides essential information for an effective implementation of AIDS control programs, and also for the monitoring of HIV spread within a country. This study was conducted to establish the prevalence rate of HIV amongst pregnant women attending antenatal clinic. Methods: Blood samples from pregnant women attending antenatal clinics in Sola Civil Hospital and G.M.E.R.S. Medical College, Ahmedabad, were collected after informed consent and pre test counselling. The samples were tested for HIV antibodies as per the WHO guidelines. Data was collected and analyzed for a period of 1 year from1st April 2010 to 31st March 2011.Results: Of the 3101 pregnant women tested in one year 11(0.35%) women were found to be HIV seroreactive. Conclusion: The economic and demographic consequences of the spread of HIV/AIDS are inexorable and awesome. The prevalence rate recorded in this study suggests that HIV screening of pregnant women should be an on- going exercise. Development of programs with an integrated approach to inducing behavioural change, promotion of use of condoms and controlling Sexually Transmitted Diseases(STD)'s may reduce the infectivity of HIV transmitters and susceptibility of HIV exposed persons.

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Key words: HIV, PPTCT, Seroprevalence of HIV, Pregnant Women

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Introduction: HIV-1 infection, initially described as "Slim disease" was first recognized in Uganda in 1982. By the end of 1980s, disease associated with severe immune suppression (due to HIV/AIDS), such as oral candidiasis, tuberculosis, epidemic Kaposi's sarcoma, cryptococcal meningitis, pneumocystis carinii pneumonia, toxoplasmosis and skin infections were seen with increased frequency.[1] HIV was first detected in India in 1986 in Chennai, the capital of Tamil Nadu. [2, 3, 4]

There are two types of Human Immunodeficiency Virus (HIV); these includes; type-1 and type-2. HIV-1 is the primary cause of human Acquired Immunodeficiency Syndrome (AIDS), though both types are associated with disease. Furthermore HIV-1is responsible for the HIV and AIDS pandemic, while HIV-2 circulates in certain West African countries.[5] There is rising prevalence of Human immunodeficiency virus (HIV) worldwide. India is categorized as a low prevalence nation for HIV with a seroprevalence of less than 1% among the adult population. The country experienced a sharp increase in the estimated number of HIV infection from a few thousand in the early 1990s to around 5.2 million adults and children living with HIV/AIDS in 2005.[4] According to an estimate from the National HIV Sentinel Surveillance (United Nations General Assembly Special Session [UNGASS], 2010), 2.4 million Indians are HIV positive.[3] In view of our large population pool of one billion plus, a mere 0.1 per cent increase in the prevalence rate will raise the number of person living with HIV by one half million.[4]

In Indian the Predominant mode of HIV transmission is through heterosexual contact, therefore, unsuspecting women are at high risk of getting the infection.[4] UNAIDS states that mother to child transmission is the largest source of HIV infection in children below the age of 15 years.[6] According to NACO, it is estimated that about 30,000 infants acquire HIV infection each year.[6] HIV infection among pregnant women poses particular risk to their family, offspring and health workers at the time of delivery.[7, 8] Perinatal transmission

accounts for 91% of all AIDS cases among children in the United States[9] and 90% of infection in sub-Saharan Africa.[7, 8] Pregnancy does not adversely affect HIV progression or survival. The percentage of CD4+ cells declines steadily in women infected with HIV-1, it is due to haemodilution and it resolves in post partum period.[1, 10]

Material and Methods: Study area and population: This study was carried out in medical college associated hospital. A total of 3101 pregnant women attending ante-natal clinic between periods April 2010 to March 2011 were screened for HIV infection by rapid test. Verbal informed consent was obtained from each patient prior to sample collection.

Collection and processing of the sample: Five milliliter of blood was collected from each patients visiting antenatal OPD by venepuncture into plain container. Blood was allowed to clot for 30 minutes at room temperature and serum was separated after centrifugation at low speed. HIV screening was carried out using rapid test. Instruction from manufacturer was strictly followed in the HIV test analysis. Positive tests were confirmed by ELISA testing. Positive test results disclosed only after post test counseling of patient.

Result: Data was collected and analyzed from total of 3101 pregnant women who were tested during the period of one year from April 2010 to March 2011. Total 11(0.35%) pregnant women found HIV positive. The age group of 21-25 and 26-30 years had the highest number of HIV positive cases. (Table no.1) Majority of HIV positive cases were attending the antenatal clinic in 2nd and 3rd trimesters. (Table no. 2)

Table 1: Table shows percentage of HIV positive cases in different age groups.

Age group of HIV positive pregnant women	Number of positive cases	Percentage
18-20	1	9.09%
21-25	3	27.27%
26-30	4	36.36%
31-35	3	27.27%
>35	0	0%

Table 2: Table shows percentage of HIV positive cases in different trimester of pregnancy at the time of their attendance of ANC clinic and PPTCT

Trimester of pregnancy	Number of positive cases	Percentage
1st	1	9.09%
2nd	5	45.45%
3rd	5	45.45%

Discussion: In our study the prevalence in pregnant women is 0.35%. That is lower than the different studies carries out in different parts of India. (Table no. 3)

Table 3: Table shows rate of prevalence of HIV in pregnant women in different studies from different parts of India

Name of study	Area of India	Prevalence rate
Ashtagi G.S. et al [6]	Belgaum	0.70%
Gupta S. et al[4]	Delhi	0.88%
Parameshwari S. et al[11]	Namakkal District	0.77%
Celentano D. D. et al[12]	Maharstra	1.23%
Our study	Ahmedabad, Gujarat	0.35%

In Gujarat at PPTCT, about 5.43 lakh pregnant women were registered for ante natal care during the year 2010-11 out of which 5.06 lakh underwent for HIV testing, out of which 840 found positive. The overall positivity reported at PPTCT is 0.17%. In the year 2010-11 Surat city has reported highest positivity of 0.37% followed by Patan 0.32%,while Dahod reported the lowest positivity of 0.05%[13] (Table no. 4)

Prevalence of HIV in pregnant ladies in our study is 0.35%, which is due to that pregnant women attending his government hospital are poor, illiterate, migrated from outside of Gujarat and lives in the area where people with high risk behavior resides.

Table no 4: Table shows percentage of HIV Positive pregnant women in different districts of Gujarat.

Sr. no.	District	Total tested for HIV in Pregnant women	HIV positive pregnant women	Percentage
1	Ahmedabad	22438	26	0.12%
2	AMCACS	43848	118	0.27%
3	Amreli	8453	8	0.09%
4	Anand	13835	27	0.20%
5	Banaskantha	26871	44	0.16%
6	Bharuch	6118	10	0.16%
7	Bhavnagar	29286	30	0.10%
8	Dahod	21939	11	0.05%
9	Dang	1668	1	0.06%
10	Gandhinagar	15661	24	0.15%
11	Jamnagar	13763	27	0.20%
12	Junagadh	26757	29	0.11%
13	Kachchh	9020	19	0.21%
14	Kheda	23288	28	0.12%
15	Mehsana	37944	46	0.12%
16	Narmada	637	2	0.31%
17	Navsari	14537	13	0.09%
18	Panchmahal	9209	8	0.09%
19	Patan	10922	35	0.32%
20	Porbandar	7974	7	0.09%
21	Rajkot	26185	44	0.16%
22	Saberkantha	17939	49	0.27%
23	Surat DAPCU	27775	26	0.09%
24	Surat SAPCU	30567	114	0.37%
25	Surendranagar	14743	12	0.08%
26	Vadodara	32201	68	0.21%
27	Valsad	12335	14	0.11%
28	Present study (Sola Civil Hosp.)	3101	11	0.35%

Human Immunodeficiency Virus (HIV) infection in women is an increasingly important issue for public health. In late 1994, it was estimated that worldwide 40% of the 17 million prevalent HIV infections in adults were in women compared with only 25% in 1990. Young women of reproductive age are becoming infected faster than any other population group, with serious direct and indirect implication. For public health reasons, it is essential to be able to make robust estimates of the burden of infection in women.[14]

India socio-economic status, traditional social ills, cultural myths on sexuality and a huge population of marginalized people make it extremely vulnerable to HIV/AIDS.[4] In a country of over one billion population and 5.2 million HIV positive adults in the 15-49 years of age groups, India is now faced with multiple HIV epidemics. Heterosexual contact remains the major mode of transmission, thereby resulting in a growing population of women.[4]

According to the 2011 UNGASS HIV country report, India's epidemic is concentrated with most-at-risk population (MARPS), with prevalence, substantially higher among these populations than in the general population. Prevalence also varies dramatically by district, state and region with numerous isolated pockets of high prevalence infection.[3] It is also correlated with our study as prevalence of Ahmedabad city is 0.12% but prevalence of our study in our hospital is high (0.35%). The global incidence of HIV infection declined by 19% between 1999 (the year of peak incidence) and 2009. In 2009, 3,70,000 children were infected with HIV through mother to child transmission. This is a drop of 24% from five years earlier.[15] Despite the down ward revision of the estimated national prevalence of HIV infection in India from 5.2 million in 2005 to 2.5 million in 2007 and 2.4 million in 2010, the burden faced in providing national HIV prevention and care remains massive.[12]

The National AIDS control organization (NACO) of India estimated that some 60% of cases of HIV infection are found in rural areas, where about half of India's citizens live.[12] In rural and urban areas, women of reproductive age are principally at risk for HIV acquisition through marriage- this risk reflects their husband's premarital behavior and sexual premarital behavior and sexual concurrency during marriage.[12] So for early case finding of HIV and for prevention of mother to child transmission of HIV screening of all pregnant ladies should be an ongoing process.

Conclusion: HIV seroprevalence in pregnant women has declined in India, but there are some areas where people with high risk behavior leave. So HIV screening in antenatal clinic should be an ongoing process.

References:

1. Pius O. HIV/AIDS and women's health in Uganda: Lingering Gender Inequity. Women Health. JOGC November 2006; 980-982.
2. Shrotri A, Shankar AV, Sutar S, Joshi A, Suryawanshi N, Pisal H, Bharucha KE, Phadke MA, Bollinger RC, Sastry J. Awareness of HIV/AIDS and household environment of pregnant women in Pusne, India. International Journal of STD and AIDS 2003; 14: 835-839.
3. HIV/AIDS health profile. USAID/INDIA. http://www.usaid.gov/in/
4. Gupta S, Gupta R and Singh S. Seroprevalence of HIV in pregnant women in North India: a tertiary care hospital based study. BMC infectious disease 2007, 7:133.
5. Waidi FS, Moses OA, Temitope CS. Human immunodeficiency virus specific antibodies among married pregnant women and female sex worker attending voluntary counseling and HIV testing centre in Abuja, Nigeria. African Journal of Biotechnology vol. 8(6), pp. 941-948, 20 March, 2009.
6. Ashtagi GS, Metgud CS, Walvekar PR and Naik VA. Prevalence of HIV among rural pregnant women attending PPTCT services at KLE hospital, Belgaum. Al Ameen J Med Sci (2011) 4(1): 45-48.
7. Egesie UG, Mbooh RT. Seroprevalence of Human Immunodeficiency Virus (HIV) infection in pregnant women in Amassoma, Nigeria. African Journal of Biomedical Research, vol. 11 (2008); 111-113.
8. Imade P, Ibadin K, Eghafona N, Enabulele O and Ophori E. HIV seroprevalence among pregnant women attending antenatal clinic in a tertiary health institutions in Benin city, Nigeria. Macedonian Journal of Medical sciences. 2010 March 15; 3(1): 43-45.
9. Sindy MP and Denk CE. Screening of HIV in pregnant women in New Jersey. Pregnancy risk assessment monitoring system (PRAMS). wwwnj.gov/health/fhs/professional/prams.shtml.
10. Gray GE and Mclntyre JA. HIV and pregnancy. Practice. BMJ 5 may 2007; vol 334: 950-953.
11. Parameshwari S, Jacob MS, Vijaykumari JJ, Shalini D, Shushil MK, Shivkumar MR. A programme on prevention of mother child transmission of HIV at Government hospital Tiruchegonda taluk, Namakkal district. Indian J Com Med 2009; 34(3): 261-263.
12. Celentano DD. Is HIV screening in the labor and delivery unit feasible and acceptable in low-income setting? PLOS Med 2008; 5(5)e107
13. CIMS Yearly bulletin. Gujarat State AIDS Control Society 2010-2011.www.gsacsonline.org.
14. Boisson E, Nicoll A, Zaba B, Rodrigues LC. Interpreting HIV seroprevalence data from pregnant women. Journal of Acquired Immune Deficiency Syndrome and Human retrorology. 15 December 1996; Vol 13(5): 434-439.
15. UNAIDS. Report on the global AIDS epidemic-2010. www.usaids.gov.2010