

Clinical Effects of Anxiolytic Preparation Tenoten in Complex Therapy of Essential Hypertension

I. N. Nikol'skaya, I. A. Guseva, E. V. Bliznevskaya,
and T. V. Tret'yakova

Translated from *Byulleten' Eksperimental'noi Biologii i Meditsiny*, Vol. 148, Suppl. 1, pp. 94-96, August, 2009
Original article submitted August 1, 2008

Addition of modern daily anxiolytic tenoten to complex therapy of patients with arterial hypertension improves the efficiency of treatment and reduces anxiety, which accelerates the development of hypotensive effect. Tenoten can be recommended for the treatment of anxiety symptoms in patients with arterial hypertension.

Key Words: *arterial hypertension; tenoten; anxiety level; daily anxiolytic*

Anxiety and other psychological factors are independent risk factors for arterial hypertension (AH) and should be considered together with accepted risk factors [5]. Psychological factors increase AH- and CHD-related morbidity and mortality [2]. Anxious disorders should be timely diagnosed and treated, because they worsen the prognosis of somatic pathology [1]. The important role of anxiety disorders in cardiology is confirmed by the results of a 32-year prospective study carried out in USA (Center for Disease Control and Prevention): the presence of increased anxiety increases the risk of fatal myocardial infarction and sudden death by 1.9 and 4.5 times, respectively. At the same time, special epidemiological studies carried out at Research Center of Preventive Medicine and employing objective methods showed that the level of psychological stress increases in Russian population; about 70% population lives under conditions of psychosocial stress of high and medium intensity [3].

In light of this, the role of anxiety in the development of AH, one of the main risk factor of CHD attracts special attention. AH is a prevalent cardiovascular pathology; 25-35% Russian population suffers from AH. The hypothesis that affective disorders, primarily anxiety and depression, play a role in the development and course of AH was put forward in the

beginning of the last century. At present, the relationships between AH and affective disorders are studied in two aspects.

On the one hand, a correlation was demonstrated between anxiety symptoms and AH development, on the other hand, AH is considered as a psychosomatic disease and an important role in the therapy of this condition is allocated to psychotropic drugs.

The prevalence of neurotic and somatoform disorders with anxiety symptoms in AH patients can reach 51.3% [2,6]. However, no clear recommendations for the therapy of these patients were developed. It is known that comorbid anxiety and depressive disorders, as well as AH, considerably impair working capacity; moreover, they aggravate the course of the somatic disease and promoted the formation of a hypochondriac type of the internal disease. In this context, it was interesting and important to evaluate possible effects of complex therapy with antihypertensive preparations and a daily anxiolytic on the course of AH in anxious patients.

Anxiolytic therapy considerably improves quality of life in patients with cardiovascular diseases, promotes better compensation during somatotrophic therapy and than better adaptation to the disease. Tranquilizers are most adequate, effective, and safe preparations for the control of adaptation disorders in cardiological patients [2,3]. However, patients often refuse benzodiazepines because of possible addiction

Department of Therapy, Faculty of Advanced Training and Professional Retraining of Physicians, Novosibirsk State Medical University

and undesirable effects such as sluggishness, muscular weakness, and concentration disorders. Elderly patients are often concerned about possible coordination disturbances (fear of falling and loss of balance).

Therefore, the need in non-benzodiazepine preparations with tranquilizing effect appears more and more often during recent years. One of them is tenoten.

Tenoten contains ultralow doses of antibodies to S-100 protein. The mechanisms of its action in anxiety states are probably related to modification of functional activity of endogenous S-100 proteins and its ligands. This leads to realization of its GABA-agonistic effect and recovery of GABA-ergic neurotransmission. Clinical effects include facilitation of falling asleep, reduction of behavioral manifestations of anxiety, memory improvement, and alleviation of asthenia.

Here we evaluated the efficiency and tolerability of combined treatment with hypotensive drugs and anxiolytic preparation tenoten in patients with AH.

MATERIALS AND METHODS

Sixty patients with AH aging 61.41 ± 6.91 years (38-77 years) were enrolled in the study. The patients were randomly divided into control and main groups, 30 patients per group. The main group consisted of 10 men and 12 women, and reference group consisted of 19 men and 11 women.

In the main group, AH with medium-severe course (stage II) and severe course (stage III) was diagnosed in 60 and 40%, respectively, in the reference group the corresponding values were 66.6 and 33.4%. The mean history of the disease was 10.61 ± 4.10 years (3-20 years).

A great role in the course of AH was played by family history, life style, risk factors, and concomitant pathologies. Patients with symptomatic AH and complicated forms of essential hypertension were excluded from the study.

Patients of the reference group received hypotensive therapy: angiotensin-converting enzyme inhibitors (enap), β -adrenoceptor blockers (acridilol), and diuretics (hypothiazide and arifon). Patients of the main group received combined therapy with antihypertensive preparations and tenoten. Tenoten was administered according to the following scheme: 6 tablets during the first 2 weeks, then 1 table 3 times a day. The treatment was continued for one month. The patients were examined before and 2 and 4 weeks after the start of treatment. For evaluation of mental status, Taylor Manifest Anxiety Scale adapted by T. A. Nemchinov was used. The questionnaire consists of 50 statements. The results were evaluated by the number of answers attesting to anxiety of the examinee; the total score was:

- 40-50: very high anxiety level;
- 20-40: high anxiety level;

- 15-20: medium-to-high anxiety level;
- 5-15: medium-to-low anxiety level;
- 0-5: low anxiety level.

Evaluation of the mental status in both groups revealed the presence of anxiety symptoms of different severity in many patients: initially high anxiety level was revealed in 40 and 43.3% patients in the main and reference groups, respectively, and medium-to-high anxiety level was revealed in 60 and 56.6%, respectively.

RESULTS

By the end of the study, high anxiety level in the main group decreased by 39.39% and attained the medium-to-low level. In the reference group, anxiety level decreased by only 3.6%.

In patients of the main group receiving tenoten, a clear-cut decrease in anxiety level was noted as soon as after 2 weeks; the difference from the reference group became significant by the end of the study. Elimination of affective disorders was accompanied by the decrease in the number of complains of nervousness, filling of helplessness, diffidence, and threatening jeopardy, bad seep.

The differences in the dynamics of anxiety parameters in the studied groups confirmed the possibility of effective correction of these disorders in AH patients with tenoten. It was also interesting to study whether this therapy and the severity of concomitant anxiety disorders affect the efficiency of antihypertensive therapy.

The maximum systolic and diastolic pressure values decreased in both groups (Table 1). By the end of treatment, the decrease in BP parameters became significant. In patients treated with tenoten, systolic BP decreased by 24.28% and virtually attained the age norm, in the reference group this parameter decreased by 16.48% (BP remained slightly above the normal). The diastolic pressure also significantly decreased by the end of week 4 in the main (by 17.7%) and control (by 5.9%) groups.

Addition of tenoten to complex therapy in patients with high and medium anxiety levels led to more pronounced BP decrease. Against the background of tenoten therapy, the effect of antihypertensive preparations developed more rapidly: after 2 weeks of combined therapy BP in the main group decreased to the target level, while in the reference group it remained above the target level.

The results of our study showed that anxiety symptoms of different severity were present in all patients with AH. These symptoms aggravate the course of the disease and contribute to elevation of both systolic and diastolic BP. Addition of modern daily anxiolytic

TABLE 1. Dynamics of BP (mm Hg, $M \pm m$)

Group		Start of the study	After 2 weeks	After 4 weeks
Systolic BP	Main	181.70±10.85	153.30±12.68**	14.0±8.3***
	Control	182.00±9.96	162.00±10.95 ⁺	152.00±8.46 ⁺
Diastolic BP	Main	102.3±4.3	88.7±8.6***	85.00±5.72***
	Control	101.70±3.79	96.33±4.90 ⁺	95.70±6.91

Note. ⁺ $p < 0.001$ compared to previous term; ^{*} $p < 0.01$, ^{**} $p < 0.001$ compared to reference group.

tenoten to the complex therapy of patients with AH improves the efficiency of treatment, reduces anxiety, which accelerates the development of hypotensive effect. Tenoten is well tolerated, induces no orthostatic hypotension or other side effects.

REFERENCES

1. A. S. Avedisova, *Psychic Disorders in General Medical Practice and Their Treatment* [in Russian], Moscow (2004), pp. 66-73.
2. O. S. Kopina, E. A. Suslova, and E. V. Zaikin, *Kardiologiya*, No. 3, 53-56 (1996).
3. K. V. Sudakov, *Emotional Stress and Arterial Hypertension* [in Russian], Moscow (1976).
4. E. I. Chazov, *Klinicheskie Issledovaniya Lekarnykh Sredstv v Rossii*, No. 1, 2-4 (2001).
5. I. Kawachi, D. Sparrow, P.S. Vokonas, and S. T. Weiss, *Circulation*, **90**, No. 5, 2225-2229 (1994).
6. C. J. Lavie and R. V. Milani, *Am. J. Cardiol.*, **93**, No. 3, 336-339 (2004).
7. B. S. Jonas, P. Franks, and D.D. Ingram, *Arch. Fam. Med.*, **6**, No. 1, 43-49 (1997).