

*Original Article***Seroprevalence of human immunodeficiency virus (HIV) in pregnant women in Zahedan, Southeastern Iran***Batool Sharifi-Mood\*, Fatemeh Keikha\*\****Abstract**

**BACKGROUND:** Approximately 80% of HIV infections in women occur primarily during their reproductive years. Hence, pregnancy provides a unique opportunity for implementing prevention strategies against HIV infection. If we define the seroprevalence of infection in pregnancy, the effective and timely intervention will reduce the transmission of infection to newborns. To determine the prevalence of HIV infection in pregnant women in Zahedan, we conducted this study.

**METHODS:** From January 2006 to November 2006, we evaluated a series of pregnant women referred to antenatal clinics in Zahedan, for obstetric consultation. Blood samples of all pregnant women were collected and tested for HIV antibodies by ELISA method. Positive samples were retested by Western-blot.

**RESULTS:** A total of 1783 cases were evaluated. Three cases were found to be HIV seroreactive. Infection was confirmed in one case (0.05%).

**CONCLUSIONS:** Upon the results emerged from this study, we don't recommend HIV screening on each pregnant woman in this area. HIV testing is recommended only for those with risk factors.

**KEYWORDS:** Seroprevalence, human immunodeficiency virus infection, pregnant women.

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Today, HIV infection is increasing at an alarming rate especially in Asian developing countries.<sup>1</sup> HIV infection in South East Asian region has become a major challenge to public health. Now, AIDS has shifted its epicenter from Africa to Asia and is no longer a predominantly male epidemic.<sup>1,2</sup> In Iran, the number of adults and children living with HIV/AIDS (reported cases) at the end of September 2006 was 13357 cases and more than 70% of the cases were in the age group of 20-49 years and 94.5% were male.<sup>3</sup> Although, shared needle and syringe in injection drug users (IDUs) is the most common route for the

transmission of HIV infection in Iran, but heterosexual transmission is the most common route for contracting HIV infection in women.<sup>3,4</sup> Mother to child transmission is reported in 0.5% of total cases with HIV/AIDS in Iran.<sup>3</sup> Approximately 80% of HIV infections in women occur primarily during their reproductive years. Hence, pregnancy provides a unique opportunity for implementing prevention strategies against HIV infection.<sup>2,5</sup> If we determine seroprevalence in pregnancy, the effective and timely intervention will reduce the transmission of infection to newborns.<sup>4,5</sup> Since, we do not know the prevalence of HIV

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infection in the pregnant women, we decided to determine it.

## Methods

In this cross-sectional study from January 2006 to November 2006, the pregnant women attending antenatal clinics in Zahedan (a city in Iran Southeast) for obstetric consultation were counseled for HIV testing. Eighty-nine percent of all pregnant women referred to antenatal clinics, accepted to participate in this study. Informed and written consent, which defined that they will refer to HIV clinic for follow-up and another testing, if the primary test is reactive, was obtained. Blood samples from all pregnant women were collected for HIV testing. Test was performed by ELISA method, using Genelabs plus HIV Ag-Ab Kit (Biorad, France). Positive samples were retested by western-blot using HIV blot 2.2 kit (Genelabs Diagnostic, Singapore). Also VDRL test was done in the seroreactive women and their spouses.

## Results

A total of 1783 pregnant women (mean age of 27 years, age range of 15-51 years) attending antenatal clinics were enlisted and tested for HIV antibodies. Three cases found reactive with ELISA test. The infection was confirmed in only one case by the second test (0.05%). Three spouses of seroreactive women were tested for HIV antibodies and only the spouse of HIV patient was positive. VDRL test was positive in this woman and her husband, which was confirmed by the second test. This family had a history of immigration to one of the neighbor countries for 3 years.

## Discussion

Transmission of HIV infection from mother to child is a major concern for developed as well as developing countries.<sup>5</sup> In a population with an estimated prevalence of HIV infection of > 1%, all adults including pregnant women should be offered testing because of the availability of treatment to reduce the likelihood of mother-to-child transmission.<sup>2,5</sup> On the other

hand, according to the American guidelines for screening of HIV and AIDS, pregnancy is an indication for HIV testing.<sup>5</sup> In Iran, prevalence rate of HIV/AIDS in total population and high-risk group (IDUs) is < 1% and > 5%, respectively.<sup>3</sup> It indicates that prevalence rate of HIV/AIDS in Iran is at concentrated level.<sup>2,3</sup> In Iran Southeast, prevalence of HIV infection in total population is 0.02%.<sup>3,4</sup> Our study showed that HIV seroprevalence rate was 0.05% in pregnant women. In this situation, it is difficult to say, there is no indication for HIV testing on each pregnant women. HIV testing should be done if there is a history of a risk factor. In Iran, less than 6% of cases with HIV/AIDS are found in women and transmission of HIV infection from mother to child is seen in 0.5% of total patients with HIV/AIDS.<sup>3</sup> High prevalence rate is reported in India (1.38%).<sup>2</sup> But, very high prevalence rate were reported from South East Asian Countries like Thailand (8%) and Myanmar (7%).<sup>6</sup> This high prevalence among pregnant women reveals the necessity of HIV screening in these countries.<sup>2,6</sup> HIV seroprevalence of more than 1% in pregnancy is alarming for the health authorities, which indicates that more stress should be given on preventive measures.<sup>5</sup> The efficiency of transmission of HIV from an infected mother to infant ranged from 15% to 25% in developed countries and 25% to 45% in developing countries.<sup>2</sup> Two-thirds of the transmission occurs late in pregnancy or during labour and delivery.<sup>2,5</sup> The risk of acquiring infection through breast milk has been also documented.<sup>7-9</sup> Rise of HIV infection in women may increase the pediatric AIDS cases, which may become a major public health problem in coming years.<sup>2,5</sup> Hence, effective interventions are needed which can interrupt such vertical transmission. Nevirapine prophylaxis can definitely reduce the perinatal transmission of HIV.<sup>10,11</sup> We know that in populations with an estimated prevalence of HIV infection of > 1%, all adults including pregnant women, should be offered HIV testing. Our study can't really estimate the prevalence rate of HIV infection in pregnant women due to small sample size and because we

evaluated only the pregnant women who referred to antenatal clinics in Zahedan during one year. In an area like Zahedan with prevalence of HIV infection less than 1%, HIV screening is recommended only for pregnant women with past history of HIV risk factors (IDU, tattoo, unprotected sex). Several studies have established the association of STDs and HIV infection. Both ulcerative and nonulcerative STDs are known to enhance HIV transmission.<sup>12-14</sup> In our HIV patient, VDRL test was positive. Spouse of infected woman was also VDRL seroreactive.

## Conclusions

Upon the results emerged from this study, we do not recommend routine prenatal screening for HIV infection in Zahedan. HIV testing should be done only for those with risk factors.

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