

Prevalence of HIV/AIDS: A report based on a survey in women attending ANC services in Eritrea in 2005.

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Abstract

Study objective: To determine the prevalence and socio-demographic factors of HIV in ANC attendees in Eritrea.

Methods: Cross sectional anonymous unlinked sentinel surveillance of HIV prevalence in ANC attendee pregnant women from March 2005 to May 2006.

The study was conducted in 15 clusters; 10 urban and 5 rural clusters with a total of 19 urban and 26 rural sentinel sites that includes all six capital cities and a number of semi urban and rural sentinel sites from all six zones of Eritrea. Cluster sampling, non probability consecutive sampling of pregnant women who came to attend their first ANC in the study sites.

Result: The total sample size was 5033. The over all HIV prevalence in pregnant women attending ANC was 2.38%. The highest prevalence was observed in Southern Red Sea zone (5.9%) followed by central zone (3.48%). Lowest prevalence was seen in Anseba zone (1.3%), South zone (1.65%), Northern Red Sea zone (1.77%), and Gash Barka zone (2.06%). It was found to be 3.04% in urban women and 0.9% in rural women. It was also higher in single women 7.2% than in married women 2%. HIV prevalence increased with age (1.3%) in women aged 15-19, 2% in 20-24, 3.8% in 25-29, 2.5% in 30-34, 1.5% in 35-39, 2.7% in 40-44 and 1.8% in 15-24 years age group women. Further the prevalence fluctuated with level of formal education and occupation; 0.9% in illiterate and 4% in women with secondary school education, 1.94% in house wives, 5.9% in women daily labourers, 5.6% in unemployed unmarried women, and 8.5% in commercial sexual workers.

5.4% in women whose partners are truck/bus drivers, 3.8% in women whose partners are merchants and 2.6% in women whose partner's are in the military/national service.

Conclusion: HIV prevalence in Eritrea is low and declining from the highest 4.2% in 1999 to 2.38% in 2005 ANS sentinel surveillance. HIV prevalence was more prevalent in urban areas, in single, young women and increased with increasing age and educational level and was influenced by the women's and partners occupation.

Introduction

The first AIDS case in Eritrea was detected in 1988 in Assab, the second port city of Eritrea. The total cumulative AIDS cases in Eritrea reported by the end of 2005 are more than 24,000. However, since this is only a health facility based report it is clearly understood that there are under reporting, miss-diagnosis and non-reporting health facilities. Therefore, the actual number of AIDS cases could be more than this figure.

The female to male ratio of AIDS cases is 1.16 to 1 and children comprise 5% to 9% of the total AIDS cases. It is estimated that there are from 60,000 to 70,000 people who live with HIV/AIDS in Eritrea.

Nowadays, the commonest and practical method that closely represents the general population is HIV prevalence survey in pregnant women. Like many other countries, Eritrea is used to conduct ANC HIV sentinel surveillance survey in order to estimate its national HIV prevalence in the general population and to determine the socio-demographic and geographic risk factors associated with increased HIV infection.

To estimate the national HIV prevalence in the general population a periodic and systematic survey that represents the general population is crucial. These can be also supplemented by various surveys that represents population groups with high and low risk behaviour for HIV infection.

In Eritrea, the first ANC HIV prevalence survey was conducted in 1994 in Edaga Hamus mini hospital followed by 1999, 2001 and 2003 national surveys.

The result of all previous ANC HIV Sentinel surveillance shows that the HIV prevalence in pregnant women is declining from year to year. The peak was 4.2 % in 1999 and reduced to 2.8% in 2001 and 2.41 in 2003. This is a good indication that HIV prevalence in pregnant women in Eritrea is showing reduction and stabilization over the years.

Thus the National HIV/AIDS and TB division is conducting ANC HIV sentinel surveillance every two years as one of its priority to estimate the HIV prevalence and trend in the country. With this guiding principle we have conducted the 2005 round ANC HIV sentinel surveillance survey from March to May 2005 on the planned period of two years. The objective of this study was to determine the prevalence socio-demographic and geographic factors of HIV infection over time in pregnant women in Eritrea.

Methods

The study is a cross sectional anonymous sentinel surveillance of HIV prevalence in ANC attendee women. The study was conducted in 15 clusters that comprise 10 urban and 5 rural clusters with a total of 19 urban and 26 rural sentinel sites that includes all the six capital cities of the country and a number of

urban and rural sentinel sites from all six zones were also included in the study. All pregnant women who came to attend ANC in the selected 19 urban and 26 rural sentinel surveillance sites during the study period.

Sampling was done by cluster sampling to select 15 clusters. Each cluster site included health facilities in urban or rural areas with their satellite health facilities numbered 19 urban and 26 rural sentinel surveillance sites. By this approach a total of 5033 pregnant women participated in the study.

Table 1. Name of study subjects participating by zone

Zone	Samples taken	Percent
Central zone	1233	24.5%
Southern zone	904	18%
Anseba zone	686	13.6%
Gash barka zone	1353	26.9%
Northern red sea zone	618	12.3%
Southern red sea zone	239	4.7%
Total	5033	100%

Table 2. Urban – Rural residence of study participants

Place of residence	Participant	Percent
Urban	3483	69.2%
Rural	1550	30.8%
Total	5033	100%

Ninety-three percent of the pregnant women included in this survey were currently married women and 5.5 % were currently single or unmarried women. The number of

widowed and divorced pregnant women included in the study was very low.

A total of 1,703 (33.8%) of pregnant women who participated in the survey had no formal education or illiterate, while 1427 (28.4%) had elementary level educational status, 1096 (21.8%) had secondary school educational level and 731 (14.5%) had junior secondary school educational level. Women with post secondary/ university level schooling were less represented in the survey.

The mean age of HIV positive pregnant women is 26.54 (SD +5.19) years and 25.82 ((SD +6.13) years in HIV negative, with no significant difference.

There was no statistically significant difference between HIV +ve and HIV -ve patients gravidity, parity.

The national HIV prevalence rate is 2.38%. Wide geographic variation in HIV prevalence was observed between zones. The highest HIV prevalence was found

in Southern Red Sea zone (5.9%) and Central zone (3.48%). Lower HIV prevalence was seen in Anseba zone (1.33%), Debub zone (1.66%), Northern Red Sea zone (1.77%) and Gash Barka zone (2.06%).

HIV prevalence rate showed wide geographic variation by geographic clusters and sentinel surveillance sites. Highest HIV prevalence was found in Assab/Tio cluster (5.9%) and Akria cluster (5.9%) followed by Edaga hamus cluster (3.3%), Dekemhare cluster (3.3%), Akordet cluster (3.3%), Massawa cluster (2.7%) and Barentu cluster (2.4%). In all other clusters and sentinel surveillance sites low HIV prevalence were seen in pregnant women.

Higher HIV prevalence in pregnant women was seen in some Eritrean towns in this study. The highest HIV prevalence was found in port city of Assab (7.4%) and Asmara city (4.18%) followed by Dekemhare town (3.33%), Akordet town (3.33%) and Massawa port city (3.04%).

The other factors that influence prevalence were, women residing in urban areas (3.04%) than in women residing in rural areas (0.9%). The odd ratio with 95% confidence interval for this was 3.4 (2-6) with high statistical significance (P-value of 0.00). Women residing in urban areas were 3.4 times more likely to be HIV positive than women residing in rural areas.

According to study participants age group peak HIV prevalence rate of 3.8% was observed in young pregnant women with the age group of 25 – 29 years old followed by 2.7% in 40 – 44 years old and 2.5% in 30 – 34 years old. Lower HIV prevalence was observed in women 15 – 19 years old (1.3%), 20 – 24 years old (2%) and 35 - 39 years old (1.5%). Cumulative HIV prevalence rate in young pregnant women aged 15 -24 years old was 1.8%.

Univariate analysis of HIV infection by marital status showed that it was high in singles (7.2%) and lower (2 %) in currently married women, this difference was statistically significant (P- value of 0.001). The prevalence ratio of HIV infection between single and married women is found to be 3.6 therefore; single women are 3.6 times more likely to have HIV infection than married women.

HIV prevalence rate found to be higher in women with senior educational level (4%) followed by women with elementary educational level (2.9%) and women with junior educational level (2.6%). It was found to be lower in women with no formal education/ illiterate (0.9%) (p - value of 0.001).

HIV prevalence by women’s occupation in this study was found to be high (8.5%) in pregnant women working in entertainment enterprises like bars, hotels restaurants and tea shops followed by women who work in private sector 6.6%, daily labourers 5.9%, unemployed women 5.6% and women in government employment 3.4%. Lower prevalence was found in married women 1.9%. This difference was statistically significant at p – value of 0.001. In this study only 32 students were participated and two became HIV positive; and only 26 women under the military/ national service participated and none of them was HIV positive.

HIV prevalence in this study was high (5.4%) in

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women whose spouses worked as a truck/bus drivers followed by their spouses working as merchants (3.8%) and as government employees (3.5%), military and national service (2.6%), daily labourers (2.3%), private sector employees (2%) and in students (1.4%). On the other hand, very low HIV prevalence was found in women's spouses worked as farmers 0.8% this closely correspondence with HIV prevalence in pregnant women who resides in rural areas (0.9%).

Discussion

In the 2005 round ANC HIV sentinel surveillance study the over all HIV prevalence in ANC attendee women in the country was 2.38%, demonstrating a decline from that of the year 1999 (4.2%) 2001(2.8%), and 2003 (2.4%). This showed that HIV epidemic in Eritrea is being reduced and stabilized unlike reports from other developing countries.

However, there is wide geographic variation in HIV prevalence between zones; highest HIV prevalence was observed in Southern Red Sea zone while the lowest was in Anseba Zone.

The variation of HIV prevalence between different geographic clusters is highly statistically significant.

In addition, the study also showed wide variation of HIV prevalence between urban and rural sentinel sites. Pregnant women who live in urban areas were 3.44 times more likely to be HIV positive than pregnant women who live in rural areas. This showed HIV prevalence was strongly associated with urban residence.

HIV prevalence increased with increasing age groups with a peak at 25 to 29 years.

HIV prevalence in the age group 15-19 years (1.3%), is an indicator for the occurrence of new HIV infections (incidence rate) and this shows HIV transmission in Eritrea is relatively than reports from other developing countries.

HIV prevalence in the age group 15-24, the main indicator for HIV trend in the general population in this study was 1.8% this also showed that the trend of HIV prevalence in Eritrea is lower as compared to other African countries.

Conclusion

In this study the over all HIV prevalence in ANC attendee women in the country declined to 2.38%. There was a decrease of HIV prevalence from that of the year 2003 (2.41%), 2001(2.8%) and 1999 (4.2%). In order to sustain the declining trend, all health workers and the community are encouraged to strengthen the HIV communication and behavioural change interventions.