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CLINICAL MANIFESTATIONS OF POST-TRAUMATIC SYNDROME IN COMBATANTS WITH EYE TRAUMA AND PARTIAL VISION LOSS

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Abstract

Optic traumata are quite often found in the structure of modern combat trauma. Acquired as an adult, the loss of vision as a result of home accident injury entails the destruction of the victim's usual life stereotype. In the case of partial loss of vision of the traumatic genesis due to injury in battle, the victim has the influence of powerful stress factors that affect the victim's mental health. This is the phenomenon of mental maladjustment and it develops in response to participation in military actions and presents a powerful stress factor. In the work presented these are clinical manifestations of post-traumatic syndrome, which by their expressiveness and spectrum did not correspond to the diagnosis of post-traumatic disorder, which made it impossible to form such a clinical diagnosis. The interaction of these main factors, their influence upon one other, form complex of mental manifestations of somatic trauma. Therefore, there is a need to develop specialized, highly targeted approaches to medical and psychological rehabilitation of combatants with partial loss of vision of traumatic genesis against the background of clinical manifestations of post-traumatic syndrome. Neglect of any of these factors leads to ineffective rehabilitation work with this contingent. **The objective:** to study the phenomenology of psychological manifestations in

combatants with optical injuries and partial loss of vision against the background of clinical manifestations of post-traumatic syndrome, and further determination of the targets for medical and psychological measures for their rehabilitation. **Materials and methods.** Under PIC conditions, 100 combatants were examined. 54 of them had optic injury and partial loss of vision on the background of clinical manifestations of post-traumatic syndrome; 46 had clinical manifestations of post-traumatic syndrome. 59 men with partial loss of vision as a result of home accident formed group of comparison. **Results and discussion.** In combatants with military optic trauma and partial loss of vision against the background of clinical manifestations of post-traumatic syndrome, the latter are dominant. The clinical symptoms of victims with a military optic injury against the background of clinical manifestations of post-traumatic syndrome reflect the structure of the manifestations of post-traumatic syndrome and demonstrate the direction of their formation against background of neurotic symptoms. The relevance of clinical symptoms in the subjects under study in its importance predominates over that which develops after home optic accident.

Key words*:* post-traumatic syndrome, neurotic symptom, stress, optic trauma, combat actions.

Introduction. Injuries of the vision organ are quite common in the structure of modern military trauma and different researches have shown that they rank second in frequency. According to the US Army data, during the Iraqi campaign, optic traumata accounted for about 6% of all battle injuries, and in the Vietnam War, about 50% of the persons affected subsequently lost their sight [1]. According to the ophthalmological clinic of the National Military Medical Clinical Center (2017) in the structure of ophthalmic injuries, 52% are fragmentary and other mechanical injuries, which were not accompanied by massive traumatic brain injury as a result of a mine-explosive experience [2].

Acquired in adulthood, the loss of vision due to its non-battle nature, entails the destruction of the victim's habitual stereotype. It requires him to acquire new social roles, adapt to a life with limitations. These changes affect almost every area of the individual's life, his or her personality, interaction with family and society, etc. [3, 4].

In the event of a partial loss of vision of traumatic genesis as a result of battle injury, the victim is affected by powerful stress factors that imprint on his mental health. First of all, these are the phenomena of mental maladaptation that develops through the change of civilian way of life to the military one and participation in military actions. Of course, direct involvement in military operations is a powerful stress factor associated with the development

of psychological or even psychopathological response to stress. In our study we investigated clinical manifestations of post-traumatic syndrome that, by their expressiveness and spectrum, did not correspond to the diagnosis of post-traumatic disorder and it did not provide an opportunity for such a clinical diagnosis. In addition, ocular trauma with partial loss of vision is a stressful factor, which in itself and its consequences is a serious factor that destroys the victim's lifestyle. The interaction of these major factors, their mutual influence, form a complex of mental manifestations of somatic trauma.

Despite the fact that the origins and consequences of each manifestation are different, the importance of studying their interaction is undeniable. Therefore, there is an urgent need to develop specialized high-targeted approaches to medico-psychological rehabilitation of combatants with partial loss of vision of traumatic genesis against the clinical manifestations of post-traumatic syndrome, as neglect of any of these factors leads to ineffective rehabilitation of the contingent under study.

The objective: to study the phenomenology of psychological manifestations in combatants with optic trauma and partial loss of vision at the background of clinical manifestations of post-traumatic syndrome and determine further targets for medico-psychological measures of their rehabilitation.

Materials and methods. Under the conditions of PIC and stick by the principles of bioethics and deontology, 100 combatants were examined during 2014–2018. 54 of them had eye injury with partial vision loss at the background of clinical manifestations of post-traumatic syndrome; 46 subjects had clinical manifestations of post-traumatic syndrome (CMPTS). The examined aged 20–53 y.o. Group of comparison (CG) consisted of 59 men with partial loss of vision as a result of home accident. Thus, in total, 159 persons participated in the study. Candidates with clinically observed and officially diagnosed (by medical establishments) brain injuries that could accompany the trauma of eyes were excluded from the study. Persons with officially established alcoholism, drug and substance abuse were excluded from the research, too.

All respondents were screened for a psychiatric condition using CAPS Scale [5], Neurotization and Psychopathization (NPQ) questionnaire [6], and consulted by a psychiatrist. 100 examined had significant clinical manifestations of post-traumatic syndrome, 54 persons engaged in active combat and had partial loss of vision, and 46 were combatant without optic injuries. The diagnosed clinical manifestations of post-traumatic disorder in their completeness were close, but did not fully meet the diagnostic criteria of this clinically delineated syndrome, so they were characterized as "manifestations of post-traumatic

syndrome". In those who had domestic traumatic injury, there was no clinically identified psychopathology. The mental state examination was carried out for 6-7 months after surgical intervention in persons with eyes traumatic lesions, and after completion of participation in the military actions and demobilization of combatants.

These results were the basis for the formation of study groups. Thus, 3 groups were formed: the index group (IG) - 54 combatants with eye trauma and partial vision loss with clinical manifestations of post-traumatic syndrome; Comparison Group 1 (CG1) - 46 combatants with clinical manifestations of post-traumatic syndrome; Comparison Group 2 (CG2) - 59 men with partial vision loss due to domestic injury.

The criteria for exclusion of candidates from the study groups were: the presence of clinically observed and officially verified (in medical establishment) diagnoses of brain injuries that could accompanied optical trauma. Candidates with mental illnesses, including alcoholism, drug and substance abuse did not take part in the research.

The distribution of the persons under examination into study groups is presented in Table 1.

Table 1

Distribution of the persons under surveyed into groups

Diagnosis	Optic trauma with partial loss of vision in combatants with clinical manifestations of post-traumatic syndrome	Combatants with clinical manifestations of post-traumatic syndrome	Optic trauma with partial loss of vision (home accident)
Group	IG	CG1	CG2
Number	54	46	59

The participats underwent both clinico-diagnostic and psychodiagnostic examination. For this purpose "Clinical questionnaire for the detection and evaluation of neurotic conditions (KK Yakhin, DM Mendelevich) and "Gieser Beschwerdebogen (GBB)" [6] were applied. When interviewing the study participants and their relatives, complaints and disturbing features of their behavior were identified. At the same time, the intensity of complaints or behavior relevance was evaluated according to 6-point scale: 0 - no symptom; 1 - is revealed by a detailed questioning; 2 - slightly worried; 3 - is of moderate concern; 4 - very concerned; 5 - extremely intense anxiety of the patient. The results of the study were processed by statistical analysis.

Results of the study and their discussion. The symptomatology for the analysis revealed during the clinical-diagnostic examination was distributed in groups according to their affiliation with the relevant area of the mental sphere (Table 2).

Table 2

Structure and amount of symptoms

Manifestations	Groups		
	IG	CG1	CG2
Emotional	8.23 ± 0.42 p ***	7.53 ± 0.41 p ***	2.26 ± 0.27
Cognitive	5.75 ± 0.36 p ***	5.74 ± 0.31 p ***	1.23 ± 0.24
Behavioral	8.47 ± 0.40 p ***	6.83 ± 0.41 p ***	1.80 ± 0.17
Mnestic			
Dissomnic	4.73 ± 0.32 p ***	4.61 ± 0.35 p ***	0.91 ± 0.32
Addictive	3.71 ± 0.35 g ***	3.42 ± 0.31 g ***	0.71 ± 0.28
Deviant	2.82 ± 0.37 p ***	4.83 ± 0.31 p ***	0.52 ± 0.24
Somatic (vegetative)	7.84 ± 0.32 p ***	6.71 ± 0.362 p ***	2.41 ± 0,23

Significance: p - in relation to CG2 group; p1 - between IG and CG1. Probability: * <0.05, ** <0.01, *** <0.001.

When comparing the symptoms found in all areas, their number in IG and CG1 significantly exceeded those of CG2 participants. This indicates that the manifestations established were primarily related to the clinical manifestations of post-traumatic syndrome. And the tendency to their increase is connected with psychological reaction of the victims' personality to optic trauma. Their interaction as response to trauma led to increased symptoms of post-traumatic manifestations. It should be noted that in their spectrum they corresponded to the leading complexes of post-traumatic syndrome manifestations. They had features of each victim clinical picture with the peculiarities of syndrome formation. They reflected its origins, peculiarities of formation and leading disturbances of syndrome formation. This was manifested in characteristic and persistent tendency to a higher level of symptomatology in the form of emotional, behavioral, dysomonic actions and deviant statements of combatants.

Among emotional manifestations the symptoms, anxiety and its derivatives in the form of dysphoria, anger predominated.

Behavioral ones tended to revolve to heightened conflict, aggression, confrontation with relatives ones and friends, when contacting various fields public services. It should be noted that the individual considered these manifestations negative and related to the participation in the military actions. These signs were regarded as a painful and intrusive reaction and behavior to those challenges and problems that the individual faced in engaging in combat. There have always been causes of such behavior that have been associated with combat trauma. Mnestic, dissomnic and cognitive manifestations in IG and GC1 were more pronounced compared to CG2. Dissomic manifestations were associated with anxious night dreams. Addictive behavior was considered by the examined as a way of relieving mental tension and protection against troubles and conflicts the personality faced. Deviant behavior was generally presented in the form of assumptions, threats, intentions and fantasies in response to negative phenomena, ways of dealing with conflict situations, and in relation to sources of frustrating circumstances.

Addictive behavior was significantly higher and associated with the relief of both anxious state and conflict situations in different spheres of life, social distress, conflict between expectations and reality. Somatic-directed complaints are also significantly more pronounced in IG and CG1. They were recorded in the form of vegetative manifestations and elements of psychosomatic disorders, which are significantly more pronounced in IG and CG1 than in CG2.

An important indicator for the characterization of the victims is the subjective evaluation of symptomatology rate or behavior relevance (Table 3). Compared to control in both groups with the presence of clinical manifestations of post-traumatic syndrome, the significance of the manifestations was estimated significantly higher.

Significant differences were found in comparison of IG and CG1 - higher value for the personality of emotional, mnestic, dissomic, addictive and autonomic disorders than in CG2. It should be noted that the emotional, anxiety, mnestic, dissomic and somatic emotions associated with psychological trauma during military actions are relevant for IG and CG1 participants. Other abnormalities found when interviewing the participants themselves and their relatives are also considered pathological or painful. They are explained as a response to the injury. They also share the causes of their occurrence. Thus, the aggravation of emotional, behavioral and deviant manifestations is associated with the need to change their lifestyles in different areas due to optical trauma and partial loss of vision. They also do not feel relevant attitude of society.

Table 3

Intensity (significance) of symptomatology (M ± m)

Types of manifestation	Groups		
	IG	CG1	CG2
Emotional	33.06±0.38 p***	35.13±0.47 p*** p_{1***}	18.56±0.44
Cognitive	18.46±0.42 p***	12.53±0.37p_{1***} p1***	21.11±0.32
Behavioral	15.38±0.37 p***	11.06±0.38 p*** p1***	18.53±0.31
Mnestic	18.02±0.37 p***	18.75±0.37 p***	11.23±0.32
Dissomic	16.35±0.38 p***	18.62±0.33 p*** p_1***	7.34±0.31
Addictive	9.63±0.37 p***	7.73±0.41 p*** p1***	2.23±0.36
Deviant	6.13±0.29 p***	5.02±0.35 p***	1.25±0.23
Somatic (vegetative)	32.64±0.39 p***	30.68±0.34 p*** p1**	8.31±0.36

Significance: p - in relation to CG2 group; p_1 - between IG and CG1;

Probability level: * <0.05, ** <0.01, *** <0.001.

Due to the revealed dissociation of symptomatology quantitative composition and its significance for the individual, assessment of the changes by the victims, we conducted additional testing. The analysis of the level of somatic complaints (Table 4) showed significantly higher rates of IG participants compared to CG1. At the same time on M scale this difference is not reliable. Compared to CG2, all participants had significantly higher levels.

Table 4

Levels of psychosomatic complaints

Scales	Groups		
	IG	CG1	CG2
E	15.37±0.43 p***	11.41±0.37 p*** p1***	6.21±0.23
G	14.73±0.36 p***	12.38±0.35 p*** p1***	5.68 ± 0.30
M	10.14±0.35 p***	11.25±0.34 p***	4.47±0.31
H	19.27±0.37 p***	14.58±0.39 p*** p1***	10.72 ±0.31

Significance: p - in relation to CG2 group; p_1 - between IG and CG1. Probability level: * <0.05, ** <0.01, *** <0.001.

Comparing these data with the level and significance of complaints, it can be said that, despite the assessment of the disorders existing, they are consequences of clinical manifestations of post-traumatic syndrome, and significantly are more important for IG and CG1 compared with CG2. Higher levels of participants in IG and CG1 confirm a more painful reaction and personality behavior at the psychosomatic level of regulation.

The study of neurotic conditions assessment levels also revealed differences in participants with the presence of clinical manifestations of post-traumatic syndrome (Table 5). On all scales, the scores between participants in IG and CG1 were significantly higher than CG2. This was regarded as the basis for the formation of neurotic symptoms based on the clinical manifestations of post-traumatic syndrome.

Table 5

Levels of neurotic states evaluation

scales	Groups		
	IG	CG1	CG2
psychic tension	-8.56±0.41p*** p1*	-6.74±0.34 p***	-3.34±0.33
Depression	-838±0.32 p***	-6.42±0.27 p*** p1**	-2.06±0.24
Asthenia	-5.71±0.30 p***	-6.03±0.27 p***	-1.46±0.24
Hysteria	-4.11±0.32 p***	-3.61±0.30 p**	2.31±0.32
Obsessive-phobic	-8.16±0.35 p***	-6.51±0.36 p*** p1**	-3.11±0.22
Vegetative disorders	-17.42 ±0.35 p***	-14.07±0.35 p*** p1***	-6.22±0.32

Significance: p - in relation to CG2 group; p_1 - between IG and CG1. Probability level: * <0.05, ** <0.01, *** <0.001.

Thus, the participants with the presence of post-traumatic syndrome clinical manifestations according to testing results had markedly higher indexes in almost all the parameters studied. They also confirm more significant changes in IG participants. It should be noted that an important feature with neurotic syndromes has been identified. Identifying them when tested does not always correspond to the fact of being present in a clinical trial. The reasons for this are, as a rule, in the absence of validity of the current factors at the time of the review. This should be taken into account when predicting and planning their rehabilitation.

Conclusions

1. In combatants with optic eye trauma and partial loss of vision against the background of clinical manifestations of post-traumatic syndrome the latter are dominant.

2. Clinical symptomatology in the combatants with optic trauma on the background of clinical manifestations of post-traumatic syndrome reflects their structure and demonstrates the direction of their formation against neurotic symptoms background.

3. The significance of clinical symptoms in the subjects under study in its significance and relevance far outweighs that which develops after domestic optic trauma.

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