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Adherence to anti-retroviral therapy in children

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Abstract. Adherence to antiretroviral therapy is key to success and survival among people living with HIV. Despite this, the low level of adherence is one of the main problems in the provision of medical care for HIV-infected people in many countries due to the high level of formation of resistant strains of the virus and, consequently, the ineffectiveness of ART. Data from a systematic review and meta-analysis conducted in Ethiopia demonstrate different levels of adherence to ART in children with HIV infection in different cities of the same state [7]. Similar results were obtained in a study conducted in Nigeria [24]. Chinese scientists, after conducting a meta-analysis and a systematic review, also concluded that adherence rates are highly heterogeneous among different age groups of people [11]. The Indian scientists K. Mehta, M.L. Ekstrand, E. Heilen, GN Sanjiva and A. Sheth [14], conducting a study in the southern regions of India. The variety of research results obtained in different countries of the world prompted us to study the level of adherence to antiretroviral therapy in HIV-infected children, which was the purpose of this work.

Keywords: HIV, antiretroviral therapy, adherence, children.

Material and methods. The study was conducted from 2018 to 2021. on the basis of the HIV infection department of the Research Institute of Virology of the Ministry of Health of the Republic of Uzbekistan, as well as on the basis of a specialized clinic at the Republican Center for the Fight against AIDS and the city center for the fight against AIDS in Tashkent. 112 children diagnosed with HIV infection at the age from 0 to 18 years were under observation.

The diagnosis of HIV infection was established on the basis of the order of the Ministry of Health of the Republic of Uzbekistan No. 277 dated April 30, 2018 "On the implementation of national clinical protocols for HIV infection".

The clinical stage of HIV infection was established in accordance with the classification of HIV infection in children in accordance with the current orders of the Ministry of Health of the Republic of Uzbekistan.

When assessing the level of adherence, we used the WHO criteria modified by O.I. Fedyaeva. (2014) (table 1)

Key criteria for adherence to antiretroviral therapy

№	Commitment criteria	High commitment	Moderate commitment	Low adherence
1	Percentage of taking physician-prescribed doses	95% or more	80 +90%	79% or less
2	The number of		3-10 doses	More than 10

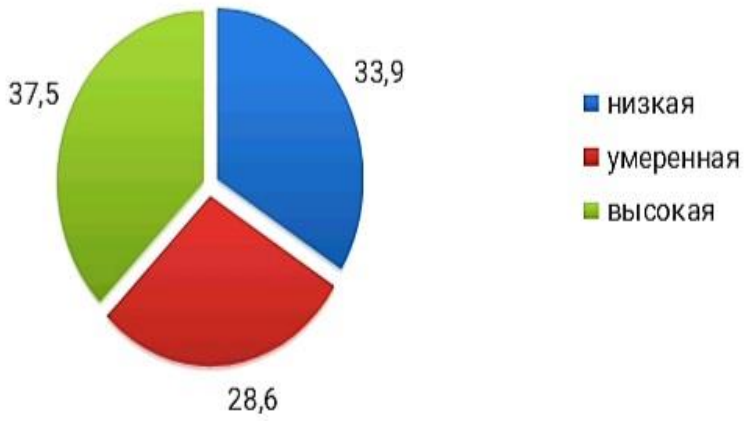
	single doses missed per month when taken 2 times a day	Less than 3 or 1 day	or 1.5 to 5 days	doses or 5.5 or more days
3	The daily intake of drugs per month is:	29 and more	25-28.5 days	24.5 days or less
4	Reception clearly at the set time with fluctuations	Up to 30 minutes	Within 2 hours	More than 2 hours
5	Taking medications in accordance with the specified dietary regimen	Constantly	Sometimes not carried out	More often not carried out
6.	Self-passes for no good reason	Absent	Single	Frequent
7.	The psychological attitude of commitment	There is	Does not take an active position, but agree with the doctor	No

The data obtained during the study were subjected to statistical processing on a Pentium-IV personal computer using the Microsoft Office Excel-2012 software package, including the use of built-in statistical processing functions.

Results and discussion. We have determined the levels of adherence in children included in our study. The results are shown in diagram 1.

Diagram 1

Assessment of the state of adherence to ART in the examined children



According to our analysis, among the children we surveyed, the distribution of adherence to ARVT was approximately the same. Children whose adherence to ARV drugs was at a high level - 37.5% (42 children), a moderate level of adherence -

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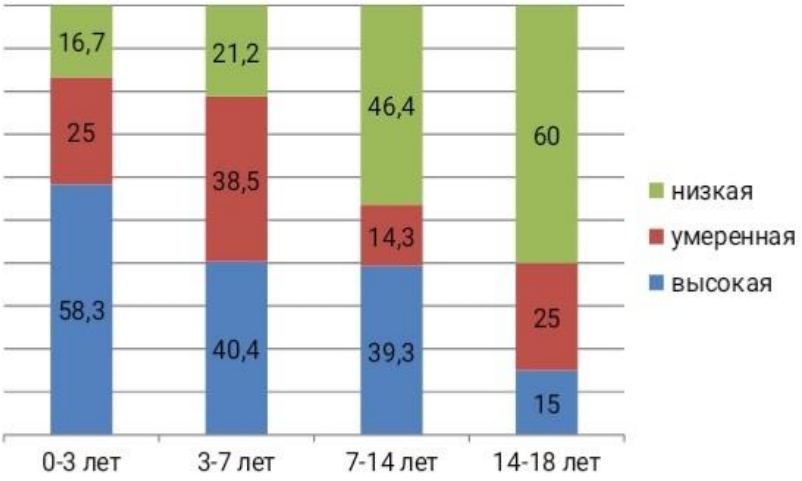
28.6% (32 children) and a low level of adherence - 33.9% (38 children) (p>0.05). For further analysis, we examined the state of adherence to ART in different age groups (Diagram 2.).

Diagram 2

The state of adherence to ART in different age groups

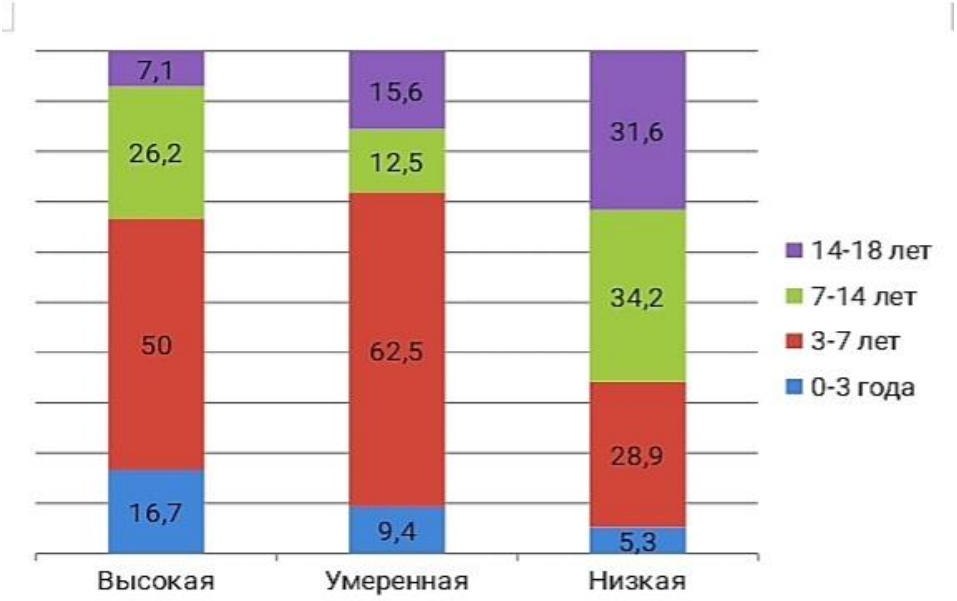


The analysis showed that in the group of children under 3 years old, in most cases, there was a high level of adherence (58.3%), which is apparently explained by the fact that young children are in the care of parents / close relatives / guardians.

A quarter of children (25%) had a moderate level of adherence. These were mainly children 2.5-3 years old, infected perinatally. Although they were in the care of relatives / parents / guardians, nevertheless, in these cases we noted the so-called “therapeutic fatigue” in the caregivers, which explains the missed medication. A low level of adherence was registered in 16.7% of children. When analyzing the possible reasons, it was revealed that these were children from disadvantaged families, where their parents suffered from various kinds of addictions (alcohol, drug), which influenced adherence to the treatment regimen. The next stage of our work was to study the age structure at different levels of adherence to ART. The results are shown in diagram 3.

Diagram 3

Age structure at different levels of adherence to ART



The analysis showed that among children with high and moderate levels of adherence, children aged 3 to 7 years predominated (50% and 62.5%, respectively). We explain this, first of all, by the peculiarities of our sample, namely, the predominance of this age category among the surveyed children.

Among children with a high level of adherence, a smaller proportion (26.2% were children 7-14 years old). The lowest specific gravity was found among young children - up to 3 years old (16.7%) and adolescents 14-18 years old (7.1%).

Among children with a moderate level of adherence, the above age groups (except for the category from 3 to 7 years old) had an almost equal distribution within 10-15%).

Interesting data were obtained when analyzing the age structure of children with a low level of adherence. The smallest proportion was observed in children under 3 years of age (only 5.3%), which is explained, as we described above, by the care of the caregivers. Children of other age groups (3-7 years old, 7-14 years old and 14-18 years old) were registered with almost equal frequency (within 30%). Thus, among HIV-infected children, there was an approximately equal distribution of different levels of adherence (one third each). The worst adherence rates were observed in the 7-14 and 14-18 age groups. A similar trend is shown in a number of foreign studies [2, 12, 17, 19, 21]. Adolescents and young people tend to have poorer adherence to treatment for many chronic conditions [9, 10, 15, 18]. In the case of HIV infection, the level of adherence is influenced by stigma [3, 4, 5, 8]. In addition, adolescence is characterized as a time of significant physiological and psychological growth and development [1, 2], an increased desire for independence from parents [6] and an increased risk [25], adding another level of difficulty in maintaining adherence to ART. Adolescents are also characterized by a lack of financial independence, a tendency to pressure from peers, and a lack of problem-solving skills [13, 16, 20, 22,

23]. All these factors may explain the relatively high level of adherence to ART in this category of patients, in contrast to young children, for which adherence is largely the responsibility of adults.

Conclusion: Based on the studies carried out, it can be concluded that as the child grows up (over 3 years old), the state of adherence tends to deteriorate. To correct the situation, a detailed analysis of the reasons affecting the state of adherence is necessary, and the development of measures to level or weaken them.

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