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Factors Associated with Non-Acceptance of HIV Screening Test among Pregnant Women

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Abstract

In Mexico, prevalence of HIV infection in pregnant women has been estimated at 0.1%, while perinatal transmission accounts for 2% of all cases; nevertheless, this kind of transmission is the main cause of HIV infection in children under 15 years of age, with about 70% of the total cases in individuals of that age. The widespread screening for HIV infection in pregnant women increases the chances to recognize infected women, allowing the establishment of prophylactic measures against vertical transmission. We conducted a case-control study in order to establish the socio-epidemiological profile of pregnant women who rejected HIV testing. From July 2012 to December 2014 at the National Institute of Perinatology, Mexico, city, a total of 9,773 rapid HIV tests were carried out in pregnant women. The socio-epidemiological profile of those patients who rejected HIV testing was: married women with unpaid work and without history of sexual transmitted infections. We concluded that married women are prone to decline rapid HIV testing.

Keywords:

HIV screening; Pregnancy; Vertical transmission; Seropositive

Introduction

It has been estimated that up to one quarter of all human immunodeficiency virus (HIV) infected persons are unaware of their seropositive status. Screening of HIV infection in open population is the most effective strategy for identification of this particular group of affected subjects [1].

Because the obstetric services provide primary care to women suffering a wide range of conditions, and considering that prenatal care is the type of medical visit that require a follow-up, such services can play an important role in promoting and performing the HIV infection screening tests among pregnant women [2].

Detection of HIV infection among pregnant women is not only useful to identify those infected women, but would allow establishment of prevention strategies for vertical transmission, and thus decrease the frequency of cases of congenital HIV infection [3].

Different methods have been developed for screening of HIV infection; rapid tests are most useful because they allow emission of results in a matter of minutes. Despite this test offers ease of performance and technical advantages, there are still patients who refuse to be tested; hence the identification of specific socio-demographic features among these patients is essential to implement appropriate measures to achieve overall acceptance of HIV testing.

The objective of this study was to identify the socio-demographic profile of those pregnant women who rejected HIV testing.

Materials and Methods

The HIV infection screening Program at the National Institute of Perinatology, México, city, was accomplished by means of the OraQuick rapid tests, in oral fluid specimens from pregnant women. Written informed consent was obtained from all patients who accepted HIV testing.

The National Institute of Perinatology is a government-funded, third level healthcare facility that attends low-income patients with high-risk pregnancies, from Mexico City and its suburban areas.

The OraQuick test is a qualitative immunoassay designed to detect specific antibodies against HIV types 1 and 2 and is intended to analyze oral fluid, whole blood and/or plasma specimens, which allows obtaining results within 15 min; the test has a sensitivity of 99.3% and a specificity of 99.8% [4].

Patients who were tested for HIV infection were also asked to answer a questionnaire about epidemiological and demographic features, including age, education, marital status, occupation, medical history, obstetric history, age of first sexual intercourse, number of sexual partners and weeks of gestation at the time of HIV testing.

In order to identify the profiles of those pregnant women who rejected the HIV screening, we designed a case-control study; cases were defined as pregnant women who rejected the HIV test and completed the socio-demographic questionnaire,

Between July of 2012 and December of 2014, a total of 57 pregnant women rejected to participate in the HIV screening program, 38 of them completed the socio-demographic questionnaire. One hundred fifty-two pregnant women who accepted rapid HIV testing were included in the control group; the ratio of case versus control patients was 1:4. Women of the control group were randomly selected from the population of pregnant women who accepted HIV testing.

The variable "stable partner relationship" was defined as a given patient with a relationship of over a year with her partner and included the majority of married patients. The variable "occupation" was further categorized either as "wage work", referring to paid work activities, or as "unpaid work", mainly including homemakers. Diabetes mellitus, hypertension and chronic diseases were included within the variable "medical history".

To analyse data collected we used descriptive statistics. Continuous variables were analysed by means of two-sample Student's t tests, while comparisons of discrete nominal variables were done by means of Chi-square or Fisher's exact tests. The strength of the associations between the different variables of this study and the rejection of HIV testing were assessed through calculation of odds ratios with a 95% confidence interval.

Results

As part of the HIV screening program at the National Institute of Perinatology, from July 2012 through December 2014 a total of 9,773 HIV rapid tests were carried out among pregnant women. During the study period, only two pregnant women tested positive for HIV infection, whose result was confirmed by means of ELISA and western-blot tests.

These data provided an overall rate of HIV-positive results of 0.2 per 1,000 tests performed, which means one HIV-infected woman out of 4,886 pregnant women tested.

The frequency of rejection of rapid HIV testing among pregnant women in the same time period was of 0.58%.

The results of the case-control study showed that a higher proportion of pregnant women who rejected HIV testing have stable partner relationships, as compared with women of the control group ($p=0.03$).

In contrast, the percentage of women of the control group who were wage workers was higher than that among women in the case group ($p=0.03$). The history of sexually transmitted infections (STI) was more frequent among women in the control group than among women in the case group ($p=0.04$).

Table 1 shows all the variables assessed and the comparisons between the case and control groups.

Variable	Population of Women		p-Value
	Case (n=38)	Control (n=152)	
Age (years)	28.1+6	27.8+8	NS
median \pm SD			
Number of years of formal education	11.41+3.75	10.9+3.2	NS
median \pm SD			
Age of first sexual intercourse (years)	19+4.8	18.9+4	NS
median \pm SD			
Age of first sexual intercourse			
<18, No (%)	18 (47.4)	67 (43)	NS
>18, No (%)	20 (52.6)	89 (57)	
Stable partner relationship			
Yes, No (%)	18 (47.4)	43 (27.7%)	0.03
No, No (%)	20 (52.6)	113 (72.3)	
Occupation			
Unpaid worker (homemaker), No (%)	36 (91.9)	122 (78.6)	0.03
Wage worker, No (%)	2 (8.1)	34 (21.4)	
Antecedent of sexual partners			
Single, No (%)	13 (34.2)	65 (41.7)	NS
Múltiple No (%)	25 (65.8)	91 (58.3)	
Number of pregnancies			
Primigravida, No (%)	13 (34.2)	62 (39.8)	NS
Multigravida, No (%)	25 (65.8)	94(60.2)	
Gestational age at moment of the screening No (%)			
<28			NS
>28	22 (57.9)	113 (72.4)	
	16 (42.1)	43 (27.6)	
History of STI			
NO, No (%)	36 (94.7)	124 (79.4)	0.04
YES, No (%)	2 (5.3)	32 (20.6)	
Antecedent of chronic diseases			
YES, No (%)	7 (18.4)	26 (16.6)	NS
NO, No (%)	31 (81.6)	130 (83.4)	

Table 1 Analysis of the socio-demographic variables related to rejection of rapid HIV testing.

The variables that were associated with rejection of rapid HIV testing were a stable partner relationship, unpaid or no work,

and absence of history of STI; the strength of those associations is shown in Table 2.

Table 2 Variables associated with rejection of HIV testing among pregnant women.

Variable	GROUP OF WOMEN		Odds ratio (95% confidence interval)
	CASE n = 38 (%)	CONTROL n = 152 (%)	
Stable partner relationship			
YES, No. (%)	18 (47.4)	41 (27.7)	2.4 (1.1 - 5.2)
NO, No. (%)	20 (52.6)	111 (72.3)	
Occupation			
Unpaid worker (homemaker), No. (%)	36 (94.7)	120 (78.6)	5.0 (1.1 – 31.0)
Wage work, No. (%)	2 (5.3)	32 (21.4)	
History of STI			
NO, No. (%)	36 (94.7)	122 (79.4)	4.6 (1.0 - 29.5)
YES, No. (%)	2 (5.3)	30 (20.6)	

Discussion

One of the main strategies for controlling HIV infection and AIDS is the early diagnosis. The advantages of diagnosis at early stages of HIV infection are, in first place, that the affected individuals may receive the antiviral therapy, which can result in increased survival and therefore a better quality of life; and secondly, to stop further spread of the infection [5].

Since the start of HIV epidemic in Mexico, more than 150,000 cases of HIV infection have been notified to the Mexican Health Ministry. However due to underreporting of cases, the certain number of cases remains unknown, but estimations reach up to 250,000 HIV-infected persons [6]. According to these dates, near to 40% of HIV-infected subjects are unaware of their HIV-infected status.

The ignorance of the HIV seropositive status is not a problem restricted to the Mexican population, but occurs in practically every country of the world; in several countries the percentages of subjects who are unaware of their HIV-infected status vary between 25% and 30% [6].

Acknowledging HIV infection in women, will allow them consciously and responsibly to take the decision to get pregnant, and if they have become pregnant to implement the appropriate prophylactic measures to minimize the risk of vertical transmission of HIV [2]. In developing countries, the majority of HIV-infected women are young females at reproductive age, and many of them become pregnant [7]. If prophylactic intervention is not undertaken by pregnant HIV-infected women, approximately one quarter of all the children born to these mothers will also become infected by HIV [8]. Identification of HIV-infected pregnant women is the first step for prevention of congenital HIV infection. In our country perinatal transmission has been the main route for acquisition of HIV infection among the paediatric population [8]. Taking into account the

importance of the identification of all infected subjects, in the United States, since several years ago, there is the recommendation that routine HIV screening tests should be performed among all individuals aged 13 to 64 years old. [1] In a similar way, performance of routine HIV screening tests among the population of pregnant women is recommended as part of their prenatal follow-up [2, 9].

In this study, the rate of acceptance of the HIV rapid screening tests was near 99%; a value higher than those reported in studies carried out in other studies performed of our country, which rates of acceptance ranges were 92.5 to 95.2% [10]. Studies carried out in low-income countries have shown a positive attitude of pregnant women to accept HIV testing if there is also a benefit for their child [5].

Despite voluntary rapid screening tests have undeniable benefits when applied in the gestational period, some reasons previously described to reject HIV testing include the high rates of stigmatization and discrimination after a positive test, the difficulty of attending the medical unit where test was performed, the lack of perception that unborn babies are put at risk by HIV infection, and the scarce information about therapeutic measures and/or the benefits of antiretroviral drugs [11].

Conclusion

From the data of this study, we can assume that those women who rejected the HIV testing exhibited a common profile, including a stable partner relationship; they have no work because they are homemakers and the STI are less frequent among them. According to the hypothesis that we proposed in this study, the reason why pregnant women rejected HIV testing is that, taking into account their stable partner relationships and

the absence of sexually transmitted infections, they consider themselves less vulnerable to HIV infection.

The knowledge of the demographic and clinical profile of those pregnant women who reject HIV testing, will allow to propose specific control strategies among that population, in order to improve the rates of acceptance of HIV testing. Our study showed that women who have stable partner relationships are more reluctant to accept HIV testing, a reason clear enough to increase diffusion of information about the risk of widespread dissemination of HIV infection, since there are no populations that cannot become infected with HIV.

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