Dynamics of the Life Quality Parameters in HIV-Positive Patients With Opiate Dependence

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The aim of the study was to investigate QL (the quality of life) in HIV-positive (ODHIV+) and HIV-negative (ODHIV-) patients with opiate dependence before and after treatment at the stage of remission establishment and stabilization. SF-36 questionnaire was used to assess the quality of life in studied samples. ODHIV+ patients showed significantly lower QL level compared to ODHIV- patients. Despite of the positive dynamics of QL parameters after the treatment in ODHIV+ subjects, their values were still significantly lower than in healthy individuals at the stage of remission establishment and stabilization which indicates a failure of a basic therapy course to normalize QL in such patients and the need for correction of the existing management tactics regarding them with the use of a long-term complex program of treatment and rehabilitation.

Keywords: quality of life, opiate addiction, HIV infection

Introduction

The problem of a SF (social functioning) and QL in subjects with addictive behavior is one of the most prominent at present. More and more attention is paid to an integrated approach towards diagnostics and treatment of drug dependence involving organizational, clinical, social, environmental, and psychological factors. The emphasis in management strategy is now shifting towards partnerships with dependent patient. Such approaches are assumed to improve the quality of medical care provided for the drug addicted patients, creating a comprehensive treatment model (Stan'ko, 2013).

The state of a problem of drug use in contemporary society requires constant monitoring of SF and QL changes during treatment process and development of the appropriate assessment tools, especially in case of comorbid HIV infection. The presence of disease allows an individual to develop certain adaptive mechanisms which permit him to maintain relatively stable QL level, but the addition of the other disorders disrupts the established stereotype and reduces the QL (Sergeeva, 2014).

The current understanding of ODHIV+ patients' adaptive capacities, need for treatment and rehabilitation by psychiatrists does not fully contribute to the effective resolution of the problems existing in the field of addictology and does not fully reflect the level of provided medical care. It emerges the need for development of the adequate criteria for dynamic health assessment in drug users with comorbid HIV infection which significantly reduces their adaptive resources and drastically alters the SF and QL (Litvincev, 2004).

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Study Aim

The aim of the study is to compare QL parameters in ODHIV+ and ODHIV- patients before and after treatment at the stage of remission establishment and stabilization. The goals of the study include the assessment of the clinical, social and psychological characteristics of patients with opiate dependence, comparative analysis of the dynamic changes of QL parameters in ODHIV+ and ODHIV- patients before and after treatment at the stage of remission establishment and stabilization.

Material and Methods

The object of the study is represented by ODHIV+ patients with opiate dependence residing on the territory of Belarus. The subject of the study—clinical, social, and psychological characteristics of drug addicted patients with and without HIV infection before and after treatment at the stage of remission establishment and stabilization.

The present study has combined design (cross-sectional and longitudinal) with regular monitoring (six times) of QL parameters before and after treatment, with the follow-up observational periods corresponding to 1, 3, 6 and 12 months. The clinical study was performed in accordance with the rules of GCP (good clinical practice), using the protocol with the standardized registration card of patient (*Good clinical practice: The national standard of Russian Federation*, 2005).

A total of 376 ODHIV+ patients (I group) and 444 ODHIV- patients (II group) were examined. The main group (I) included patients with established diagnosis “opioid dependence” F11.2x and “HIV” B20 according to the ICD-10 criteria. The age of ODHIV+ subjects ranged from 13 to 53 years with the mean age 32.9 years ($SD = 5.54$), for men—33.7 years ($SD = 5.59$) and for women—30.8 years ($SD = 4.86$). The illness duration reached 10 years and more. Some patients were excluded from the main group: those who did not agree to participate in the survey, who had withdrawal state, prominent organic personality changes, acute psychotic disorder, relapse of mental illness or physical illness decompensation, mental retardation, schizophrenia. Thirty healthy individuals were used as a control group (Nenastjeva et al., 2007). Verification of somatic pathology was performed by the qualified personnel of specialized medical institutions using modern diagnostic equipment.

To investigate QL parameters, we used SF-36 (the Short Form-36) questionnaire which is widely used in population-based and specialized studies of QL (Laudet, 2009; Hollander, 2010; Ware & Sherbourne, 1992). Thirty six items of the SF-36 questionnaire are grouped into eight scales, indicators of which form the profile of physical and mental health. The results are presented in scores of the scale ranging from 0 to 100, where 0 is the worst and 100 is the best quality of life. The higher score indicates the higher level of life quality.

Statistical analysis was performed using the software package Statistica 10.0 (SN AXAR207F394425FA-Q). In order to describe the distribution of quantitative traits in the studied samples, we used the mean score (M) and standard deviation (SD) in the format $M \pm SD$, median (Me), upper and lower quartiles (interquartile range). To compare the quantitative variables in groups, we used nonparametric methods: U-Mann-Whitney test for independent samples and Wilcoxon test for related samples. The reliability criterion for differences was considered as the level of significance $p < 0.05$.

Results and Discussion

The problem of QL in ODHIV+ patients with health and social consequences and complications is under investigated. Studies concerning the impact of HIV infection and the effectiveness of its treatment on the

quality of patient's life focused largely on the clinical aspects of disease rather than on the actual parameters of the life quality. Generally, the QL assessment is carried out based on the final clinical results.

The majority of patients in the studied sample had low educational level, problems with family and occupation, low moral principles and criminal behavior. Patients reported that drug dependence and health problems affected significantly their vitality, emotional state, social functioning as a whole and the level of social contacts in particular. When comparing the QL parameters in both groups of patients before treatment, it was found that ODHIV+ patients had lower scores on the corresponding scales (see Table 1).

Table 1

QL Parameters in Drug-Dependent Patients With and Without HIV Infection Prior to Treatment

Group	Scales of SF-36 questionnaire							
	PF	RP	BP	GH	VT	SF	RE	MH
I	66.26 ± 21.73	26.26 ± 37.55	45.78 ± 27.99	40.98 ± 15.93	41.22 ± 16.86	44.91 ± 23.65	20.20 ± 32.65	44.84 ± 15.66
II	68.84 ± 23.25	36.24 ± 39.86	51.66 ± 31.65	45.83 ± 16.26	44.26 ± 17.28	46.79 ± 21.20	24.25 ± 34.19	48.77 ± 17.05
K	87.18 ± 0.66	86.61 ± 0.95	76.88 ± 0.71	73.48 ± 0.62	63.59 ± 0.62	85.23 ± 0.66	88.28 ± 0.96	76.37 ± 0.53
p	0.02	0.0002	0.009	0.0001	0.002	0.129	0.03	0.0004

Notes. p: level of significance according to Mann-Whitney U -Test; K: control group (healthy subjects).

As can be seen from the Table 1, the lowest QL values in both I and II groups prior to treatment were observed for scales RP (role-physical functioning) and RE (role-emotional functioning). Group I demonstrated lower values for RP and RE scales ($p < 0.05$). Higher QL scores were registered for PF scale in both groups of patients, and group II had the highest values ($p < 0.05$). All of the patients had less than 50 points out of 100 possible for every QL scale before treatment, except for the PF and BP scores in ODHIV- subjects.

It should be noted the positive dynamics of QL parameters in I and II groups of patients after the basic course of therapy (see Table 2).

Table 2

Dynamics of SF-36 Parameters in ODHIV+ and ODHIV- Patients After Course of Treatment

SF 36	Group I (n = 376)							
	PF	RP	BP	GH	VT	SF	RE	MH
Means	74.79	39.01*	58.03*	42.41*	47.39	52.28	36.93*	49.24*
Std.Dev	18.70	45.14	31.52	13.73	15.53	23.74	44.50	14.35
Q25	60.00	0	32.00	35.00	40.00	37.50	0	40.00
Median	80.00	0.00	51.00	40.00	45.00	50.00	0.00	48.00
Q75	90.00	100.0	94.00	50.00	55.00	75.00	100.0	60.00
SF 36	Group II (n = 444)							
	PF	RP	BP	GH	VT	SF	RE	MH
Means	78.75	52.43*	60.83*	47.51*	48.68	53.17	40.75*	54.27*
Std.Dev	18.53	43.73	33.44	16.90	17.71	20.47	42.16	16.55
Q25	70.00	0	32.00	35.00	40.00	37.50	0	44.00
Median	85.00	50.00	62.00	45.00	50.00	50.00	33.33	54.00
Q75	95.00	100.0	100.0	60.00	60.00	62.50	100.0	68.00

Note. * $p < 0.05$.

As can be seen from Tables 1 and 2, the pain severity has decreased in both groups of patients after treatment which is confirmed by the increase in average BP score. Patients assessed the level of GH (general

health) and VT (vitality) as below average. GH and VT values in both groups were less than 50 points before and after the basic course of treatment. ODHIV+ patients demonstrated lower scores on this scale ($p < 0.05$).

Evaluation of the level of SF in both groups before the treatment has showed the presence of restrictions in patient's social life due to the health problems and the impact of physical and emotional state. We observed the increase in SF values after the treatment course which accounted for 52.28 ± 23.74 points in ODHIV+ patients and 53.17 ± 20.47 points in ODHIV- patients. The level of MH (mental health) was estimated with less than 50 points by patients in both groups. Despite of the relative increase in MH scores in all patients, the ODHIV+ subjects had less than 50 scores after the treatment, unlike ODHIV- subjects (54.27 ± 16.55). Thus, despite of the basic course of treatment, QL scores in patients were still lower than those in healthy individuals. ODHIV+ subjects had significantly lower values for RP, BP, GH, RE, and MH scales than ODHIV- patients, the values of these scales remained below 50 points after the treatment, except for the index of BP.

It should be noted their regular way of SF-36 values changing in I and II groups during the follow-up stage (see Table 3).

Table 3

Dynamics of SF-36 Values in ODHIV+ and ODHIV- Patients at the Stage of Remission Establishment and Stabilization

Month	Group I (n = 376)															
	PF		RP		BP		GH		VT		SF		RE		MH	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
1	73.63*	19.95	36.60*	41.76	56.94*	25.31	44.42*	15.65	45.27*	11.37	47.55*	17.62	36.82*	43.12	51.56*	43.24
3	76.95*	19.35	46.73*	43.37	53.22*	20.28	44.93*	13.05	48.64*	12.55	51.39*	19.32	41.39*	42.92	51.76*	13.37
6	76.54*	18.28	52.30*	45.71	61.06*	24.66	44.28	13.58	47.68*	12.81	50.74*	19.68	47.59*	45.49	51.17*	13.41
12	76.20*	17.92	49.31*	45.64	62.07*	24.52	44.83	14.05	48.88*	12.55	51.81*	19.87	45.75*	46.31	52.34*	15.45
Month	Group II (n = 444)															
	PF		RP		BP		GH		VT		SF		RE		MH	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
1	81.75*	21.66	67.93*	34.83	75.19*	26.77	46.64*	14.80	48.99*	17.08	62.30*	20.34	63.70*	36.31	55.02*	14.44
3	83.88*	21.64	72.75*	31.13	71.84*	23.64	47.49*	13.46	52.60*	16.70	67.92*	17.92	62.61*	35.91	57.28*	14.61
6	82.28*	21.13	74.87*	33.44	78.62*	22.39	45.64	14.12	52.11*	17.53	67.74*	19.44	70.43*	37.54	57.55*	15.15
12	82.44*	19.34	72.70*	36.09	79.23*	22.56	47.09	13.96	55.56*	17.74	69.87*	18.73	71.37*	36.83	60.90*	17.60

As can be seen from the Table 3, the state of health in patients of both groups did not alter significantly their physical activity during the period of remission formation and stabilization. BP values were 1.3 times higher in ODHIV- patients than in ODHIV+ patients. Dynamic bodily pain more often limited daily activities of ODHIV+ subjects as well as their ability to work at home or out of home. GH (general health) was assessed with less than 50 points in both groups of patients during the whole observation period indicating the prevalence of pessimistic attitude towards their own health and treatment perspectives and low resistance to disease. The similar dynamics was observed for VT scores that did not reach 50 points in ODHIV+ patients during the observation period and demonstrated the low level of patient's vitality and energy, weakness, fatigue, and decreased performance.

Normalization of the social activity (scale SF) was faster in ODHIV- patients compared to ODHIV+ subjects at the stage of formation and stabilization of remission, which reflects the different level of social

characteristics of the former with more support from relatives and friends. One month after the start of the observation on the SF value in ODHIV- subjects increased by 1.3 times, after three months—by 1.4 times, after 12 months—by 1.5 times which accounted for 69.87 ± 18.73 points. The average SF value in ODHIV+ patients for the entire observational period was 49.78 ± 20.65 out of possible 100 points. The social activity of ODHIV+ patients which was low in comparison with healthy subjects and reduced in relation to ODHIV- patients demonstrates the influence of HIV infection on the formation of restrictive behavior which manifests in narrowing of the social contacts and reduced communication due to the deterioration of their physical and emotional state.

The level of MH and adaptation to the social environment in group I patients was significantly lower compared to that of patients in group II at the stage of remission formation and stabilization ($p < 0.05$). The average value of MH in ODHIV- patients was 57.69 ± 15.45 , and in ODHIV+ patients— 51.71 ± 21.37 points, which is significantly lower than in healthy individuals. Compared to ODHIV- subjects, ODHIV+ patients more often described their mood as unstable, with reduced emotional and behavioral control, with anxiety and depressive feelings that altered their calmness, affected their functioning and reflected their mental problems.

Not only physical discomfort interfered the patient's adequate social activity, but also emotional problems associated with the disease, which manifested in decreased scores for the RP (role-physical) and RE (role-emotional) scales (see Figures 1 and 2).

The presence of physical problems severely restricted the patients' performance in their daily activities. The RP value which reflects the role of physical problems in everyday life restrictions was the lowest in both groups of patients before the treatment (see Figure 1). RP scores in ODHIV+ patients (26.26 ± 37.55) were 1.4 times lower compared to ODHIV- patients (36.24 ± 39.86). Even after the basic course of treatment, RP value in ODHIV+ patients accounted for only 39.01 ± 45.14 points out of possible 100 points and in ODHIV- patients is was 52.43 ± 43.73 .

Figure 1. Scores of the role-physical functioning scale in ODHIV+ and ODHIV- patients in dynamics.

As can be seen from Figure 1, the physical state of patients in I and II groups significantly limited their daily activities. Despite of the positive RP dynamics after the treatment course and at the stage of formation and stabilization of remission, its values in both groups are still lower than in healthy individuals. The average RP value in ODHIV+ patients is 1.6 times lower compared with ODHIV- subjects (46.24 ± 44.12 vs. 72.06 ± 33.87 respectively) at the stage of remission establishment and stabilization. The presence of HIV infection significantly limited the treatment effecting ODHIV+ subjects during the course of treatment as well as after its completion ($p < 0.05$).

Emotional problems associated with the disease led to the restriction of physical and social activity in patients of both groups and impaired their daily functioning. The most prominent restrictive behavior due to the emotional problems was observed in ODHIV+ patients group before and after the treatment (see Figure 2).

Figure 2. Scores of the role-emotional functioning in ODHIV+ and ODHIV- patients in dynamics.

As can be seen from Figure 2, the lowest RE value before the treatment was observed in ODHIV+ group (20.20 ± 32.65), which is 4.3 times lower compared to the healthy individuals and 16.7% less than in ODHIV- group (24.25 ± 34.19) at $p < 0.05$. The curve of dynamic RE changes goes upward in ODHIV- patients, reflecting its higher values compared to ODHIV+ group. The average RE score accounted for 67.03 ± 36.65 in ODHIV- patients and 42.89 ± 44.46 in ODHIV+ patients at the stage of formation and stabilization of remission. Emotional problems which limited ODHIV+ patients' daily activities before the treatment clearly affected their life.

Despite of the improvement in ODHIV+ patients' emotional state after the treatment course and during subsequent remission, the level of their emotional problems remained high and significantly restricted their behavior in everyday performance, increasing the time spent on work, reducing work volume and quality, slowing the physical and social activity. Higher RE values in ODHIV- patients at the stage of remission formation and stabilization reflect their more favorable social characteristics, relatively intact social status and better family microclimate, including support from relatives and friends.

Conclusions

QL in ODHIV+ patients depends on their physical and psycho-emotional state, which is confirmed by the low scores on RP and RE scales and reflects the restriction of their psychological adaptation and social functioning as well as the severity of the disease.

QL in patients with opiate addiction depends on the presence of comorbid disease, which reduces QL values, the effectiveness of treatment and indicates their increased dependence on aid of others.

The basic course of treatment allows to achieve the clinical improvement, but not the improvement in QL in ODHIV+ patients at the stage of remission formation, suggesting the need to develop an algorithm of management of such patients including long-term comprehensive treatment and rehabilitation programs focused on the patient's needs and requirements.

The low QL level in ODHIV+ patients is determined by their restrictive behavior before treatment course with its minor changes in dynamics, painful sensations, pessimistic perception of one's own health, asthenia, permanent weakness, fatigue, low vitality, narrowing of social contacts due to the deterioration of physical and emotional states. An adequate social activity in such patients is altered by their physical ailment and emotional problems associated with the disease, which manifests in limitations in their lifestyle and decrease of the related QL scale values.

The presence of HIV infection limited therapeutic effect on patients with opioid dependence during the treatment process as well as after the basic therapeutic course. Despite of the positive dynamics during remission formation, the values of QL in ODHIV+ patients remain lower than in ODHIV- patients and healthy subjects, indicating the insufficiency of a basic course of therapy for the normalization of QL in such patients and the need to develop an algorithm of care with the long-term comprehensive treatment and rehabilitation programs focused on the patient's needs. Higher QL parameters in ODHIV- group and their normalization at the stage of remission reflect their more favorable social characteristics compared with ODHIV+ patients, relatively intact social status and better family microclimate, including support from relatives and friends.

Instrumental methods of research focused on the inter-group differences show good sensitivity for the assessment of state changes in drug addicted patients, treatment effectiveness and the likelihood of relapse at the stage of remission formation. The dynamics of QL parameters has informative and changeable nature, which should be taken into account when assessing the risk of the adverse events in the course of therapy and the likelihood of relapse at the stage of remission formation. By revealing the different ratio of psycho-emotional and social problems, the comparative QL assessment helps to distinguish the groups of patients with different levels of social functioning and disease severity, allowing to choose for them the priority lines for drug, psychotherapeutic and psycho-social support and to optimize the programs of treatment and rehabilitation affecting the course and prognosis of the disease.

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