

Prevention of Prenatal HIV Transmission in Kazakhstan.

Zh. Trumova

Almaty – Kazakhstan

Correspondence to: Dr. Zhanna Trumova App. 7, h. 18, Mamyr-7, Almaty – Kazakhstan. Tel: +7 300 3749379.

Email: ZhannaTrumova@yandex.ru

As of 1st of January 2005 there were 4696 registered cases of HIV in Kazakhstan. 31 of infected are children under 15 years, 12 of them are infected from the mother. The analysis and research of HIV/AIDS epidemic situation and prevention of a prenatal transmission of the HIV on territory of republic was held. Thus 311 cases of HIV - infected pregnant women had been carefully studied. And as the analysis has shown the number of pregnancy cases among HIV infected was growing from 2002 till 2004 and has compounded 253 cases, or 81,3 % from a total number. The coverage of the pregnant women by preventive treatment was expanded up to 70 %, however one-third of the women remained without preventive actions. Most children (78,4 %) born from HIV – infected mothers had pathology involving part of a central nervous system. The PCR method was found useful in early diagnosis of HIV – infection for children in Kazakhstan.

Introduction

According to UNAIDS, in 2002 the number of children under 15 years living with HIV/AIDS globally was 3.2 million, 2.88 million of them were infected by prenatal transmission. Worldwide, 200 millions women get pregnant annually, 2.5 millions of them being HIV infected. In 2001, approximately 800,000 infants were infected with HIV - almost all of them by a prenatal transmission¹. Throughout the world, women account for 43 % of all adult people living with HIV/AIDS, the number steadily increasing in course of time². In East Europe and Central Asia (including Kazakhstan) 1.2 million people live with HIV, 27% of them women³. The frequency of HIV transmission from mother to child requiring chemoprophylactic antiviral drugs in different regions ranges from 15% to more than 40%. According to available data, in Europe and USA the frequencies range between 15 and 25 % while in Africa and Asia it is 25-40 %⁴.

Countries of Central Asia inform report a rise of HIV cases in that region. The frequency of HIV in Kazakhstan is 43 cases per 1 000000 populations, 31 cases per 1000 000 populations in Kyrgyzstan, 4 cases in Tajikistan and 38 - in Uzbekistan⁵. The spread of HIV among pregnant women remains at a rather low level everywhere in East Europe and Central Asia, except for Ukraine, where the increase of number of new cases has taken place at the expense of the women from 24 % in 1996 up to 38 % in 2001 and also in the Russian Federation, where registered more than 3300 HIV

- infected pregnant women in 2002⁶. If the rate of rise in Eastern part of region continues there is a risk of HIV epidemic among the women that accordingly will result in an increase of number of HIV infected babies.

In Kazakhstan the development of programmes and strategies related to HIV in the field of prenatal transmission and prevention has been just started. The main aim of our study was to analyze the current situation of HIV/AIDS and prenatal HIV transmission in Kazakhstan and to assess the effectiveness of the system of preventive actions.

Materials and methods

This retrospective study was undertaken at the Republican Center for prevention of AIDS. The data of HIV – infected cases from 1987 to 2004 was retrieved and analyzed. The frequency of HIV - infection among the pregnant women and outcomes of pregnancy were studied. All information was taken from clinics in regional AIDS prevention centers, where preventive strategies were being conducted.

The services provided at these centres include:

- Pre- and post-HIV counselling of women, including pregnant;
- Period of conducting chemoprophylactic for pregnant and newborn;
- Actions during delivery when caesarean section is applied
- Replacement feeding of infants;

- Antenatal/maternity clinics

Quality was achieved by adhering to the standard protocols, accepted in country, partition 6 “Preventive measures of mother to child HIV transmission”.

Results

In the Republic of Kazakhstan on 1st of January, 2005, there was 4696 registered HIV – infected cases, including 231 AIDS cases and 31 - children under 15 years. The first cases of HIV-infection in country were registered in 1987 among the foreign students. Thereafter cases of HIV infection were registered among the citizens of republic, predominantly the injection drug users. The peak of the epidemic was in 2001 when 1175 cases – (29.4 %) were recorded. Due to effective National policies, towards HIV prevention there was a decrease of rates of HIV - infection from 87.2 % in 2001 to 17.5 % in 2004. More than half (64%) of all people living with HIV/AIDS were young people between the ages of 15 and 29 years. Males, accounted for 76. 6 % compared to the 23.4 % for females.

As the latest statistical data shows, the commonest way of getting HIV infection was through heterosexual contact; from 5 % in 2001 up to 29.3 % in 2004. During the past years the number of the HIV-infected women has risen again, in 2004 it has increased to 32.2%.

The study showed also that there was an increase in the number of HIV-infected pregnant women, including women with subsequent pregnancies. In total since 1997, 259 pregnant women were registered; 52 - had subsequent pregnancies. The number of pregnancy cases had increased to 81.3 % during the years 2002-2004. Infection HIV for the women through injections increased by

62.2%. All women belonged to particularly vulnerable to HIV groups; 63% were injection drug users (IDU) practically all in an anamnesis and had numerous sexual contacts, 37 % had HIV – infected sexual partner.

Hepatitis Virus antigens (B, C, D) were found in 55.9% of the women; 22.7% of them had sexually transmitted diseases.

Outcome of Pregnancy.

Table 1 summarizes the outcomes of pregnancy. From 311 cases of pregnancy for 159 women (51.1%) the pregnancy was terminated when chemoprophylaxis was not possible because of lack of financial resources, absence of drugs till 2002, and rejection of any treatment by HIV positive IDU women. In 136 cases the pregnancy was end by labour. Seventeen women had Caesarean section delivery.

Of the 139 babies born, 12 of them consequently became HIV-positive.

In the Kazakhstan Republic, a three-stage method of chemoprophylactic treatment to mother during pregnancy and labour and to newborn within 6 weeks, depending on periods of eliciting of HIV status, a zidovudine (monotherapy) and short-course nevirapine in labour process has been practiced since 2005.

Out of the 136 cases of pregnancy that ended in labour, chemoprophylaxis was given to only 53 % of cases. In 47 %, it was not given, because of late determination of HIV-status of the women, including 18.3 % of pregnant women that were not registered in mother and child health centers. The study has shown that for the last years the coverage of the pregnant women by preventive treatment was expanded from 66 % in 2003 up to 70 % in 2004.

Table 1. Outcome of Prenancies

Year	Pregnancy	Labour	Newborns
1997	5	5	5
1998	7	5	5
1999	8	6	6
2000	20	7	7
2001	18	4	4
2002	75	18	19 (1 case of twins)
2003	96	44	45 (1 case of twins)
2004	82	47	48 (1 case of twins)
	311	136	139

One of the main preventive strategies, to reduce the risk of mother-to-child HIV transmission in the country, is an elective Caesarean section at 38 weeks of pregnancy, in combination with a chemoprophylactic. The caesarean section preventive measure was applied in 17 women, i.e. in 12,5 % of cases. From 17 newborns 1 infant was HIV positive (determined by PCR method) that has compounded 5,9 %. These results allow practicing the HIV-infected women a caesarean section having received their acceptance.

At the third stage we have been applying a chemoprophylactic policy for infant within 6 weeks after birth by zidovudine, combining with the replacement feeding. From 139 infants (there were three twins) only 5 children were on breastfeeding, because of the late determination of HIV status of the mothers. A replacement feeding has received 134 infants or 96.4 % of children.

From 139 newborns - 74 infants (53.2 %) at birth had pathologies including:

- 58 Pathology of a central nervous system (78,4 %),
- 8 Congenital pneumonia,
- 20 Prematurity,
- 7 Intrauterine oligotrophy,
- 4 Inherent defects of progressing,

Thus, in a spectrum of diseases dominate pathology of a central nervous system and prematurity. Follow up of 139 children revealed that 12 infants had become HIV infected, 71 were removed from the record-keeping once diagnosed as seronegative. Five died, 4 have left the country, 54 – were still at the clinic waiting the end of the term of observation and verification of the diagnosis.

The diagnosis of the given category of the patients, apart from traditional methods of diagnostic of HIV infection on eliciting particular antibodies by IFA method, is carried out by a PCR method (determination of DNA and RNA of a virus).

Discussion

Thus, the preliminary results of our study have shown the necessity and significance of putting in

place prevention strategies of prenatal HIV transmission such as:

- Chemoprophylaxis,
- Elective caesarean section
- Replacement feeding

The confirmation of the diagnosis of children born from HIV positive mothers by method of a PCR allows reducing periods of observation, to diminish a psychological factor for mothers and members of their families. The voluntary testing and HIV counseling in mother and child centers identifies case in time to be able to carry out preventive actions of prenatal HIV transmission and brings psychosocial help for the mother.

Conclusion

1. The situation on HIV/AIDS in the Republic of Kazakhstan requires an effective strategy on preventive programmes of HIV infection for infants.
2. More mother and child health centers with a voluntary testing on HIV counseling are needed.
3. Most effective and accessible measures in prevention of mother to child HIV transmission are: three staged method of chemoprophylaxis and replacement feeding of babies.
4. For early verification of HIV diagnosis for children born from the HIV positive mothers, it is relevant to apply a PCR method.

References

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