

Features of phytoneuroregulation of anxiety and depressive disorders associated with military stress

S.M. Moroz, I.I. Makarova, V.E. Semenikhina, N.V. Turishcheva, R.P. Khaitov

Summary. *The effectiveness of the phytocomplex Anantavati® («Ananta Medicare», Great Britain) used in anti-terrorist operation-wounded patients with psychopathology in recovery period was presented in the article. The use of Phytocomplex Anantavati® has demonstrated significantly higher efficacy for anxiety and depressive disorders associated with military stress. There was recorded the reduction of depressive symptoms by 40%, such as: significant improvement of sleep, reduction of irritability and somatic manifestations of mental disorders, stabilization of mood, improving appetite and normalization of sexual function.*

Key words: *anxiety and depressive disorders, military stress, phytocomplex, Anantavati®.*

Introduction

The armed conflict in the East of Ukraine has become a powerful impetus to the development of the series of stress-induced states among both military and civilian population. According to information of United Nations, dated July 10, 2015, 6764 people have become the victims of the armed conflict in Ukraine (including civilians), 16,877 people have been injured and the number of temporarily displaced persons has exceeded 2.3 million (United Nations Office for the Coordination of Humanitarian Affairs, 2015). As the practice shows, not only people affected during the military actions, but also their relatives need an urgent psychological and psychiatric care.

Staying in the zone of the anti-terrorist operation (ATO) contributes to the formation of different types of post-traumatic stress disorders, where anxiety and depressive disorders dominate in psychopathological structure. Soldiers used to reside in high-risk conditions that require active and decisive action. Soldiers were accustomed to constantly stay in high-risk conditions that require active and decisive action.

Getting back to a peaceful life, they continue to live on high alert; as a result the psychopathological disorders are developed. These psychopathological states include anxiety and depressive disorders of different types and severity, as well as socially disadapted behavior (different kinds of addiction, aggressive behavior and suicide). We note that neuro-psychiatric disorders were revealed in large quantities in soldiers and civilians during the war in Vietnam, Afghanistan, Iraq and Chechnya. On the experience of these wars, the studies of stressful conditions have been already conducted. And the results showed the long duration of their course and severity of the medical and social consequences.

The current extreme events are characterized by durability, substantial involvement of different population groups and the presence of information psychological component of «hybrid» war. In 4 weeks after injury, the symptoms of post-traumatic stress disorder were revealed in 42% of women and 32% of men respectively. 1/3 of the people affected an extreme event, had different manifestations of the disease (M. Kolesnik, 2015).

Everything above-mentioned, specifies the necessity for timely adequate psychological and psychiatric care for the injured and demobilized persons from the ATO zone.

Different psychotropic drugs are widely used in the treatment of anxiety disorders. To relieve an acute anxiety, the most common prescribed drugs are anxiolytics - benzodiazepines (Phenazepamum, diazepam), rare - tranquilizers and antidepressants. However, their use is difficult due to a number of side effects, the possible development of drug addiction and withdrawal syndrome that make difficult the patient's daily activity (Shavlovskaya O.A., 2012).

Not all combatants understand the necessity of this kind of treatment and agree to take neuroleptics and antidepressants rarely. In this connection there is the question of an adequate alternative to drug

therapy. The best option alternative is the use of herbal remedies that are mentally more acceptable for Ukrainian society.

It should be noted that for the patients with anxiety-depressive disorders the assortment of herbal remedies is limited. Many of them contain valerian, intake of which is not recommended for depression and other conditions involving depression of the central nervous system (Compendium - medication 2014). Therefore, the study and clinical use of phytocomplexes which are effective in irritability, anxiety, sleep disturbances and other symptoms of anxiety and depressive disorders, are relevant.

The purpose of this study is the study of the effectiveness of phytocomplex Anantavati («Ananta Medicare», UK), which consists of the biologically active components of the eight herbs, for the treatment of patients with anxiety and depressive disorders, related to stress of military actions.

Objects and Methods

The study involved 1358 injured combatants of ATO that were admitted to the Dnepropetrovsk regional clinical hospital of I.I. Mechnikov. 70% of these combatants previously had a brain contusion and only 30% of them had clean clinical picture of the military stress.

Within the bounds of the goals and objectives of the study, all injured combatants underwent regular clinical and psychopathological examination. Verification of the diagnosis was carried out in accordance with the diagnostic criteria of mental disorders of the International Classification of Diseases, 10th Edition. The severity level of depression was assessed using the Beck Depression Scale, and the anxiety level – by self-rating diagnostic techniques of Ch.D. Spielberger and J.L. Hanin (assessment of situational and personal anxiety).

According to the results of the diagnostics a drug therapy has been carried out and supportive psychotherapy of different types has been recommended.

According to the results of the study, 79% of patients were needed a mental health care, but only 62% of them agreed to use psychotropic agents. As an agent to reduce the severity of anxiety and depressive disorders resulting from a military stress, we offered the food supplement Anantavati – phytoneuroregulator which promotes the optimization of brain activity, the normalization of functioning of nervous system and the increase of resistance to stress.

From the total number of patients requiring the psychiatric care and those who refused to use psychotropic agents, only 32 people have agreed to take phytocomplex Anantavati and they made the target group of the study.

The course of therapy: 1 tablet of Anantavati once a day after meal for 1 month.

Results and Discussion

For a complete evaluation of clinical characteristics of different mental disorders in the study participants, as a result of psychiatric examination and the aimed survey on each item we have analyzed their main clinical presentations (Table. 1). The most common symptoms are: sleep disturbances, irritability, mood impairment, anxiety, paroxysmal state, headache, blood pressure fluctuation.

The distribution of identified clinical syndromes in the target group, according to the results of clinical and psychopathological examination, is presented in Table. 2.

Analyzing the received data, we note that in most of cases, an active service led to the occurrence of psychopathological changes in the structure of the patient's psyche. There were reported more significant expression and representation of psychopathological sings in severely injured combatants ($p < 0.05$), and a significant expression of anxiety and depressive disorders. It evidences the deep traumatic impact of active service, and the revealed dynamics of increase of psychopathology indicates the impossibility of self-overcoming of this problem.

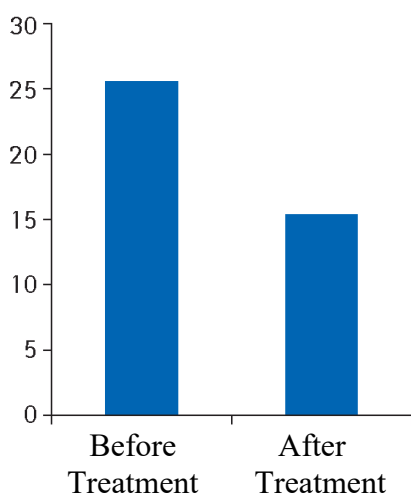
The study results of expression of depressive and anxiety disorders before and after intake of Anantavati phytocomplex are shown in Fig. 1 and Fig.2.

Table 1 The main clinical symptoms of mental disorders in combatants of ATO

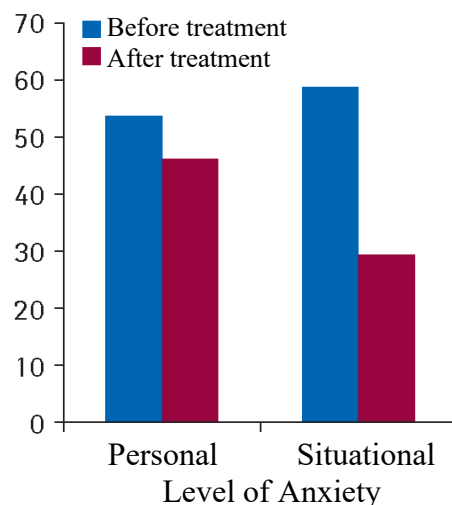
Clinical symptoms	Amount of Combatants of ATO	
	n	%
Irritability	23	71,9
Depressed mood	27	84,4
Sense of anxiety	20	62,5
Sense of fear	18	56,3
Obsession	11	34,4
Dyssomnia:	29	90,6
initial dyssomnia	16	50,0
moderate dyssomnia	11	34,4
late dyssomnia	9	28,1
presomnia	7	21,9
Reduction of volitional activity	16	50,0
Asthenia	15	46,9
Emotional lability	14	43,8
Cardialgia	12	37,5
Cardiac arrhythmias	16	50,0
Blood pressure fluctuation	23	71,9
Paroxysmal state	25	78,1
Respiratory disorders	11	34,4
The feeling of a lump in the throat	8	25,0
Gastrointestinal disorders	10	31,3
Dysorexia	16	50,0
Headache	26	81,3
Suicidal thoughts	2	6,3
Sexual disorders	17	53,1
Sensitivity shift	11	34,4

Table 2 The distribution of revealed clinical syndromes

Clinical syndromes	Amount of Combatants of ATO	
	n	%
Anxiety syndrome with a predominance of mental component	6	18,8
Anxiety syndrome with a predominance of somatovegetative equivalents	4	12,5
Episodic paroxysmal anxiety	8	25,0
Anxiety-depressive syndrome	12	37,5
Depressive syndrome	2	6,3

Fig.1

Beck Depression Scale (points)

Fig.2

Ch.D. Spielberg and J.L. Hanin
method of evaluation of situational
and personal anxiety level

During the study, the reduction of depressive symptoms ($p < 0.05$) on Beck Depression Scale (40%), as well as expressed improvement of sleep, reduction of irritability and somatic manifestations of mental disorders, stabilization of mood and appetite, normalization of sexual function.

During the study, there was revealed a significant decrease of the level of situational and personal anxiety (by 50 and 15%, respectively; $p < 0.05$) by Ch.D. Spielberg and J.L. Hanin method of evaluation of situational and personal anxiety level. There was reported a more pronounced decrease in the level of situational anxiety, depending on the current challenges and experiences that helps to reduce the clinical presentations of anxiety and prevent relapse.

The use of herbal complex Anantavati has demonstrated a significant higher efficacy in anxiety and depressive disorders in injured combatants in the ATO zone in the recovery period.

During the intake of Anantavati, the reduction of irritability level is associated with a withanone effect, contained in *Withania somnifera*, which balances the processes of inhibition and excitation in the central nervous system by reduction of the levels of stress hormones (cortisol, epinephrine) and increase of anti-stress hormones (dehydroepiandrosterone sulfate) (Auddy B. et al., 2008). Also, anti-stress effect has Indian madder (*Rubia cordifolia*), sweet flag (*Acorus calamus*), Indian spikenard (*Nardostachys jatamansi*) and *Celastrus paniculata* (Devi Priya M., Siri E.A., 2014).

When herbal complex Anantavati was used, the elimination of insomnia was happened due to the presence of the plants, such as *Convolvulus pluricaulis*, *Bacopa monnieri* and *Withania somnifera* that gently inhibit monoamine oxidase, promote slower dissolution of monoamines (serotonin, norepinephrine, dopamine) and normalize sleep phase (Auddy B. et al, 2008; Sudharani D. et.al, 2011; Bhowmik D. et.al, 2012.).

A particular interest is the antidepressant effect of herbs contained in phytocomplex Anantavati. *Centella Asiatica* (*Centella asiatica*) has anxiolytic effects by inhibiting the activity of phospholipase A2 with asiaticosides (Hashim P., 2011). *Withania somnifera* has anxiolytic effect, which is compared with lorazepam, by lowering the brain level of endogenous inhibitor of monoamine oxidase - tribulin, which is a clinical marker of anxiety (Bhattacharya S.K. et al, 2000.).

It is obvious, that pronounced sleep improvement, reduction of irritability level and somatic signs of mental disorders, stabilization of mood due to the effects of the above-mentioned components of phytocomplex Anantavati.

Conclusions

1. As the study results analysis shows, active service causes the occurrence of different psychopathological symptoms as a result of military stress. These psychiatric disorders can be revealed only by a psychiatrist, under the condition of increased attention to the mental state of the injured combatants that indicates the need for a psychiatrist and a psychologist to provide comprehensive care to such patients.

2. The use of herbal complex Anantavati has demonstrated a significant higher efficacy in anxiety and depressive disorders in the recovery period in the injured patients from the ATO zone. There were reported the decrease of the level of depressive symptoms by 40%, as well as pronounced improvement of sleep, decrease of irritability level and somatic signs of mental disorders, mood stabilization, improvement of appetite and normalization of sexual functioning.

References:

Колесник М. (2015) Посттравматическое стрессовое расстройство: диагностика, терапия, реабилитация. Укр. мед. часопис (<http://www.umj.com.ua/article/87456>).

Компендиум — лекарственные препараты (2014) В.Н. Коваленко (ред.). МОРИОН, Киев (<http://compendium.com.ua/akt/86/183/valerianaofficinalis>).

Шавловская О.А. (2012) Эффективность препаратов растительного происхождения в терапии тревожных расстройств. РМЖ (Русский медицинский журнал), 8 (http://www.rmj.ru/articles_8219.htm).

Auddy B., Hazra J., Mitra A. et al. (2008) A standardized withania somnifera extract significantly reduces stress-related parameters in chronically stressed humans: a double-blind, randomized, placebo-controlled study. JANA, 11(1): 50–56.

Bhattacharya S.K., Bhattacharya A., Sairam K., Ghosal S. (2000) Anxiolytic-antidepressant activity of Withania somnifera glycowithanolides: an experimental study. Phytomedicine, 7(6): 463–469.

Bhowmik D., Sampath Kumar K.P., Paswan Sh. (2012) Traditional indian herbs convolvulus pluricaulis and its medicinal importance. J. Pharmacognosy and Phytochemistry, 1(1): 50–59.

Devi Priya M., Siri E.A. (2014) Traditional and modern use of indian madder (*Rubia cordifolia* L.): an overview. Int. J. Pharm. Sci. Rev. Res., 25(1): 154–164.

Hashim P. (2011) Centella asiatica in food and beverage applications and its potential antioxidant and neuroprotective effect. Int. Food Res. J., 18(4): 1215–1222.

Sudharani, D., Krishna K. L.; Deval K. et al. (2011) Pharmacological profiles of *Bacopa monnieri*: a review. Int. J. Pharm., 1(1): 15–23.

United nations office for the coordination of humanitarian affairs (2015) Situation Update № 6
— Ukraine. 10 July [Epub ahead of print].