ABSTRACT

Objectives: To determine the prevalence of HIV infection among the patients attending antenatal clinic (ANC) of a teaching hospital, Hyderabad. Materials and Methods: A total of 6,582 serum samples were collected from pregnant women attending the antenatal clinic during the period from January 2013 to December 2015. All the specimens were tested according to WHO guidelines. Results: Among 6,582 pregnant women, 19 (0.3%) women were seropositive for HIV. Seropositivity of HIV among pregnant women was increased suddenly in the year 2015, out of 2,078 specimens, 12 (0.6%) were reactive for HIV. Most of the patients were belongs to the age group of 21-30 years (0.36%), followed by age group 31-40 years (0.23%). None of the pregnant women were reactive for HIV in the age group 41-45 years. Conclusion: HIV seroprevalence among pregnant women in this region is decreasing over a 3 years period. But there were limitations in surveillance methodologies; our study population was not representative of whole Telangana state. So more studies are required to identify risk factors and the importance of HIV and treatment programs. Increasing awareness of transmission and regular screening for HIV among pregnant women is recommended.

Keywords: Antenatal clinic (ANC), Human Immunodeficiency Virus (HIV).

INTRODUCTION

Human immunodeficiency virus (HIV) / Acquired immunodeficiency syndrome (AIDS) have become one of the major public health problems for the Indian communities for two decades. India is categorized as low HIV seroprevalence country, but it has the 3rd largest number of people living with HIV. In India, the major mode of HIV transmission is through unsafe heterosexual activity, therefore, women are at high risk of acquiring HIV infection [1, 2, 3].

According to World Health Organization (WHO) and United Nations Program on HIV/AIDS (UNAIDS), worldwide, 40 million people are affected and living with HIV infection of which 39% are females and 3.5% are children [4,5]. According to an annual report by NACO, every year 30000 infants are born with HIV [6]. This report reveals that mother to child transmission is the largest source of HIV infection among children. The transmission of HIV can occur by exposure to blood and body fluids at the time of childbirth, transplacentally before birth, or postpartum through breastfeeding [7]. According to the other studies done by Ukey et al.[8] noting transmission of HIV infection from mother to child is ranges from 25% to 45% in developing countries and 15% to 25% in developed countries, respectively. Under NACP, prevention of parent to child transmission of HIV (PPTCT) program has been started in India in the year 2002. This aims to reduce the perinatal transmission of HIV. This program is one of the largest national antenatal screening programs in the world [9, 10].

The present study aimed to assess the seropositivity of HIV infection among pregnant women visiting antenatal clinic (ANC) in a teaching hospital at Hyderabad.

METHODS AND MATERIALS

The present study was conducted in Malla Reddy Institute of Medical Sciences, Hyderabad. A total of 6,582 serum samples were obtained from pregnant women attending the antenatal clinic during the period from January 2013 to December 2015.

5 ml of venous blood was collected from the anti-cubital vein from each pregnant woman, placed in a plain sterile bottle. Serum was obtained following centrifugation. All the serum samples were tested for the qualitative detection of HIV antibodies by using a rapid chromatographic immunobassay test kit by (Genomix HIV 1-2-3 (Tri-line) Antibody Detection Test kit). All HIV reactive samples were confirmed by using Enzyme-linked immunobassay kits for anti-HIV (ELISA 3rd generation, J. Mitra & Co. Pvt. Ltd, New Delhi, India). The above investigations were carried out according to manufacturer’s instructions.

RESULTS

A total 6,582 pregnant women attending antenatal clinic were examined in this study. 19 (0.26%) pregnant women were reactive for HIV during 3 years study period. In the year 2013, HIV reactivity was 4 (0.15%) out of 2,611 specimens, 3 (0.15%) samples from pregnant women were reactive among 1, 893 specimens in 2014. HIV seroprevalence among pregnant women increased tremendously in the year 2015, among 2,078 specimens, 12 (0.6%) were reactive for HIV (Table 1). The recorded age range was 18-45 years old and the age frequency distribution of infection is shown in table 2. Most of the HIV reactive pregnant women were in between 21-30 years age group (0.36%), followed by 31-40 years age group (0.23%). Lowest prevalence was recorded in the 18-20 years age group, 01(0.2%) and none in the age group of 41-45 years.

DISCUSSION

Prevalence of Human Immunodeficiency Virus is increasing worldwide. HIV infection among pregnant women carries risks to their family, offspring and health workers at the time of delivery. Mother to child transmission of HIV is a major problem, because of high morbidity and mortality rate in HIV infection [11]. In India, more than 1 billion population and 5.2 million HIV reactive individuals in the age group of 15-49 years. Heterosexual transmission of HIV is the major route, resulting in an increasing population of HIV-infected women [12]. The present study showed that 0.26% pregnant women were reactive for HIV.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of specimens</th>
<th>HIV Reactive pregnant women</th>
<th>HIV Non-reactive pregnant women</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>2,611</td>
<td>4 (0.15%)</td>
<td>2,607 (99.8%)</td>
</tr>
<tr>
<td>2014</td>
<td>1,893</td>
<td>3 (0.15%)</td>
<td>1,880 (99.8%)</td>
</tr>
<tr>
<td>2015</td>
<td>2,078</td>
<td>12 (0.58%)</td>
<td>2,066 (99.4%)</td>
</tr>
<tr>
<td>Total</td>
<td>6,582</td>
<td>19 (0.3%)</td>
<td>6,563 (99.7%)</td>
</tr>
</tbody>
</table>
Table 2: HIV seroprevalence in pregnant women in different age groups.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Number of samples screened for HIV (%)</th>
<th>HIV sero-reactivity (%)</th>
<th>Reactive (%)</th>
<th>Non-reactive (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-20</td>
<td>459 (6.97%)</td>
<td>01 (0.2%)</td>
<td>458 (99.8%)</td>
<td></td>
</tr>
<tr>
<td>21-30</td>
<td>3,247 (49.33%)</td>
<td>12 (0.36%)</td>
<td>3,235 (99.6%)</td>
<td></td>
</tr>
<tr>
<td>31-40</td>
<td>2,548 (38.71%)</td>
<td>06 (0.23%)</td>
<td>2,542 (99.7%)</td>
<td></td>
</tr>
<tr>
<td>41-45</td>
<td>328 (4.98%)</td>
<td>00 (0%)</td>
<td>328 (100%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6,582</td>
<td>19 (0.28%)</td>
<td>6,563 (99.7%)</td>
<td></td>
</tr>
</tbody>
</table>

According to the NACO report; Andhra Pradesh, Karnataka, Tamil Nadu, Nagaland, Maharashtra are categorized into high prevalence states where more than 1% women attending antenatal clinic are reactive for HIV [13]. Our data represent different result where prevalence rate of HIV in pregnant women was significantly lower than the NACO data. But in this case, the difference may be due to the surveillance methodologies between NACO and our hospital based study over a period of 3 years. The prevalence rate of HIV markedly increased year wise, we found HIV prevalence rate was 0.15% in 2013-2014 to 0.6% in 2015. The prevalence of HIV reactivity was higher in sexually active age group 21-30 years, followed by 31-40 years. According to the study done by Ukey et al [14] and Swati Gupta et al [15], most infected age group was 18-24 years. Kumar et al reported a decreasing trend in HIV prevalence in pregnant women age group 15-24 years in South India after antenatal counseling and awareness programs were initiated. Although we tested only 459 pregnant women in the age group of 18-20 years, whereas 01 (0.2%) pregnant women was reactive for HIV. Lastly, in the present study we found only 328 pregnant women in the age group 41-45 years, were tested for HIV over a period of 3 years. We could not find any HIV reactivity in pregnant women in this age group.

CONCLUSION

Our study shows decreasing trend of HIV prevalence in Telangana, India. However, this study is only a hospital-based study with limited sample size, which is not representative of whole Telangana state, the data show a decreasing trend of HIV spread in housewives and pregnant women. More studies are required to know the exact HIV status among pregnant women in this region. So it is recommended regular screening of pregnant women and increase awareness of HIV transmission among the population is mandatory.

ACKNOWLEDGMENT

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CONFLICT OF INTEREST: None to Declare.

REFERENCE


