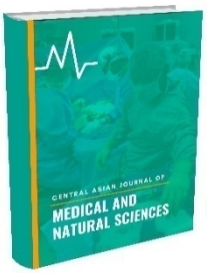
CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES



Volume: 04 Issue: 06 | Nov-Dec 2023 ISSN: 2660-4159

http://cajmns.centralasianstudies.org

Analysis of Somatic and Reproductive History of Women with Inflammatory Diseases of the Pelvic Organs Due to Hiv Infection

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Received 23rd Oct 2023,
Accepted 25th Nov 2023,
Online 30th Dec 2023

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Key words: Diseases.

Abstract: The situation with HIV infection in the world can be described as pandemic and put on a par with world wars, both in terms of the number of lives lost and the damage it causes to society [1,5,9]. The problem of HIV infection in women of reproductive age is especially pressing, since it poses a threat to future generations. Accumulated clinical experience and basic medical research have significantly changed the course of the disease. If previously patients with AIDS did not have a chance to be cured, now HIV is a chronic, long-term, manageable disease. This occurred as a result of the study of the immunodeficiency virus itself and, especially, the development and implementation of antiretroviral therapy (ART) into clinical practice [2,8,10,14]. What happened next remains a unique phenomenon in medicine: within a few years after the discovery of the disease, it transformed from a known fatal disease into a condition that can be effectively treated with long-term therapy. Already, HIV-infected people live, work and are sufficiently socially adapted. Recent studies have shown changes in the social and gender composition of infected citizens, the number of infected women is increasing, the infection is diagnosed not only among marginal, but also quite prosperous groups of the population, among those newly infected the number of older people is increasing, and heterosexual transmission of the infection is increasing [3,7,11,13-48]. The changes that have occurred have posed new challenges for medicine: high-quality medical care that can preserve health and ensure a full life for infected citizens. In this context, the most important aspect is the rehabilitation of the reproductive function of HIV-infected patients, the prevention of partner infection and the birth of healthy children.

This possibility exists with proper monitoring of HIV-infected patients, the use of antiretroviral therapy and adequate benefits to achieve pregnancy [4,6,12]. Many aspects of this problem have not been resolved, namely, whether HIV infection or antiretroviral therapy affects human reproductive function, the quality of female and male gametes, and the frequency of pregnancy. And, finally, do the frequency of occurrence and structure of concomitant pathology of the reproductive system of an inflammatory nature in a specific group differ from population data.

Purpose of the study: To study the analysis of the somatic and reproductive history of women with inflammatory diseases of the pelvic organs against the background of HIV infection.

Materials and research methods:

We have provided a detailed clinical analysis of women with HIV infection. A total of 315 patients aged from 15 to 41 years were examined. Clinical and laboratory data of 200 patients were analyzed retrospectively for 2018-2019 (comparison group), 115 patients were observed during 2020 (main group). The control group consisted of 30 women with no HIV infection. Exclusion criteria: concomitant diseases in the acute stage. The average age of patients in the comparison group was 38.6±0.67 years, in the main group 35.1±0.65, in the control group 34.93±1.50 years, $p \leq 0.05$. The data obtained confirmed the opinion that HIV is registered mainly among young people of active, including reproductive age. At the same time, we have shown, as has been shown in other studies, that the age of HIV-infected people is increasing; these are no longer teenagers, but adults, although most of them were infected at a young age, which confirms the effectiveness of ART and the increase in life expectancy of patients .

Results and their discussions:

We assessed the social history of women from both groups. A number of characteristic features were identified when comparing the level of education of the surveyed individuals (Table 1). The percentage of women with secondary and secondary specialized education was significantly higher among the examined women of both groups compared to women with higher education. When analyzing professional affiliation, we took into account the possible influence on the occurrence and development of the underlying disease, depending on the conditions and factors of work activity. The vast majority of women infected with HIV are housewives or temporarily unemployed.

Table 1. Social history of examined women, abs/%

Index	Comparison group (n=200)	Main group (n=115)	Control (n=30)
Education			
Higher	32/16	16/13,9	10/33,3
Secondary specialized	127/63,5	62/53,9	11/36,7
Average	41/21,5	37/32,2	9/30
Social status			
Works	55/27	31/27	15/50
Temporarily not working	34/17	17/14,8	6/20
Student	0	0	0
Housewife	111/55,5	67/58,2	6/20
Other	0	0	3/10
Location			
City	106/53	65/56,5	20/66,6
Village	94/47	50/43,5	10/33,3

When assessing the place of registration, we did not identify highly significant differences between the groups. As for marital data, the data in both groups did not differ and the majority of HIV-infected women were not married (58.5% in the comparison group and the main group), and among the healthy observed, all were married. Considering the marital status of women in the compared groups, we note that in the group of women who did not receive therapy, the proportion of unmarried women was significantly higher compared to patients observed and receiving ART - 35 (41.1□5.3%) and 18 (24 ,0□5.0%), ($p < 0.05$), and almost all women indicated that the end of the relationship with their partner followed the establishment of HIV-positive status - there were 10 such women in the main group (13.3□3, 9%), in the comparison group – 32 (37.6□5.2%), ($p < 0.01$). All patients who were interested in having a healthy child and preserving their family considered themselves capable of providing for the maintenance and upbringing of their children. The patients' intentions were confirmed by the established facts of their social stability. Of the bad habits in the comparison group, 20% noted smoking and 20% regular alcohol consumption, in the main group - 25.2 and 22.6%, respectively. When analyzing the husband's morbidity, the following was noted: in the comparison group, 64.5% of the examined husbands were not infected, in the main group - in 54.5%.

The route of infection in 40% of cases in the comparison group and in 43.5% was sexual; I would like to note the high percentage of unknown route of infection in 46.5% and 40%, respectively (Table 2). 27 (13.5%) patients in the comparison group and 19 (16.5%) women in the main group were infected through the parenteral route.

Table 2. Ways of infection of women

How a woman becomes infected with HIV	Comparison group, (n=200)		Main group	
	abc	%	abc	%
Sexual	80	40	50	43,5
Parenteral	27	13,5	19	16,5
Vertical	0	0	0	0
Unknown	93	46,5	46	40

They indicated that this happened while taking drugs, although all the patients interviewed did not consider themselves drug addicts and claimed that the drug use was one-time and accidental in adolescence. However, drug use remains a cause of infection.

The duration of HIV infection among those examined retrospectively was: 1 year in 10.5% of those examined, 2 years in 10%, 3 years in 17%, and more than 3 years in 62.5%; Among those examined prospectively, the duration of the disease was 1 year in 10.4%, 2 years in 10.4%, 3 years in 16.5%, and more than 3 years in 62.6%. In most patients, the duration of infection ranged from 1 to 3 years. 15.7% of women were infected for less than a year, 10.9% in the comparison group for more than 10 years, and in the main group 18 and 12%, respectively, without a statistically significant difference. Thus, women with newly diagnosed infection are most often registered. At the same time, in the vast majority of women, the age of immunoblotting was less than 1 year, which emphasizes the growing role of the sexual route in the transmission of HIV infection.

Also, I would like to note the presence of bad habits among the examined patients. Thus, alcohol abuse was noted by 20% of patients from the comparison group and 23% of patients from the main group. Of the concomitant somatic pathologies, arterial hypertension occurred with approximately the same frequency in both comparison groups (Figure 1). Iron deficiency anemia of mild to moderate severity was observed in every fourth patient. Diseases of the gastrointestinal tract occurred in every 6 patients, and the frequency was lower than in the control group, which may be due to the rare referral

of this category of patients to somatic hospitals, p <0.05. 5% of patients from the comparison group and 4.3% from the main group were seen by an ophthalmologist. Pathology of the thyroid gland, represented by diffuse goiter with/without dysfunction of the thyroid gland, occurred in 8.7% of cases in the main group and in 8.5% of cases in the comparison group. Surgical pathology - appendectomy - was noted in the anamnesis in 5% of patients in both observation groups. We noted a lower frequency of general somatic pathology in the examined patients, possibly due to the rare attendance due to the presence of the underlying pathology.

When analyzing reproductive function, the following results were obtained. There was one pregnancy history in 9.5% of patients from the comparison group, 9.6% from the main group, two pregnancies in 63 and 63.5% of those examined, more than three pregnancies in 23% and 22% of women. On average, more than 66% of those examined in both groups gave birth 2 or more times. During pregnancy, 29% of patients from the comparison group and 28% from the main group suffered from acute respiratory viral infections; viral hepatitis (B, C) was noted in no more than 3% in both groups. Iron deficiency anemia of 1-2 degrees was observed in 75% of patients in the comparison group and 64% of patients in the main group compared to 50% in the control group.

85.5% of patients from the comparison group and 86% from the main group receive antiretroviral therapy. The duration of reception of etiopathogenetic therapy in the comparison group is as follows: 1 year - 21% of patients, 2 years - 9%, 3 years - 20% and more than three years - 50%, in the main group - 10.5% received it for 1-2 years of patients, within 3 years - 16.6%, more than three years - 62.4

I would like to note the presence of viral hepatitis B in 6% of cases in the comparison group and in 5% of cases in the main group (Figure 2), which had a significant difference compared to control values (p <0.05). Viral hepatitis C was 2 times less common. Patients who knew about their disease and did not receive therapy justified this by the high cost of treatment and the duration of taking medications. Parasitic diseases were observed extremely rarely in comparison with the overall occurrence and in relation to the control group.

As a complication of the underlying disease, our patients noted “chronic” diarrhea in 21% of cases (n=42) from the comparison group, 22.6% (n=26) from the main group, recurrent upper respiratory tract infections were noted in 23% (n=46) respectively. and 23.5% (n=27). Periodically occurring hyperthermia was noted by 6.5% of patients (n=13) from the comparison group and 8% (n=9).

When analyzing parity, the following was revealed: after registration for HIV, pregnancy occurred in 83% of patients from both groups of observed patients (Table 3).

Table 3. Pregnancy outcome

Pregnancy outcome	Comparison group		Main group		Control group	
	abc	%	abc	%	abc	%
Urgent birth	52	26	31	26,5	9	30
(spontaneous)	21	10,5*	11	9,5*	2	6,6
Urgent birth	36	18*	21	18,6*	1	3,3
(C-section)	15	7,5*	8	7*	1	3,3
Premature birth	6	3	4	3,5	0	-
Spontaneous miscarriage	42	21*	24	20,9*	1	3,3

*Note: *- values are significant in relation to the control group (p<0.05 - 0.001)*

According to the presented data, for the majority of women in the comparison group, the births under study were repeated (32.9%). In the main group of HIV-infected patients, on the contrary, the majority

gave birth for the first time (82.19%). The reproductive history of the infected patients was regarded as unfavorable, due to the large number of induced abortions and spontaneous miscarriages. However, at the same time, in the main group of HIV-infected women, induced abortions were significantly more common. Perhaps this fact is associated with the low level of education of patients and the lack of accessible information on contraception. We did not find any differences between the frequency of spontaneous miscarriages, regardless of the gestational age, in both groups. However, we noted that in the group of women with HIV infection, the frequency of premature births is almost 6 times higher than in the control group, which is consistent with the data of other authors. Analysis of the outcomes of previous pregnancies indicated that with almost the same number of pregnancies in the group of infected women, There were significantly more surgical deliveries than in the control group, which was explained by the lack of viral load during the period of preparation for childbirth in healthy women. It should be noted that, despite the ongoing counseling, when HIV-positive status was revealed during examination during pregnancy, 22 women from the comparison group deliberately refused ART (11%). 63 patients from the comparison group - 31.5% - were not registered for pregnancy in the antenatal clinic; accordingly, they were not examined for the presence of HIV infection during the gestational period, and anamnestic information was collected upon admission to the maternity hospital (Table 4).

Table 4. Distribution of HIV-positive women according to postpartum period data

Comparable groups	**Average weight of newborns (M±m),g**	**Lactation, %**	**Maternal birth trauma (episiotomy, perineal rupture), %**	**HIV+ Child status**
Main group (n=115)	2935±199	11	18	0
Comparison group (n=200)	2856±220	23	31	2(1%)
Control group (n=30)	3420±250	100	-	0

Data on the weight of newborns, the postpartum period and lactation of the mother after previous births are presented in Table 4. Note that HIV-infected women receiving ART, diagnosed before (or during) a previous pregnancy, practiced artificial feeding in 100% of cases.

Thus, HIV-infected patients belong to the group of women of active reproductive age who want to maintain their reproductive health and, in the overwhelming majority, have children. They form a fairly stable social group, having education and work. The vast majority of them live in families, 64.8% are able to raise and fully support their children. The main route of infection is heterosexual; in a quarter of women, the cause of HIV infection was drug use, although they themselves do not consider this to be the cause. The infection was more than 3 years old in 62.5%. About 85% receive antiretroviral therapy. Also, only two-thirds of the patients found themselves in a gynecological bed for the first time; there is a tendency for the average age of HIV-infected patients who required gynecological care to increase.

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