

## Dynamic of Combat Related Posttraumatic Stress Disorder in Karabagh War Veterans with Brain Injury

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### Abstract

**Background:** A person, after a war, comes into contradictions with the society, based on the feeling of alienation and the need for adaptation to the peace conditions.

**Objective:** It is suggested that combat-related mental disorders (related to the extraordinary stress) are very important among medical and sociological problems. The actuality of these disorders is determined by polygenic and multifactorial essence of combat trauma (the impact of psychogenic trauma, ecological factors, physical brain injury etc.) as well as by increasing prevalence of current disorders.

**Research Methods:** Karabakh war veterans were observed during 20 years with the use of the CAPS (Clinical-administered PTSD Scale) PTSD (posttraumatic stress disorder) scale, the Mississippi scale (the military version), the BPAQ (questionnaire for diagnostics of predisposition to aggression) questionnaire, the SCL-90-R (questionnaire of intensity of psychopathological symptoms by Derogatis L. revised) questionnaire, «The patients-combatants examination card», clinical-psychopathological, somatic-neurological investigations.

**Results:** All patients met all criteria of CAPS. The average Mississippi scale measurement in the study group was  $120,6 \pm 15,8$ , in the control group ( $100,6 \pm 29,7$ ;  $p = 0,0034$ ).

A marked increase in «hostility» measure ( $2,5 \pm 0,8$ ) (compared to the previous years  $2,24 \pm 0,16$  in 19941;  $71 \pm 0,14$  since 1999), also a clear dominance of aggression ( $36,6 \pm 7,4$ ) and total BPAQ measure ( $92,4 \pm 15,8$ ) were observed.

The high level of somatization ( $2,2 \pm 0,5$ ) is explained by the absence of strong emotional experiences, the presence of unconscious «suppressed» anxiety, and long-term intractable existential, social and labor issues.

**Conclusions:** Psychiatric trauma and the clinical manifestations of PTSD undergo significant essential and formal changes during the long-term dynamics of the disease, leading to negative PTSD dynamics. First, a veteran's combat trauma, in certain socio-political and economic conditions, grows into moral injury. Second, PTSD transforms from socio-psychological phenomenon into clinical one.

**Keywords:** Extraordinary Stress; Exogenous-Organic Disorders; Socio-Psychological Phenomenon; Clinical Phenomenon; Hostility; Somatization; Psychopathological Symptoms

### Highlights of the article

- In this study significant essential and formal changes during the long-term dynamics of the disease are found.
- Transformation of combat trauma into moral injury is found.

- Association of PTSD with somatic or mental health pathology (mostly with organic brain disorder) is determined.

### Introduction

Today combat-related mental disorders related to the extraordinary stress are the most commonly reported mental health diagnosis among medical and sociological problems. The actuality of these disorders is determined by polygenic and multifactorial essence of combat trauma (the impact of psychogenic trauma, ecological factors, physical brain injury etc) as well as by increasing prevalence of current disorder. It is suggested that the prevalence of PTSD among veterans served in several combats is up to 30%, among prisoners of war [27] and survivors of torture is about 90% [19].

According to the clinical practice data clinical manifestations of PTSD patients personality have been essentially and formally changed during the long term dynamic of current disorder: PTSD is transformed from social-psychological phenomenon into clinical phenomenon; transformation of the content of combat trauma is observed in peacetime (combat trauma is changed into moral trauma); PTSD is associated with somatic or mental health pathology (mostly with organic brain disorder). It should be noted that first studies of this disorder was based on the concept of organic and psychogenic origin of PTSD, later this concept has been developed in other way. J.E. Erichsen, H. Oppenheim, Da Costa and others had mentioned that «military» or «traumatic neurosis» have not only organic origin, but also psychogenic one [22]. Our view considerably coincides with authors noted above. According to ICD-10 [43] and DSM-3 and their following editions [7, 8] PTSD is a psychogenic disorder, determined by extremely, extraordinary stress which is likely to cause distress in almost anyone. It should be noted that number of researchers - in the origin and development of PTSD - emphasized other factors e.g., personality traits, sex, age, education, vulnerability of organ-systems, stress tolerance, mental disorders etc. In other words, it is constellation of such pathogenic factors as psychogenic, exogenous, organic, and personality-endogenous [54].

Besides in ICD-10 (International classification of diseases 10<sup>th</sup>) authors chose two principles of distinguishing organic disorders: clinical and etiological [15]. They used dichotomical approach: dementia and non-dementia (or other disorders). Dementia as an essence of organic psychosyndrome is identified as the only pathology which is pathognomonic for exogenous-organic brain disorders. Since other disorders (non dementia) can occur without severe cerebral pathology or dysfunction, they «have less reason to be added on to the organic mental disorders section». As we know, modern methods of brain investigations are revealed organic abnormalities in almost every mental disease that is why the situation with «organic disorders» remains paradoxical [23]. On the one hand, there is expansion of organic factor in etiopathological mechanisms of mental disorders [31,35]. On the other hand, in fact, there is a denial of organic factor as an independent factor for such disorders [32].

In essence, there is a such correlation in PTSD: disorder, which is considered as psychogenic, could be defined as organic one. Moreover, as mentioned above, in many studies were revealed dysfunctions of neurotransmitters, hormones and apparent structural and morphological changes in neuronal tissue.

Our clinical studies, revealing symptoms of organic disorder in patients with PTSD (using ICD-10 as well as DSM (diagnostic and statistical manual of mental disorders), allow us to suggest a hypothesis on transformation of psychogenic functional stress disorder into organic one. Researchers report about essential changes of PTSD clinical picture regardless of severity of brain injury [4,13,24,36].

The presence of brain injury, especially severity of injury, could have prognostic importance in prediction of complications [1]. This is very important aspect of study, because mild brain injury could be considered in the context of traumatic event and psychological stresses have an influence on the course of brain injury. Consequently, we could assert that worsening of condition in these patients arises from neurological disturbances, as well as from mental causes [14].

### The objective of the study

We attempted to make study in order to find out the specificity of PTSD phenomenon and to what extent these phenomenon can be determined by organic brain changes. Proceeding from our goals, the current study was realized as a case-control study. The advantages of such method are the possibility of study management on small sample of patients, very little period of implementation (in compared with cohort studies) and group gathering by researcher. The analysis of data, which were obtained by using CAPS and Mississippi scale for posttraumatic reactions (military version), allowed us to form two groups of patients: 1) main- group patients with PTSD, 2) control-group patients with brain injury with reduced symptoms of PTSD (distinctions between CAPS scale were statistically significant (from  $p = 0,001$  to  $p = 0,045$ ). 45 male veterans, who had mild brain injury with/ without transient loss of consciousness and were clinically verified as PTSD, were included in group with PTSD. Control-group was selected from the same study population. It consisted of 42 veterans, who had moderate brain injury with reveal PTSD symptoms but clinically verified as organic (traumatic) brain injury. Injuries were sustained during the war and were accompanied with transient loss of consciousness (few minutes). Results of both groups were compared with control group which was consisted of healthy males (37 respondents). This «healthy» group is comparable both with main group and control group with social-demographic parameters. Medical aid was given either in military hospitals or in field conditions. In order to ensure comparability of the groups we specified inclusion and exclusion criteria. Clinical picture of disorder was studied through medical history, discharge summary, and findings of former clinical and paraclinical investigations etc; interview and discussions with attending doctors.

### The limitation of the current study

We investigated 200 Karabakh (Artsakh) war veterans received inpatient treatment. Hence, all investigating cases (200 respondents) (main group and control group) were chosen from patients who were treated in Center of Mental Health «Stress» (Yerevan, Republic of Armenia) and met all the criteria mentioned above.

Data from 87 veterans were chosen (with an age range from 33 to 60). PTSD-patients had mean age of  $45,8 \pm 6,4$  years (with an age range from 35 to 60), with organic brain injury  $47,3 \pm 7,1$  (with an age range from 33 to 60), mean age of compare group patients was  $42,2 \pm 7,3$  (age range from 32 to 60). Disorder duration was from 18 to 15 years which is explained by the duration of war (1992-1994) and implementation of current study (2009 - 2011). Inclusion criteria were the presence of extremely psychological traumatic situations, diagnosis of PTSD, course of disease less than 15 years, mild or moderate combat brain injury, male gender, age under 60 years old. All patients were Karabakh War veterans. Diagnostics of cases were based on ICD-10 criteria [43]. Patients with «post-traumatic stress disorder» diagnosis (F43.1 in ICD-10), «enduring personality changes» (F62.0) were included. Diagnosis of PTSD is not excluded the presence of «Other mental disorders due to brain damage and dysfunction and to physical disease» (F06.0); «personality and behavioral disorders due to brain disease, damage and dysfunction» (F07.0). Exclusion criteria were - the presence of severe combat brain injury, addiction to psychoactive substances (alcohol, narcotics, and drugs), the presence of paroxysmal and psychotic disorder, female, and age > 60. For ensuring homogeneity of clinical material in the study were involved only male veterans, because the quantity of female veterans were too little. In addition, posttraumatic manifestations in female veterans have gender (socio-biological) [5,26] features that is why we excluded them from the study. We excluded also elderly patients in order to except possible pathogenetic influence of age. This issue is approved by many studies [46], according to these studies increasing age causes exogenous influences in the organism.

### Methods

In this study clinical-psychopathological, experimental-psychological, somato-neurological, paraclinical and statistical methods were used. Investigations were carried out using standard methods of PTSD. Selection of methods was based on their validity, reliability and recommendations of ICD-10. These methods are Mississippi scale for posttraumatic reactions (military version); questionnaire for

intensity assessment of psychopathological symptoms SCL-90-R (Derogatis scale); clinical diagnostic scale (CAPS - Clinical-administered PTSD Scale) [53].

- Scale for clinical diagnostics of PTSD (CAPS – clinical-administered PTSD scale), this was developed based on DSM-IV criteria and allows to assess PTSD symptoms, duration of disorder and also extent of social disturbance. In the context of current study CAPS was used for revealing the severity of PTSD symptoms. The use of questions allowed to investigate frequency of symptom for the former month and then assessed the intensity and frequency of symptom manifestation.
- Mississippi scale for assessment of posttraumatic reactions (military and civil versions) was developed for evaluation of posttraumatic reactions intensity in veterans [16, 17]. In our study this scale was used for verification of PTSD diagnosis. According to carried studies Mississippi scale possesses all necessary psychometric features and the high score is good correlated with the diagnosis «posttraumatic stress disorder».
- Diagnostics of the severity extent of physical aggression, hostility and anger in patients was assessed by means of adopted Russian version of questionnaire for diagnostics of predisposition to aggression BPAQ (Buss A., Perry M.) [34]. Separated three-factor structure corresponds to theoretical concepts of aggression components by Buss and Perry: 1) behavioral component of aggression; 2) affective (emotional) component (anger); 3) cognitive component (hostility) [3].
- For evaluation of psychological patterns of patients we used questionnaire of intensity of psychopathological symptoms by Derogatis L. SCL-90-R [6], which allows to conduct quantitative assessment and interpretation of symptomatic disorders in 8 main scales: 1) somatization; 2) obsessive-compulsivity; 3) interpersonal sensitivity; 4) depression; 5) anxiety; 6) hostility; 7) phobic anxiety; 8) paranoid symptoms.
- «List of patient investigation-participant of war», this is developed in «Stress» Mental Health Center in order to gather information about patient which was included information of premorbid illnesses, anamnesis vitae et morbi, personality features and features of illness onset. The goal was not only the editing and the analyzing of mental status and illness, but also gathering of statistical material.
- Hamilton psychiatric rating scale for depression (HDRS, 1959, for assessment of the severity of depressive symptoms) [12].
- Questionnaire for evaluation of anxiety by Spielberg [51,53].
- Shmishek questionnaire (adult version) is intended for revealing of accentuated personality types. The theoretical basis of this questionnaire is the concept of «accentuated personalities» by K. Leonhard [40].
- The nature of psychopathological manifestations of PTSD, its structure and peculiarities were studied through various clinical-psychopathological methods. Integrated somatoneurological investigations have been also done. If necessary, the EEG investigation was also carried out in order to reveal the type of paroxysmal disturbances.

## Results

The presence and the extent of PTSD manifestation were identified by Mississippi scale. In the group of PTSD-patients was revealed a disorder in all patients: total score was equal to  $128.0 \pm 11.44$  and determined in the range of 116.56 - 139.44 (grade  $\geq 112$  confirms the presence of PTSD). In the group of patients with organic brain injury this rate was lower ( $94.3 \pm 13.90$  scores) and determined in the range of 80.4 - 08.2. In compare group the extent of stress disorder manifestations was equal to  $59.6 \pm 20.9$  which indicates the absence of pathology.

CAPS allowed us to elicit psychopathological features of every PTSD symptom both in frequency and in intensity. According to criterion «A» of CAPS scale all patients experienced combat traumatic stress and in this aspect there was no distinction among the groups. In patients of the main group (PTSD group) was revealed moderate marked obsessive reproductions of traumatic events, thoughts, feelings and images. The traumatic experiences appeared many times in a week. In the group of organic brain injury the symptom of «obsessive reproduction of traumatic events» appeared not so often (1 - 2 times in a week). The significance of this symptom is presented in table 1. This clinical symptom appeared in a varying degree in patients and distressed them, but they could control it. It was observed marked and intensive dreams about traumatic event in PTSD-patients. Themes of these dreams were persecution, capture, torture; a lot of patients have seen their dead and maimed friends, trying to help them. These dreams were accompanied by cries or laughter, marked vegetative symptoms (tachycardia, profuse sweating). Some patients couldn't recall their dreams, but felt themselves drained and hurt.

In the group of organic brain injury this symptom was moderate and frequency of occurrence was 1-2 times in a week. The meaning of current symptom is presented in the table 1 (p = 0.0002).

The important phenomenon of the acute period of disorder was «flashback» (suddenly arising actions or senses of combat experience, illusions, hallucinations, dissociative episodes).

In PTSD group these symptoms occurred rarely and less intensive (1-2 times in a week). In patients with organic brain injury they occurred significantly rarely (1-2 times for the past year). These symptoms appeared clinically at the presence of real danger.

In situations reminding of traumatic events, symbolizing traumatic events PTSD-patients appeared moderate conditions (more than 2 times in a week) with emotional tension and anxiety. In the group with organic brain injury this symptom was found in moderate extent of intensity and 1 - 2 times in a week (see table 1). In these situations occurred symptoms characterizing physiological responsiveness of patients, which were marked in group with PTSD than in control group (see table 1). These symptoms were manifested in the form of tachycardia, tachypnoea, feeling of real physical stress, body trembling.

<b>Criterion B: The traumatic event is persistently reexperienced in feeling</b>						
Parameter	PTSD group		Organic brain injury group		p	
	M	m	M	M		
Distress when exposed to trauma reminders.	5.6	1.5	4.6	1.9	0.004	
Recurrent distressing dreams of event	5.7	1.8	4.0	2.3	0.000	
Fleshback	3.1	2.5	2.3	2.5	0.144	
Recurrent and intrusive trauma recollections	4.8	2.0	3.7	2.2	0.015	
Physiologic reactivity	4.9	1.7	3.6	2.0	0.002	
<b>Criterion C: Persistent avoidance of stimuli associated with the trauma, «numbing»</b>						
Efforts to avoid thoughts or feelings	4.9	2.2	3.5	2.5	0.006	
Efforts to avoid activities or situations	2.8	3.0	1.7	2.7	0.105	
Inability to recall trauma or trauma aspects	5.1	1.8	4.2	1.9	0.010	
Markedly diminished interest in significant activities	5.0	2.3	3.3	2.2	0.001	
Feelings of detachment or estrangement	5.5	1.6	3.2	2.8	0.000	
Restricted range of affect	4.8	2.3	3.3	2.5	0.003	
Sense of a foreshortened future	5.4	2.2	2.5	2.7	0.000	
<b>Criterion D: Persistent symptoms of increased arousal</b>						
Difficulty falling or staying asleep	7.1	0,9	6,0	2,0	0,002	
Irritability or outbursts of anger	6.7	1.3	5.7	1.8	0.002	
Difficulty concentrating	5.4	1.4	4.0	2.2	0.002	
Hypervigilance	3.7	2.5	2.3	2.7	0.019	
Exaggerated startle response	4.1	1.8	2.7	2.4	0.007	

Table 1: Clinician Administered PTSD scale results.

The symptoms of «avoidance» in structure of posttraumatic disorders appeared with various phenomena which according to CAPS are grouped into following symptoms of cluster «C»: 1) «efforts in order to avoid thoughts, feelings and conversations concerning trauma»; 2) «efforts in order to avoid actions, people and places provoking recollections about trauma»; 3) «inability to recall important aspects of trauma»; 4) «significant decrease of interest or participation in many occupational activities»; 5) «sense of detachment or alienation from others»; 6) «lowering of affective intensity»; 7) «feeling of absence of prospects».

Patients noted that they made much efforts in order to suppress rushed memories and to focus attention on something else. They did everything to avoid painful thoughts and feelings which were related to traumatic event. Patients tried to not participate in the official events, simultaneously avoiding dealing with situations which reminded of traumatic event. They attempted not to talk about war, patient's preferred to forget traumatic memories, because such memories were accompanied by irritability, anxiety and insomnia. Mentioning unusual difficulties at recollecting some circumstances, many patients could recall displaced aspects of events. They lost interest in pleasurable activities (reading, sport, watching films etc).

Veterans felt sense of detachment and alienation from close relatives and friends mentioning the preference of solitude and reticence. Patients with PTSD felt traumatic experiences during one third of the day and in patients with organic brain injury the duration was one tenth of the day. There were thoughts about impending death and the absence of prospects. In the group with organic brain injury these thoughts occurred less (10% of the day duration). Value of criterion «C» is presented in table 1.

Symptoms of irritability (cluster D), which was not observed before traumatic event, were presented with such phenomena as «difficulties in falling asleep», «irritability or outburst of anger», «difficulties in attention concentration», «excessive vigilance», «exaggerated frighten reaction».

Dyssomnia disorders occurred almost every night. It was observed significantly prolongation of sleep time, frequent awakening. In PTSD-patients duration of sleep loss was 1.5-3 hours. In patients with organic brain injury sleep disturbances were not so intensive and were observed rare (several times in a week), loss of sleep was 30-90 minutes. An insignificant or even indifferent act of people was aroused in patients with PTSD irritability, aggressive behaviors which were accompanied by anxiety, anger, fury and act of force (many times in a week). In the group of organic brain injury such phenomena were found very rare (1 - 2 times in a week) and were less intensive.

Difficulties in attention concentration occurred in a form of inability to concentrate on the meaning of the subject, because of blurred thoughts and switching of attention. In patients with PTSD such difficulties were prolonged (50 - 60% of the day). In the group of organic brain injury this symptom appeared less intensively and rarely (20 - 30%). Patients mentioned tension, excessive vigilance in crowded places, increasing of anxiety concerning themselves and their families. These symptoms were not typical for patients before the war. Moreover, these symptoms were found more often in patients with PTSD (20 - 30% of the day) and were intensive, than in patients with organic brain injury. In this group such phenomena were less intensive and very rare (< 10%).

Specific phenomena of the patients is the reactions against sudden external stimuli which in special medical literature is defined as «exaggerated frighten reaction». These reaction clinically manifested with fear, shudder at unexpected sounds (slamming the door, fireworks explosion etc). Patients also experienced feeling of anxiety and fear, they mentioned body trembling and tension, numbness, tingling, hot flushes which transfer into rhigosis, dyspnea, tachycardia, sweating. In PTSD-patients these reactions were more intensive and frequent (1 - 2 times in a week), than in patients with organic brain injury (1 - 2 times for the past month).

Characteristic feature of posttraumatic stress is guilt. Guilt occurs because of being alive after the war and also after the making faults. Patients with PTSD felt guilt for their behavior during traumatic event. There were observed some hard experiences but they could control these painful experiences (20 - 30% of the day). In patients with organic brain injury this symptom occurred less intensively (< 10% of the day). These patients noted that they felt guilt, because their friends died but they stayed alive. These experiences were



obsessive but self-condemnation was successfully corrected. In patients with organic brain injury this symptom occurred rarely (< 10% during the month) and less intensively.

Gathered results show that main clusters (persistent repetition of traumatic event, symptoms of increased irritability and blocked ability to response) compose clinical content of PTSD and defining the presence of diagnosis. These clusters were present with PTSD-patients at high grade of intensity (24,1 ± 9,5; 33,5 ± 15,4; 27,0 ± 7,9). Current clusters were identified also in patients with organic brain injury, but with clinically reduced symptoms (18,2 ± 10,9; 21,7 ± 17,3; 20,0 ± 11,1). The analysis of Mississippi scale showed that these clusters were present in patients with organic brain injury but they hadn't diagnostic value and played minor role.

PTSD-patients had mild brain injury with (82.18%) or without temporary loss of consciousness (17.78%). In second group 42 patients had moderate brain injury. Retrospective analysis of findings allows us to agree with Piven B.N. [46] who asserts that development of organic psycho syndrome is caused by concussion and contusion. Clinical manifestations of organic psycho syndrome were revealed in 87 patients. It should be noted, that in PTSD-patients during «posttraumatic» period were not found symptoms of organic brain injury. Clinical picture of these symptoms meets the criteria of acute stress disorder and PTSD. In case of patients with organic brain injury these symptoms were observed in acute phase of brain injury. Veterans, after 15-18 years, have symptoms of organic brain injury in the form of organic psycho syndrome. Psychopathological symptoms of such patients are presented in the table 2.

Psychopathological symptoms	PTSD group		Organic brain injury group		p
	abs.	%	abs.	%	
Asthenic	8	17.78	5	11.90	0.552
Depressive	20	44.44	6	14.29	0.025
Obsessive	1	2.22	0	0.00	1.00
Psychopathy -like state	16	35.56	31	73.81	0.0005
Total score	45	100	42	100.0	-

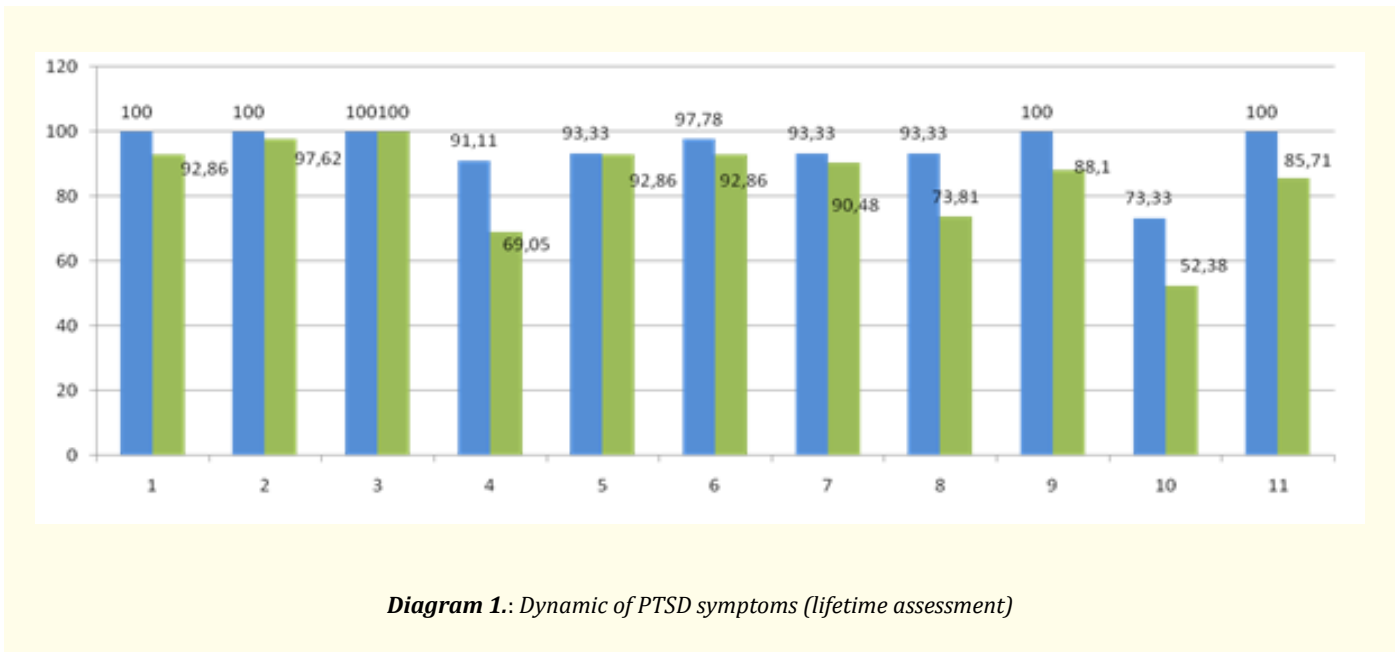
**Table 2:** Frequency of psychopathological symptoms among patients with PTSD and among patients with organic brain injury.

As shown in the table 2, depressive (20 observations, 44.44%) disorders were statistically revealed (p=0,025) in PTSD-patients. Personality disorders were twice as much (31 observations, 73.80%) revealed in patients with organic brain injury (p=0.0005). In all patients were observed not marked and not severe somatic and neurological symptoms. Complaints of somatic origin were headaches. These headaches were «splitting», «pressing», «strong», «throbbing» and there was also vertigo. A lot of patients complained of lumbar pains, back pains, breathlessness, tachycardia, tympanites, decreased appetite etc. During neurological examination 26 PTSD-patients (57.78%) had «posttraumatic cerebral asthenia». Meanwhile, 17 patients (40.48%) with organic brain injury had cerebraesthesia. Syndromes of organic brain injury such as diffuse, focal, cortical and subcortical were chiefly of traumatic, vascular and mixed origin. 12 PTSD-patients (26.67%) had such syndromes, in 24 patients (57.14%) with organic brain injury were observed above noted syndromes. Thus, organic changes in the group with organic brain injury were found more often than in PTSD-patients (0.049).

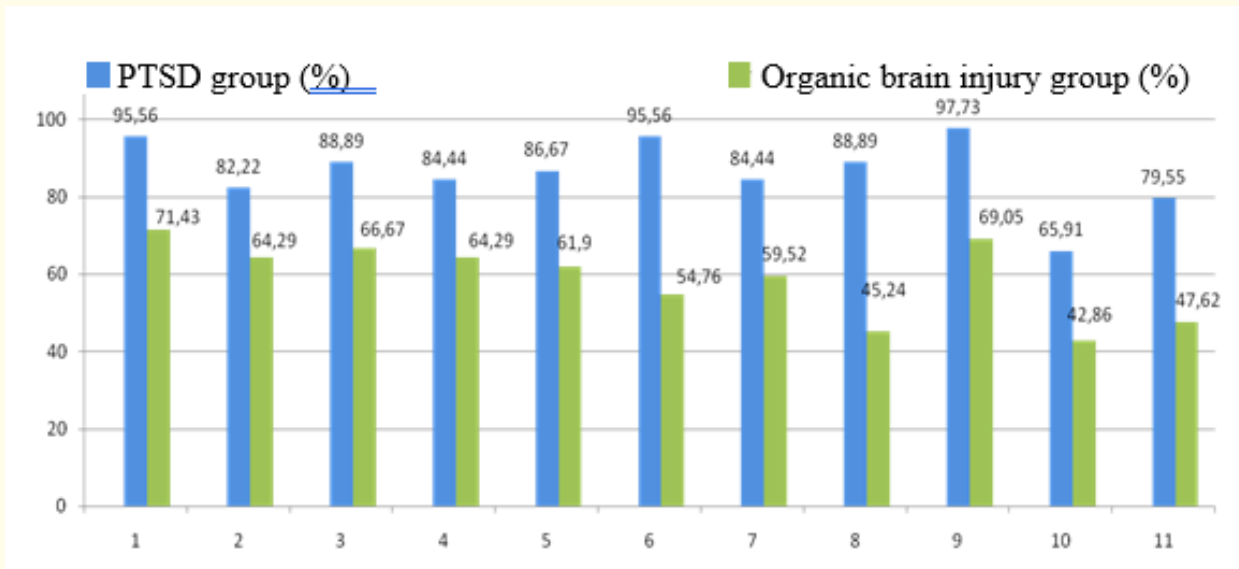
Analysis of patients' status immediately after injury and during current study (by CAPS scale) showed that high level of all PTSD symptoms were observed significantly in the group of PTSD-patients, though the reduction of symptoms. The symptoms of patients with organic brain injury were strongly marked immediately after injury.

- Recurrent and distressing dreams of event
- Recurrent and intrusive distressing recollection of event
- Physiological reactivity on exposure to internal or external cues that symbolizes or resemble an aspect of traumatic event
- Effort to avoid thoughts, feelings, or conservation associated with the trauma
- Markedly diminished interest in significant activities
- Feeling of detachment or estrangement from others
- Restricted range of affect
- Sense of foreshortened future
- Difficulty concentrating
- Hypervigilance
- Exaggerated startle response.

Our study is confirmed by data which are presented in diagrams 1 and 2.







**Diagram 2.:** Dynamic of PTSD symptoms (current assessment)

- Recurrent and distressing dreams of event
- Recurrent and intrusive distressing recollection of event
- Physiological reactivity on exposure to internal or external cues that symbolizes or resemble an aspect of traumatic event
- Effort to avoid thoughts, feelings, or conservation associated with the trauma
- Markedly diminished interest in significant activities
- Feeling of detachment or estrangement from others
- Restricted range of affect
- Sense of foreshortened future
- Difficulty concentrating
- Hypervigilance
- Exaggerated startle response.

As shown in diagram, it's observed reduced PTSD symptoms according to CAPS scale.

Thus mental disorders in PTSD-patients in 1994 - 1996 (i.e. immediately after the end of the war) were functional in their origin. These patients suffered from neurotic disorders: irritability, exhaustion, hypersensitivity to stimuli, sleep disturbances (nightmares

and sleeplessness), difficulties in adaptation, conflicts etc. After the end of the war (5 years), PTSD-patients showed clinical picture of somatoform disorders (SCL-90-R). The level of which was higher than in patients with somatoform disorder. Somatoform disorders occurred in cases where emotional reactions were excessive and severe; there were «suppressed» anxiety and existential problems. In fact, it was observed dynamic process of adaptation to peaceful life.

The necessity to adapt in conditions without war, to suppress anxiety and aggression is caused various problems - alcohol /drug abuse, anti-dissocial behavior, somatization of mental disorders etc. Aggression, irritability, depression tend to progress under the influence of different factors. Preclinical personality features in PTSD veterans had significant implication in dynamic of disorder. Obsessive-compulsive, sensitive, emotional unstable, hysterical and asthenic features were observed in examined patients. These features under the influence of mental, somatic and other causes can produce vegetative-somatic decompensation and vegetative-vascular distonia. Examination of such patients after 15 - 18 years reveals domination of organic disorders. Our analysis immediately after combat trauma (Diagram 2) showed that there are PTSD veterans who had reduced symptoms of PTSD. Moreover, decrease of symptoms was observed in both groups but more intensive in the group with organic brain injury. This fact, from our point of view, can be explained by the presence of physical trauma, which in PTSD-patients was indicated as mild injury with/without transient loss of consciousness. In patients with organic brain injury the extent of trauma was moderate and with long-termed loss of consciousness. We assume that differences mentioned above are determined by the severity of brain injury.

### Discussion

Revealing of distinction in intensity and frequency of clinical manifestations of posttraumatic stress disorders are determined, from our point of view, by the presence (or absence) of physical (brain) trauma. The distinctive feature of modern conflicts [48] is the high prevalence of blast injury, which causes brain injury and development of general commotion-contusion syndrome. In biomechanics of brain trauma act the complex of primary factors such as shock wave [39], impact effect of craniocerebral deformation, resonance cavitations', hydrodynamic push, movement and rotation of the cerebral hemispheres about brain stem etc. Concussion is the mildest form of disturbance which has no macro morphological manifestations [37]. Brain injuries have macro morphological substrate at varying severity. Polymorphism of psychiatric disorders in long-term period of brain injuries are verified by the severity of trauma, localization of brain injury as well as by accompanying factors – infections, starvation, environmental impact etc. The strength of our study is that by the help of clinical methods we obtained the results which are confirmed by biological investigations - the role of inflammation in the modified PTSD. It would be desirable to have more respondents to make the research more reliable and valid.

### Conclusions

Psychiatric trauma and the clinical manifestations of PTSD undergo significant essential and formal changes during the long-term dynamics of the disease, leading to negative PTSD dynamics. First, a veteran's combat trauma, in certain socio-political and economic conditions, grows into moral injury. Second, PTSD transforms from socio-psychological phenomenon into clinical one.

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