Korshnyak O. Correction of non-psychotic psychic disorders in patients with mild cranial traumas' after effects. Journal of Education, Health and Sport. 2016;6(6):637-644. eISSN 2391-8306. DOI http://dx.doi.org/10.5281/zenodo.56832
http://ojs.ukw.edu.pl/index.php/johs/article/view/3651

The journal has had 7 points in Ministry of Science and Higher Education parametric evaluation. Part B item 755 (23.12.2015).
755 Journal of Education, Health and Sport eISSN 2391-8306 7

The authors declare that there is no conflict of interests regarding the publication of this paper.
Received: 25.05.2016. Revised 25.06.2016. Accepted: 28.06.2016.

UDC 616.89 -02:616.831-001.31-036

CORRECTION OF NON-PSYCHOTIC PSYCHIC DISORDERS IN PATIENTS WITH MILD CRANIAL TRAUMAS' AFTER EFFECTS

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Abstract

The article deals with main non-psychotic psychic disorders of patients in post period of mild cranial trauma. It was found that treatment resulted in positive dynamic by such symptoms as general weakness, increased tiredness, irritability, headache, anxiety. In most cases the conducted treatment improves patients' self-feeling and facilitates their active functioning.

Key words: non-psychotic psychic disorders, mild cranial trauma's after effects, cognitive impairments.

Introduction

For many years traumas of brain and their after effects have been remaining relevant that is conditioned not only by wide prevalence and variety of clinical pathomorphosis, but also by expressiveness of post comatose syndrome in remote period. The data of recent decades point that in average in two from three patients (approximately in 50-80% of cases), who had closed cranial trauma (CCT) remote after effects in different clinical variants were registered after various periods of time. They flow with frequent states of de-compensation, temporary disability, often with following invalidism [1].

So, CCT is not only medical but also social problem as far as it requires significant economic expenditures both on treatment and on medical-social rehabilitation [2].

By the WHO data, frequency of CCT rises, in average, by 2% every year and is from 50 to 70% in general structure of traumas. As literature data show patients' condition after CCT can not be called a dormant state, because mild CCT brings to steady dysfunction of non specific brain systems and durable post-traumatic disorders. After trauma not only structural changes remain but also certain functional disorders, which are progressing and manifested as different pathologic syndromes. After mild CCT complete recovery takes place only in 20% of patients, while in 80% remote after effects are observed, which substantially reduce life quality and professional adaptation [1, 2].

Injury starts the cascade of disorders in brain functioning, both at the account of primary (bio-mechanical) factor and as a result of secondary damage (activation of pathological-physiological mechanisms). Secondary damage covers a lot of complex bio-chemical and cell processes, which increase heaviness of primary injury. Functional inferiority of supra-segmental vegetative and nonspecific brain structures are stored for long years and can manifest under influence of different exogenous and endogenous factors [1]. Alongside with it, one should not forget about correlation of somatic and psychic factors in occurrence and manifestations of border diseases that is very important for their further treatment and prophylaxis [2]. As clinical observations show just in combination with psychological reaction in 30 - 40% of patients, symptomatic complex of neurological psycho-vegetative disorders form [3]. Besides, it is necessary to consider influence of main factors, which form psychic state of a person: genetic bents, functional physical condition, personalities' features, complex of social factors and etc. All these factors can be conventionally divided into two groups: constitutional-biological and social-personalities'. Every of them is strictly individual and functional dynamic; with occurrence of somatic generous and other traumatic situations passes through over the so called adaptation barrier. With it, heaviness of clinical flow does not correlate with determined changes in patient's psychic sphere. Sometimes, the picture of psychic disorders in remote period of mild CCT is brighter, more intense and variable than in trauma's acute period. In such cases paradoxical dissociations between neurological status in acute and remote periods of mild CCT are observed. It means that psychogenic mechanisms, which are started in acute period of trauma, do not play leading role and start playing it only in the future. They manifest themselves in variable forms of asthenia, psychopathic syndromes, affective, hallucinating and paranoid psychosis. Probability of non-psychotic psychic disorders (NPD) occurrence depends on the character of main disease. Degree of its heaviness, stage of disease progressing, level of therapeutic measures' effectiveness as well as on such characteristics as age, heredity,

constitution, pre-morbid structure of personality and sometimes on sex, organism's responsiveness, presence of previous somatic and neurological diseases [5,6,7,8].

Thus, etiopathogenesis of psychic disorders in remote period of CCT is determined by interactions of three groups of factors: somatic generous, psychogenic, individual features of patient. Besides, in the process of somatic generous disorders' occurrence additional psychic traumatizing factors, not connected with disease can participate. Accordingly, influence of somatic disease on patient's psychic state can result in progressing of mainly somatic generous or psychogenic psychic disorders.

Increase of this group of patients is conditioned by increase of NPD, which, in their turn, become more resistant to medical therapy and differ by clinical pathomorphosis [3].

As per classification, offered by M.Ye. Bacherikov (1989), NPD of traumatic genesis can include: post contusion syndrome (asthenia, asthenia-neurotic, asthenia-hypochondria, and asthenia - depressive, traumatic cerebral asthenia); traumatic encephalopathy with non psychotic disorders (syndrome of affective imbalance and psychopathic syndrome); organic psycho-syndrome without psychotic disorders.

The purpose of this research was study of main non psychotic psychic disorders of patients in remote period of mild cranial trauma and, considering it, working out of corrections of therapeutic and prophylaxis measures, oriented on perfection of effectiveness of assistance for this patients' group.

Material of the research

We examined 90 patients (28 men and 62 women) with NPD with remote after effects of mild CCT, who were on inpatient treatment in neurosis department of Central clinical hospital № 5 "Ukrzakliznytsia" (Kharkiv). Age of patients was 25-57 years. The remoteness of traumas was from 2.5 to 6 years. For determination of heaviness degree of traumas we used International classification of CCT [4], according to which the patients were divided into two main groups (brain concussion (BC) and brain injury (BI) of first degree) – 1^{st} group; 2^{nd} group patients with BI. As on the moment of examination average age in 1^{st} group was 41.30±1.52 years and in 2^{nd} – 38.30±1.08 years. From distribution of patients by age we can see (table 1) that groups were uniform by this indicator. Control group was composed of 30 practically healthy people (15 men and 15 women) who had no CCT.

Table 1

Distribution of patients with remote after-effects of mild cranial trauma by age

Patients' age	Quantity of examinations (n = 90)	
	absolute	% ± m
25-30	10	7.95 ± 2.20
31-35	9	15.89 ± 2.98
36-40	23	23.84 ± 3.47
41-45	24	17.88 ± 3.12
46-50	11	17.22 ± 3.07
51-55	7	13.25 ± 2.76
56 and older	6	3.97 ± 1.59

The methods of the research

Patients' examinations were fulfilled by method of random selection, when all units of total quantity had chance to get to sample. The research was conducted in several stages, sequence of which is depicted in fig. 1.

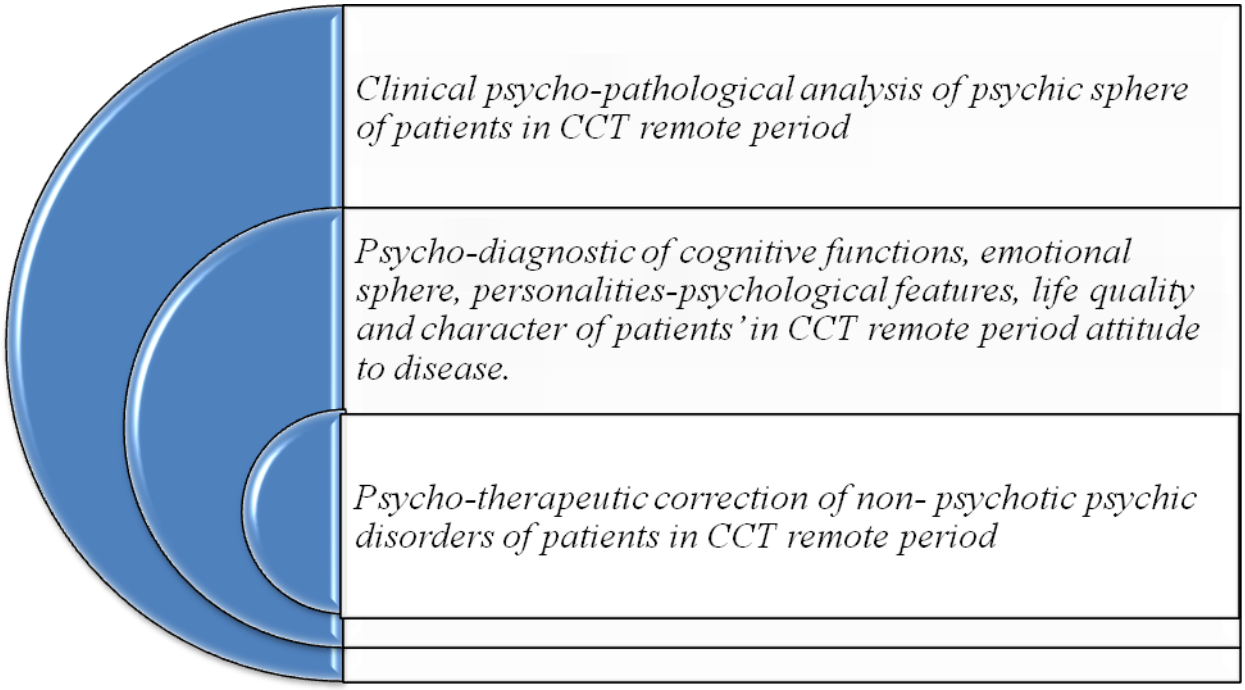

Fig. 1. Stages of examinations of patients with non-psychotic psychic disorders in CCT remote period

In our testing we used general clinic methods of objective and subjective data assessment; the data, which characterize patients' condition; clinical pathological – for assessment of psychic sphere state (by the data of structuralized clinical interview); psycho-

diagnostic – for assessment of tiredness and workability by table of E. Kraepelin; assessment of memory was realized with methodic of 10 words' memorizing (by A.P. Luria); we also used depression scale of A.T. Beck, scale of reactive and personal anxiety of Ch.D.Spielberger in modification of Y.L.Khanin, scale of asthenia types of L.D. Malkova, SAM (self-feeling, activity, mood) – for differential assessment of functional state (by B.V. Mikhaylov et al. 2012), neuro-physiological methods (electric encephalography of brain); laboratory and bio-chemical methods; statistical methods.

Statistical processing of research results was fulfilled with the help of programs MS Excel 2000, Microsoft, with application of standard applied programs Statistica 6.0.

As the exclusion criteria we registered related psychic deviations: repeated cranial traumas; endured earlier neuro infections of CNS; acute and chronic related somatic diseases and somatic diseases in de-compensation stage.

Results and their discussion

Before treatment, in psychic status of patients we registered as leading symptoms the following: general weakness, emotional lability and headache; sleep disorders; increased tiredness and reduction of psycho-motor activity; weakened attention and worsening of memory; worsening of information perception and intellectual-mental weakening; inversion of cycle "sleep-awakened state" and so on. We analyzed dynamic of clinical picture by 10 leading symptoms (see table 2).

Table 2

Frequency of main psycho-pathological symptoms of non-psychotic register in patients with brain concussion and brain injure (% ± m%)

Psycho-pathological symptoms	Period of examination	Main group		Control group	
		BC (n=30)	BI (n=30)	BC (n=15)	BI (n=15)
General weakness	Before treatment	82.1±7.2	61.1±11.8	81.1±7.0	60.1±11.5
	After treatment	14.3±6.7*	5.6±5.6	79.2±6.5#	57.2±9.3#
Tiredness	Before treatment	71.4±8.7	50.0±12.1	72.2±8.4	49.5±11.0
	After treatment	17.9±7.4*	5.6±5.6	68.4±6.4#	47.3±9.2#
Irritability	Before treatment	60.7±9.4	66.7±9.1	58.8±9.2	66.1±8.1
	After treatment	10.7±5.9*	11.1±7.6	52.1±8.4#	64.1±7.6#
Headache	Before treatment	50.0±9.6	55.6±12.0	48.8±9.7	54.6±11.0
	After treatment	17.9±7.4*	11.1±7.6*	45.7±7.8#	50.1±7.6#
Difficult sleeping	Before treatment	53.6±9.6	50.0±12.1	53.4±9.6	50.0±12.1
	After treatment	7.4±5.0*	11.1±7.6*	49.3±5.0#	45.1±7.6#
Anxiety	Before treatment	42.9±9.5	38.9±11.8	42.7±9.3	38.7±7.2
	After treatment	10.7±5.9*	5.6±5.6*	40.2±8.3#	34.6±9.2#

Absence of cheerfulness after sleep	Before treatment	39.3±9.4	50.0±12.1	38.1±9.2	48.1±11.0
	After treatment	7.4±5.0*	5.6±5.6*	37.1±8.6#	45.2±11.2#
Reduced mood	Before treatment	42.9±9.5	27.8±10.9	42.5±9.3	27.6±8.3
	After treatment	7.4±5.0*	5.6±5.6**	38.4±8.7#	23.4±8.0#
Uncertainty	Before treatment	16.6±9.0	61.1±11.8	17.6±7.3	59.2±7.2
	After treatment	3,.6±3.6#	16.6±9.0*	17.0±8.3#	55.4±7.0#
Obsessions	Before treatment	21.4±7.9	38.9±11.8	20.4±7.7	38.8±10.7
	After treatment	3.6±3.6*	11.1±7.6*	16.3±5.4#	35.3±10.1#

Notes: * - $p<0.05$; ** - $0.05 < p < 0.1$; differences are not confident: # - $p > 0.1$.

After medical treatment and psycho-therapeutic corrective measures we received in main group of patients confidently significant ($p<0.05$) distinctions by the following psycho-pathological symptoms: general weakness, increased tiredness, irritability, headache; difficulties in sleeping, anxiety and absence of cheerfulness after sleep. By symptom "reduced mood", in group with asthenia syndrome, differences were at level of statistic tendency ($0.05 < p < 0.1$).

May be just disorders of separate brain structures' functioning can be one of pathogenic mechanisms, which participate in formation of NPD with traumatic disease of brain.

The data, received by symptomatic scales of questionnaires, showed statistically significant differences between separate scales in group (men, women), presented in table 2.

Table 3

Comparative characteristic of symptomatic scales of patients with non-psychotic disorders of traumatic genesis

Symptomatic scales		Men (n=28)	Women (n=62)
1	Fears and phobias	7 (25 ± 8)	54 (87 ± 4)***
2	Depression	14 (50 ± 10)*	42 (68 ± 6)**
3	Anxiety	13 (46 ± 10)**	45 (73 ± 6)**
4	Sleep disorders	17 (61 ± 9)**	44 (71 ± 6)*
5	Neuro-asthenia disorders	20 (71± 9)**	58 (93 ± 3)***
6	Sexual disorders	5 (18 ± 7)	39 (63 ± 6)**
7	Communicative disorders	12 (43 ± 10)*	37 (60 ± 6)**
8	Hypochondria disorders	16(57±10)**	54 (87 ± 4)***
9	Psycho-asthenia disorders	19(68± 9)**	54 (87 ± 4)***
10	Somatic disorders	21 (75± 8)*	42 (67 ± 6)**

Notes: * $p<0.01$; ** $p<0.05$; ***$p<0.01$

Confident data were received practically by all scales, except "sexual disorders' and "fears and phobias" in men's group.

Anxiety, neuro-asthenia and psycho-asthenia disorders are connected, in our opinion, with social-economic processes, existing in our society as on the present time.

Test for self-assessment of functional state (SAFS) was used by us for current assessment of self-feeling, activity and mood of the tested patients. The patients of main group had confidently significant ($p<0.05$) differences in both groups after treatment by indicators of "self-feeling" and "activity"; by indicators "mood" only in patients with asthenia syndrome of post traumatic genesis. In control group indicators were on level of tendency ($0.05 <p <0.1$).

As per scale of Spielberger-Khanin the level of both, reactive and personal anxiety, was higher in patients with neurotic disorders, but statistically significant disorders were found only by indicators of low reactive anxiety ($p<0.05$). In patients with asthenia syndrome of neurotic genesis, low level of reactive anxiety approached in the process of treatment to normal indicators ($p<0.05$). We also found positive dynamic of personal anxiety in main group. In control group there were no confident changes.

Subjective assessment of depression level was determined with the help of depression scale of A.T. Beck, where results of depression presence showed changes at level of statistic tendency ($0.05 <p <0.1$). In control group no confident changes were found.

Testing of memory showed that all patients had disorders by all indicators of verbal memory (volume of short term verbal memory with first repetition of words, effectiveness of short term verbal memory memorizing with second, third and firth repetitions and volume of long term verbal memory). Confidently significant changes ($p < 0.01$) in main group patients were received after medical treatment, combined with psychotherapy in first, second, third and fourth repetitions and in volume of long term verbal memory.

Conclusions

The fulfilled research resulted in the following: against the background of chronic social-economic stresses, patients with after effects of mild cranial traumas had non-psychotic psychic disorders, which worsen life quality. Combining of medical therapy with psycho-therapy in treatment of patients with CCT after effects renders expressed therapeutic impact. Even comparatively short term course of pharmacotherapy with psycho-therapy support (up to 3 weeks) substantially normalizes subjective manifestations of disease, causes regress of main symptoms and renders expressed positive influence on mental and emotional spheres.

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