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O.M. Hnenna

PROGNOSIS OF THE PROBABILITY OF THE DEVELOPMENT OF DEVIANT BEHAVIOR AMONG HIV INFECTED WITH NON-PSYCHOTIC MENTAL DISORDERS BASED ON MULTIPLE LOGISTIC ANALYSIS

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Ключові слова: *ВІЛ-інфіковані, непсихотичні психічні розлади, девіантна поведінка, депресія, тривога, психопатологічна симптоматика*
Ключевые слова: *ВИЧ-инфицированные, непсихотические психические расстройства, девиантное поведение, депрессия, тревога, психопатологическая симптоматика*

Abstract. Prognosis of the probability of the development of deviant behavior among HIV infected with non-psychotic mental disorders based on multiple logistic analysis. Hnenna O.M. *The coexistence of psycho-pathological symptoms with HIV/AIDS is associated with aggravation of their condition due to the likelihood of deviant behavior. The aim of the study – assessment of the likelihood of deviant behavior in HIV-positive patients with non-psychotic psychiatric disorders. A comprehensive clinical and psychodiagnostic examination of 114 HIV-infected patients with non-psychotic psychiatric disorders was conducted including clinical-diagnostic interviews, pathopsychological and experimental-psychological methods of investigation, including the method of Ch.D. Spielberger in modification of Yu.L. Hanin (STAI - State-Trait Anxiety Inventory) for assessing anxiety level, Beck Depression Inventory (BDI-II) for assessing depression, SCL-90-R (Symptom Checklist 90-Revised) for assessing psychiatric symptoms. Statistical processing of the results was performed using descriptive and analytical methods implemented in the software STATISTICA 6.1 (StatSoftInc., Serial No. AGAR909E415822FA). Frequency and severity of depression and anxiety in HIV-infected persons is significant and by 3.4-4 times exceeds the corresponding indicators of a healthy Ukrainian population. Anxiety, depression, and other psychopathological symptoms according to SCL90-R scales (except for the obsessive-compulsive scale) are more pronounced in HIV-infected patients with destructive behavior than in patients without it. The chances of developing deviant behavior in HIV-infected persons with non-psychotic psychiatric disorders are increased at GSI>1 by 20.0 times (95% CI 5.63 - 71.07), in the presence of depressive symptoms – by 6.76 times (95% CI 2.16 – 21.18) and at a high level of personal anxiety – by 4.61 times (95% CI 2.05-10.40). Psychopathological symptoms of people with HIV status are characterized by high rates of depression and anxiety, somatization, paranoid ideas, interpersonal sensitivity. In patients with signs of deviant behavior, the severity of these disorders and the severity index of psychopathological symptoms was significantly higher (p<0.001) compared with patients who do not have such characteristics. According to the logistic prognostic model, the chance of developing deviant behavior significantly increases with an increase in the index of overall severity of psychopathological symptomatology, with an increase in the level of depression, and a level of personal anxiety. Considering this, when providing medical assistance to HIV-infected people, their needs for psycho-correction should be taken into account in order to prevent deviant behavior.*

Реферат. Прогнозирование вероятности возникновения девиантного поведения среди инфицированных вирусом иммунодефицита человека с непсихотическими психическими расстройствами на основании множественного логистического анализа. Гненная О.Н. *Сосуществование психопатологических симптомов с ВИЧ/СПИД связано с отягощением их состояния вероятностью возникновения девиантного поведения. Цель исследования – оценка вероятности возникновения девиантного поведения у ВИЧ-инфицированных с непсихотическими психическими расстройствами. Проведенное комплексное клинико-психодиагностическое обследование 114 ВИЧ инфицированных пациентов с непсихотическими психическими расстройствами, включающие клинико-диагностическое интервью, патопсихологические и экспериментально-психологические методы исследования, в частности методику Ч.Д. Спилбергера в модификации Ю.Л. Ханина (STAI - State-Trait Anxiety Inventory) для оценки уровня тревожности, опросник Бека (Beck Depression Inventory - BDI-II) для оценка уровня депрессивной симптоматики, SCL-90-R методику (Symptom Checklist 90-Revised) для оценки психиатрических симптомов. Статистическую обработку результатов проводили с использованием методов описательной и аналитической статистики, реализованных в программном продукте STATISTICA 6.1 (StatSoftInc., Серийный № AGAR909E415822FA). Частота и выраженность депрессии и тревожности у ВИЧ инфицированных является существенной и превышает в 3,4 - 4 раза соответствующие показатели здоровой украинской популяции. Тревожные, депрессивные и другие психопатологические симптомы согласно шкал SCL90-R (за исключением обсессивно-компульсивного шкалы), более выражены у ВИЧ инфицированных с деструктивным поведением чем у пациентов без ее признаков. Доля пациентов с тяжелыми симптомами дистресса (GSI> 1) среди ВИЧ инфицированных составляет 66,7% и увеличивается до 94,1% у больных с деструктивными формами поведения. Шансы появления девиантного поведения у ВИЧ инфицированных с непсихотического психическими расстройствами повышаются при GSI> 1 в 20,0 раз (95% ДИ 5,63 - 71,07), при наличии депрессивной симптоматики в 6,76 раза (95% ДИ 2,16 - 21,18) и при высоком уровне личностной тревожности в 4,61 раза (95% ДИ 2,05 - 10,40). Психопатологическая симптоматика людей с ВИЧ статусом характеризуется повышенными показателями депрессии и тревоги, соматизации, наличием параноидальных идей, межличностной сензитивности. У пациентов, имеющих признаки девиантного поведения выразительность данных расстройств и индекса тяжести психопатологической симптоматики существенно выше (p<0,001) по сравнению с пациентами, которые не имеют такой характеристики. Согласно логистической прогностической модели, шанс развития девиантного поведения существенно возрастают при увеличении индекса общей тяжести состояния психопатологической симптоматики, при повышении уровня депрессии, и уровня личностной тревожности. Учитывая это при оказании медицинской помощи ВИЧ инфицированным, нужно учитывать их потребности в психокоррекции для предупреждения девиантного поведения.*

The problem of non-psychotic psychiatric disorders in patients with HIV status, especially anxiety and depressive disorders, is medico-social in nature because they are associated with late testing and delayed access to health care facilities and, accordingly, delaying the onset of antiretroviral therapy [8, 23].]. However, the prevalence of anxiety and depression symptoms is high even in the group of HIV patients who regularly undergo medical examination and treatment [4, 22].

Despite the emergence of highly active antiretroviral therapy, depression is the most common psychiatric consequence of HIV diagnosis, it exacerbates the burden of illness experienced by infected patients, and may exacerbate activities of daily living, adaptation, and vitality [24].

The introduction of psychosocial interventions to reduce depression and anxiety in HIV-positive adults has been shown to contribute to the long-term improvement of their quality of life [6].

Anxiety and depression are clinically important for the group of patients living with HIV/AIDS because they affect their quality of life, sleep patterns, adherence to ART therapy, cognitive function, and may lead to the weakening of the immune system of patients [2, 4, 10, 11, 14, 15, 22].

Earlier psychiatric symptoms were the most noticeable in patients with newly diagnosed HIV because of fear, uncertainty and uncertain prognosis, and in people with protracted AIDS because of severity of patients' condition. With the transition of HIV/AIDS to the model of chronic disease, psychiatric symptoms reflect both the HIV status of the individual and a number of non-medical problems of the infected [14]. In particular, a significant medical and social problem is the destructive behavior of this group of patients. The majority of non-psychotic psychiatric disorders in most cases are predictors of deviant behavior among HIV-infected persons, they are associated with risky sexual behavior, substance abuse [5], that of alcohol [9] and suicidal mind [13, 21] in this group of patients.

The coexistence of non-psychotic psychiatric disorders with HIV/AIDS has been linked to barriers to treatment and worsening medical outcomes, including resistance to treatment, increased risk of suicide, high likelihood of recurrence, and increased morbidity and mortality. Thus, assessment of depression and anxiety in HIV patients plays a key role in planning long-term successful therapy [13].

The introduction of psychosocial interventions to reduce depression and anxiety in HIV-positive adults has been shown to contribute to the long-term improvement of their quality of life [6].

Despite a large body of research on HIV/AIDS comorbidity and anxiety and depressive disorders in high-epidemic countries, there is a lack of such research in Ukraine, and studies that address this problem in the context of destructive behavior have not been found generally, and this determined the relevance of the study.

The aim is to assess the likelihood of deviant behavior in HIV-positive people with non-psychotic mental disorders.

MATERIALS AND METHODS OF RESEARCH

There have been examined 114 patients with HIV-related diseases (B20-B24 according to the International Statistical Classification of Diseases and Related Health Issues of 10 Review – ICD-10) undergoing treatment at the Dnepropetrovsk Regional Center for AIDS Prevention and Control during 2018-2019 and having signs of non-psychotic mental disorders.

A comprehensive clinical and psychodiagnostic examination was conducted, it included a clinical diagnostic interview using a self-developed map of the patient's study, pathopsychological and experimental-psychological methods of investigation. To determine the level of anxiety, Spielberg method (STAI - State-Trait Anxiety Inventory) in modification of Yu.L. Hanin was used. STAI allows rating both personal and reactive anxiety by the scale: up to 30 points including – low; 31-45 points – average; more than 45 points – high level of anxiety [20].

The severity of depressive symptomatology was assessed using the Beck Depression Inventory (BDI-II) [3], which was recognized as an adequate tool for HIV screening [16]. In an appropriate manner the results processed were evaluated as follows: 0-9 points – no depressive symptoms; 10-15 points – mild depression (sub-depression); 16-19 points – moderate depression; 20-29 points – expressed depression (moderate); 30-63 points – severe depression [3].

Psychiatric symptoms were evaluated using the SCL-90-R (Symptom Checklist 90-Revised) technique [7], which has been actively used to screen HIV/AIDS patients [1] and is validated for the Ukrainian population [17].

The evaluation and interpretation of the results was performed by 9 main scales/ subscales: somatization (SOMA); obsessive compulsive (OCD); interpersonal sensitivity (INT); Depression (DEPR); anxiety (Anxiety – ANX); Hostility (HOST); phobic anxiety (PHOB); paranoid ideation (PARA); Psychoticism (PSYC) and Additional Items (ADD),

which were taken into account in the overall processing of the test.

In interpreting the results, three generalized second-order scales were calculated: the General Symptomatical Index-GSI – the main integral index; the total number of positive responses (Positive Symptomatical Index-PSI); total severity of symptomatic distress (Positive Distress Symptomatical Index – PDSI).

The SCL-90-R norm limits were used in the 2014 population cohort study of a healthy population cohort. According to the recommendation of Ukrainian researchers, a level of GSI>1 was used to determine the proportion of patients with severe symptoms of distress [17].

Statistical processing of the results was performed using descriptive and analytical methods implemented in the software STATISTICA 6.1 (StatSoftInc., Serial No. AGAR909E415822FA).

The test of the hypothesis of normality of distribution of quantitative traits was carried out according to the criteria of Shapiro-Wilk and Kolmogorov-Smirnov, the test of equality of variances – according to Leuven. The arithmetic mean (M), standard deviation (SD) was used to describe the sample normal distribution of quantitative traits; when asymmetric - the median (Me), the interquartile range is 25-75%. The statistical significance of the differences in the mean for the quantitative traits in unrelated groups with normal distribution was performed by Student's t-test, with abnormal distribution by Mann-Whitney test. The statistical significance of differences in qualitative characteristics was performed using Pearson's Chi-square ($\chi2$) criterion, including Yates's correction for continuity.

Correlation analysis was performed with the calculation of the Pearson linear correlation coefficients (r) and Spearman rank correlation coefficients (rs); as well as simple logistic regression analysis calculating odds ratio with 95% confidence interval (CI) and multiple logistic regression analysis; ROC analysis with the calculation of standard operating characteristics and area under the ROC curve, evaluated according to the scale: 0.9-1.0 – excellent prognostic characteristics, 0.8-0.9 – very good, 0.7-0.8 – good, 0.6-0.7 – average, 0.5-0.6 – unsatisfactory [18]. The critical significance level of statistical significance for all types of analysis was assumed at <5% ($p<0.05$).

RESULTS AND DISCUSSION

There were examined 56 (49.12%) males and 58 (50.88%) females aged 21 to 62 years, an average age is 39.8 (9.17) years – M (SD). Patients were divided into two observation groups: group 1 (primary) – patients who had signs of deviant behavior (auto-aggressive, addictive, suicidal, antisocial, etc.) (51 patients – 44.7%); group 2 (comparison) – HIV infected without these signs (63 patients – 55.3%).

An assessment of the level of anxiety in HIV-infected persons showed that in more than one third of patients (37.8%) the level of personal anxiety was high (more than 45 points) and was statistically significantly higher in group 1 compared to group 2 – 46.6 (8.65) and 40.0 (6.93) points ($p\leq0.001$). Reactive anxiety rates in all cases were high (53.5%) and averaged 49.4 (9.80) and 41.3 (8.07) in group 1 and group 2, respectively ($p\leq0.001$) .

The mean level of depression by the BDI-II scale was 20.1 (6.99) points in the main HIV-infected group with signs of destructive behavior and 12.8 (7.66) points in the comparison group without these signs ($p<0.001$). The average level of depression among all the subjects corresponds to moderate depression, in group 2 – subdepressions, and in group 1 – severe depression.

Psychopathological symptoms of depression and anxiety, as defined by SCL-90-R, in patients with HIV status are more pronounced compared to the population of average Ukrainians (norm) – by 3.4 and 4 times, respectively. The frequency of other psychopathological symptoms in the examined patients is 2-4 times higher than the normative rates by all subscales (Table 1).

Concerning the results by the second-order generalized scales, in group 1 the increased PSI symptomatic index was established, which reflects the range of symptoms presentation and makes up 62.0 (55.0; 70.0) versus 51.0 (45.0; 59.0) in group 2 ($p<0.001$).

The PDSI severity index, reflecting the level of subjective symptomatic distress in HIV-infected people without signs of deviant behavior is 1.68 (1.57; 1.87) and 1.92 (1.70; 2.11) – with signs ($p<0.001$).

It was found that a general indicator reflecting the severity of psychopathological symptoms – the GSI index in the general sample was 3.3 times higher than the national standard and made up 1.31 (1.19; 1.45) in the main group, whereas in the comparison group it was statistically significant ($p<0.001$) – 0.93 (0.81; 1.12) (Fig. 1).

The GSI criterion> 1 was used to determine the proportion of patients with severe symptoms of distress. In total, there are 76 of these patients (66.7%), in group 1 – 48 (94.1%), which is statistically significantly (p<0.001) more as compared with group 2 – 28 (44.4%).

The overall index of severity of psychopathological symptoms correlates with the presence of deviant behavior (r_s=0.64; p=0.005), alcohol consumption (r_s=0.20; p=0.037), risky sexual behavior (r_s=0.20; p=0.031). Separate SCL-90-R scales correlate with personality and reactive anxiety indices as determined by STAI and depression levels as assessed by BDI-II. The most significant correlations were found between reactive anxiety and PSI symptomatic index (r_s=0.45; p<0.001), BDI-II depression level and DEPR scale (r_s=0.58; p<0.001), depression level by BDI-II and total GSI severity index (r_s=0.44; p<0.001), depression by BDI-II, and PSI symptomatic index (r_s=0.45; p<0.001).

Table 1

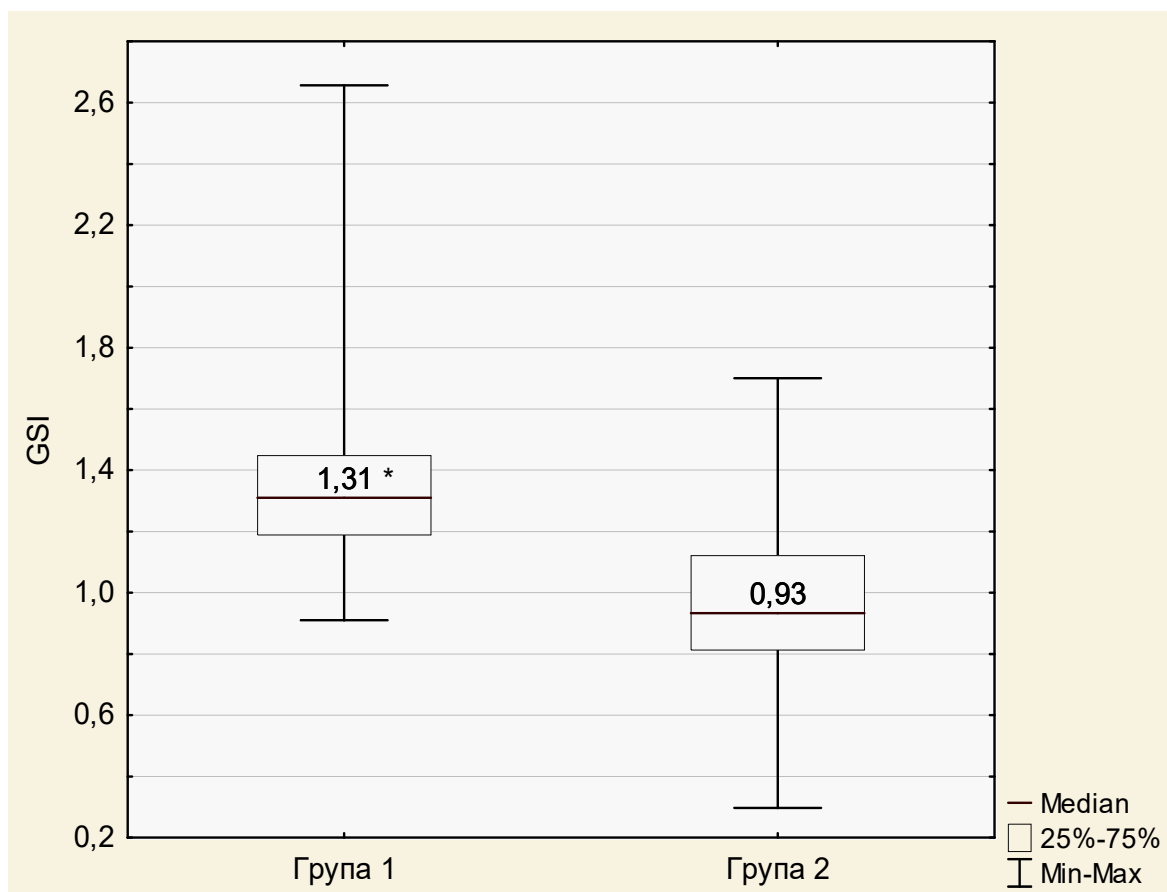**Rates of psychopathological symptom severity by SCL-90-R in HIV-infected patients**

Points Me (25%; 75%)	All surveyed (n = 114)	Group 1 (n = 51)	Group 2 (n=63)	*p*	Norm Me (IQR) [25]
SOMA	1.42 (1.08; 1.67)	1.54 (1.25; 1.75)	1.25 (1.00; 1.58)	*0.006*	0.58 (1.00)
OCD	1.00 (0.80; 1.20)	1.10 (0.80; 1.30)	0.90 (0.70; 1.20)	*0.166*	0.40 (0.80)
INT	1.22 (0.89; 1.56)	1.44 (1.22; 1.78)	1.00 (0.78; 1.44)	*<0.001*	0.33 (0.67)
DEPR	1.31 (0.92; 1.62)	1.62 (1.31; 1.85)	1.08 (0.77; 1.31)	*<0.001*	0.38 (0.77)
ANX	1.20 (0.90; 1.6)	1.50 (1.20; 1.70)	1.00 (0.70; 1.20)	*<0.001*	0.30 (0.70)
HOST	1.00 (0.50; 1.67)	1.33 (0.83; 1.67)	0.83 (0.50; 1.67)	*0.016*	0.33 (0.67)
PHOB	0.57 (0.43; 1.00)	0.86 (0.43; 1.14)	0.43 (0.29; 0.86)	*0.002*	0.00 (0.43)
PARA	1.33 (1.00; 1.70)	1.67 (1.30; 2.00)	1.17 (0.83; 1.67)	*<0.001*	0.33 (0.83)
PSYC	0.45 (0.30; 0.70)	0.60 (0.40; 0.80)	0.40 (0.20; 0.60)	*0.001*	0.10 (0.44)
ADD	1.00 (0.71; 1.57)	1.43 (1.00; 1.71)	0.86 (0.57; 1.14)	*<0.001*	0.43 (0.71)
GSI	1.14 (0.91; 1.31)	1.31 (1.19; 1.45)	0.93 (0.81; 1.12)	*<0.001*	0.35 (0.60)
PSI	57.0 (49.0; 63.0)	62.0 (55.0; 70.0)	51.0 (45.0; 59.0)	*<0.001*	-
PDSI	1.79 (1.61; 1.98)	1.92 (1.70; 2.11)	1.68 (1.57; 1.87)	*<0.001*	-

Notes: p – differences between groups according to the Mann-Whitney criterion; IQR – inter-quartile range.

To assess the likelihood of deviant behavior in HIV-positive people with non-psychotic mental disorders, in addition to simple, a multiple logistic regression analysis was performed with stepwise inclusion of independent variables – factors that can be considered as predictors of its occurrence: levels of personal and situational anxiety, intensity of depressive symptoms and general severity index of psychopathological symptoms GSI.

As a result, a logistic model for predicting the occurrence of deviant behavior in HIV-infected persons was developed (Table 2).

**Fig. 1. Psychopathological Symptomatic Severity Index GSI,
as determined by SCL-90-R in HIV-infected patients (median and interquartile range)**

The logistic regression equation does not include reactive anxiety index, but it does correlate with personal anxiety, so its effect on deviant behavior is indirect.

The logistic regression equation was used as a basis, which assumes that the result (in our case the probability of deviant behavior) is related to the factors studied by the formula:

$$y = exp(b_0 + b_{1-n} \times x_{1-n})/[1 + exp(b_0 + b_{1-n} \times x_{1-n})],$$

where:
y - the probability of destructive behavior (result) that varies in the range from 0 (no deviant behavior) to 1 (existing deviant behavior);

b_0 - coefficient (free equation term) indicating the value of the result when the predictors will be 0;

b_{1-n} - regression coefficients, which show how on average the logarithm of chance of developing deviant behavior changes in changing an independent variable per unit of measure;

x_{1-n} - predictor variables that are entered into the equation in existing values of units.

The result obtained by the equation will always be in the range from 0 to 1, and accordingly the probability of deviant behavior will change from the minimum (its absence) to the maximum value (its presence). According to conventional approaches [22], regardless of the magnitude of the predictors in the equation, if the predicted value of the probability result is less than 0.5, we can assume that the event does not occur - deviant behavior will not occur; otherwise, deviant behavior is predicted (probability greater than 0.5).

The developed logistic model proved to be adequate by the Chi-square criterion (χ^2=60.25; *p<0.001*); percentage of concordance (proportion of correctly reclassified observations 87.30%), Hosmer-Lemeshov concordance test (χ^2=10.68; *p=0.221*) and ROC analysis.

By the shape of the ROC curve and the size of the area under it (AUC), values of operational characteristics in the form of sensitivity and specificity, the estimation of prognostic accuracy of the logistic regression equation was made (Fig. 2).

Probability of deviant behavior in HIV-positive patients with non-psychotic psychiatric disorders based on multiple logistic regression analysis

Prognostic variables	Rregression coefficient β	Sstandard error β	χ2 Wald	p	Adjusted OR (95% CI)
Free member of the equation	-11.252	-	-	-	-
GSI (x_1)	6.137	1.289	22.672	*<0.001*	462.53 (36.99 - 5783.57)
Depression level by BDI-II (x2)	0.133	0.0308	18.706	*<0.001*	1.14 (95% ДІ 1.08 - 1.21)
Personal Anxiety Level by STAI (x3)	0.092	0.036	6.639	*0.010*	1.10 (95% ДІ 1.02 - 1.18)

Logistic regression equation:

$$y=exp(-11.252+6.137\times x_1+0.133\times x_2+0.092\times x_3) / [1+ exp(-11.252+6.137\times x_1+0.133\times x_2+0.092\times x_3)]$$

It is determined that the logistic model of prediction of the probability of deviant behavior on the basis of severity of psychopathological symptoms, levels of anxiety and depression has very good operational characteristics: sensitivity – 80.39%, specificity – 87/30%, area under the ROC curve – 0.885 (95.0% CI 0.812 – 0.937; *p<0.001*).
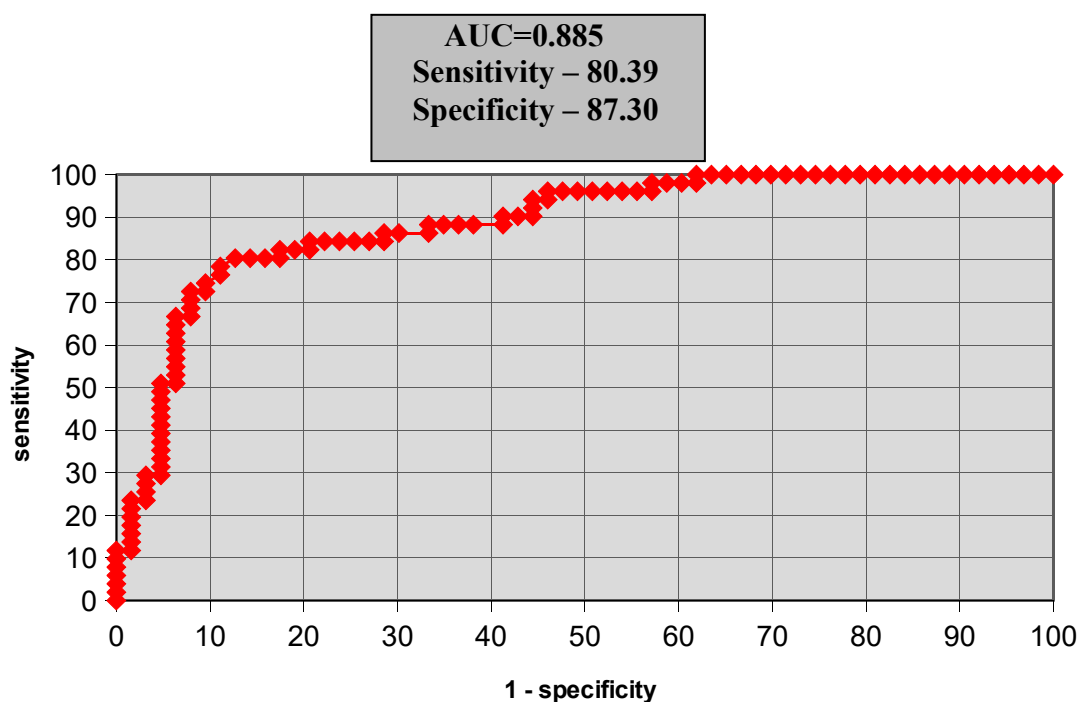

Fig. 2. ROC curve of estimation of results of prediction of probability of occurrence of deviant behavior in HIV-infected patients with non-psychotic mental disorders on the basis of determined logistic regression equation

Psycho-emotional state of HIV-infected persons is characterized by high rates of somatization, paranoid ideas, depression, interpersonal sensitivity, anxiety: according to these subscales, the highest average values among all surveyed (corresponding median values with interquartile range – 1.33 are determined (1.00; 1.70) points; 1.31 (0.92; 1.62) points; 1.22 (0.89; 1.56) points and 1.20 (0.90; 1.6) points).

Comparison of averages by SCL-90-R scales in the study groups showed that by all psychiatric symptoms except obsessive compulsivity, statistically significantly higher levels and, accordingly, more pronounced symptomatology were observed in the group of patients with deviant behavior as compared with patients without this characteristics (*p<0.05*).

In the main study group, the highest rates of psychopathological symptom severity were observed in patients by the scale of paranoid ideas (1.67 (1.30; 2.00) points), depression (1.62 (1.31; 1.85) points), somatization (1.54 (1.25; 1.75) points) and anxiety (1.50 (1.20; 1.70) points), the lowest - by the scale of psychoticism (0.60 (0.40; 0.80)) points).

In the comparison group, symptoms of psychotism (0.40 (0.20; 0.60) points) are also least pronounced, while somatization (1.25 (1.00; 1.58) points), paranoid ideas (1.17 (0.83; 1.67), depression (1.08 (0.77; 1.31)), anxiety (1.00 (0.70, 1.20)), and interpersonal sensitivity (1.00 (0.78; 1.44) points) occupy the leading position.

Leading position of indisces revealed in group 2 by the scale of somatization shows, that somatovegetative components, symptomatic diseases in HIV status and not HIV infection itself increase the risk of developing non-psychotic psychiatric disorders.

Paranoid ideas that dominate in group 1 characterize thinking disorders in HIV-infected persons with deviant behavior, due to the appearance of projective thoughts, hostility, suspicion, arrogance, fear of loss of independence, etc.

Interpersonal sensitivity in HIV-infected people, common in both groups but more pronounced in the main group, is determined by feelings of personal inadequacy and inferiority, especially when comparing themselves with others. This scale identifies self-conviction, discomfort of interpersonal interaction and any communication with other people, which may indicate the difficulty of psychosocial adaptation of HIV-positive people.

The probability of acquiring severe distress symptoms (GSI>1) increases with high levels of reactive anxiety (≥45 points) – OR=2.35 (95% CI 1.06 – 5.22), *p=0.035*; sexual risk behavior – OR=2.38 (95% CI 1.07 – 5.27), *p=0.033*; the presence of suicidal tendencies – OR=3.59 (95% CI 1.41 - 9.15), *p=0.008*.

The development of depressive disorders in patients with HIV-status increases with high levels of reactive anxiety (≥45 points) – OR=4.67 (95% CI 1.78 – 12.25), *p=0.002*; personal anxiety (≥45 points) – OR=3.41 (95% CI 1.18 - 9.83), *p=0.023*; the presence of suicidal tendencies – OR=6.20 (95% CI 1.74 – 22.15), *p=0.005*.

The occurrence of deviant behavior in HIV-positive persons with non-psychotic psychiatric disorders increases with high levels of reactive anxiety (≥45 points) – OR=4.29 (95% CI 1.93 - 9.54), *p<0.001*; personal anxiety (≥45 points) – OR=4.61 (95% CI 2.05 – 10.40), *p<0.001*; the presence of depressive symptoms – OR=6.76 (95% CI 2.16 – 21.18), *p=0.001* and severe symptoms of distress (GSI>1) – OR=20.0 (95% CI 5.63 – 71.07), *p<0.001*.

According to the values of the regression coefficients of the obtained logistic regression equation, the probability of developing deviant behavior is most influenced by the overall severity index of the psychopathological symptomatology GSI, defined by SCL-90-R; further in descending order – depression level by BDI-II and personal anxiety level defoned by STAI.

According to the values of the odds ratio adjusted for the influence of other factors, for each unit of GSI increase in fixing the rest of the model variables, the chances of developing deviant behavior grow by 462.53 times. In practice this indicator cannot increase in such a large range, but its impact on the result being tested is very significant.

CONCLUSIONS

1. According to the study, psychopathological symptoms of people with HIV- status are characterized by high rates of depression and anxiety, somatization, paranoid ideas, interpersonal sensitivity. In patients with signs of deviant behavior, the severity of these disorders, as well as indicators of the severity index of psychopathological symptoms and the manifestation of subjective symptomatic distress were significantly higher (p<0.001) as compared with individuals without patterns of deviant behavior.

2. The proportion of patients with severe symptoms of distress (GSI>1) among HIV-infected persons is 66.7% and reaches 94.1% in patients with behavioral disorders.

3. The level of personal and situational anxiety, as well as depression and psychopathological symptoms (other than obsessive-compulsiveness), as estimated by SCL-90-R, are significantly higher in the group of HIV-infected patients with deviant behavior than in patients without this characteristics (p≤0.001).

4. In order to identify psychological and psychopathological risk factors for deviant behavior in non-psychotic psychiatric disorders in HIV-infected, a model for predicting its occurrence based on indicators of personal and situational anxiety, the level of depressive symptoms and general psychosymptomatology was developed.

5. The obtained logistic regression equation has very good operational characteristics, the area under

the ROC curve is 0.885 (p<0.001). Statistical estimation of logistic regression equation showed its significance: $\chi2=60.25$ (p<0.001).

6. According to the logistic predictive model, the chance of developing deviant behavior significantly increases with the increase in the overall severity index of psychopathological symptoms of GSI, defined by SCL-90-R, with increasing levels of depression defined by BDI-II, and the level of personal anxiety defined by STAI.

7. The chances of developing deviant behavior in HIV-positive people with non-psychotic psychiatric disorders are increased at GSI>1 by 20.0 times (95% CI 5.63 - 71.07), in depression symptoms – by 6.76 times (95% CI) 2.16 - 21.18) and at a high level of personal anxiety – by 4.61 times (95% CI 2.05 - 10.40).

8. The data obtained indicate that deviant behavior accompanies non-psychotic psychiatric disorders among HIV-infected persons and worsens their mental state. The treatment of this group of patients may be more successful in timely diagnosed behavioral disorders among HIV-infected patients, which will meet the needs of this group of patients both in highly active antiretroviral therapy and in appropriate psychiatric care. This conclusion proves the need for special measures, appropriate psycho-correction in response to the mental health problems of HIV-infected people, connected with deviant behavior in non-psychotic mental disorders.

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