SCENAR IN ARTERIAL HYPERTENSION

N.G. Sivirinova, A.V. Tarakanov, L.V. Klimova
Rostov State Medical University, Rostov-on-Don

All around the world, and in Russia particularly, arterial hypertension is one of the most important and current medical and social problem. It is the key risk factor for most cardio-vascular diseases, myocardial infarctions and strokes that greatly contribute to high mortality in the country. Hypertension affects about 40% of adults.

Sleep is one of the factors that influences the BP level and regulates activity of our body. However, we have lack of scientific data on how sleep influences on hypertension. Today sleep disorders can be treated by medicines, as well as by non-drug therapies. Electric pulse stimulation with SCENAR is one of the non-drug modalities for those who suffer from sleep disorders.

Research objective was to study the effect of SCENAR-therapy on b;ood pressure parameters and make a subjective assessment of sleep in patients with hypertension.

We gave questionnaire on sleep disorders to hospital patients and on its basis selected 60 patients to participate in the research. Using random sampling, we have divided the patients into 2 groups:

Group 1 - 30 patients (18 men and 12 women), mean age 58.2±1.2 years. This group was control group.

Group 2 - 30 patients (17 men and 13 women), mean age 54.1±1.4 years. This group received complementary therapy with SCENAR.

On examination patients had the following values:

Group 1: systolic blood pressure (SBP) - 1792±20 mmHg, diastolic blood pressure (DBP) - 91.0±1.4 mmHg, heart rate (HR) – 90.0±1.0 bpm.

Group 2: systolic BP – 178.0±2.3 mmHg, diastolic BP – 88.0±2.2 mmHg, heart rate (HR) – 83.9±2.2 bpm.

In both groups patients received common hypertensive medicines, and in Group 2 common therapy was complemented with SCENAR-stimulation (twice a

day for two weeks). SCENAR-therapy included stimulation of the collar zone with spaced electrodes using the CHANS-SCENAR-02 device following specific pattern and stimulation in the projection of patient's complaint with the built-in device electrode. All the patients refused form taking any drugs for treating sleep disorders 2-3 months before the research. The effectiveness of antihypertensive therapy and SCENAR-treatment was assessed by comparing sleep and BP parameters at the end of the hospital treatment. We also evaluated the results of BP Holter monitoring.

Results. By the end of the second week of the treatment we marked that clinical symptoms of arterial hypertension decreased or disappeared, and main hemodynamic parameters changed significantly. The analysis of treatment with SCENAR and without showed that patients from Group 1 and 2 manifest the decrease of SBP by 24.3 and 24.5%, DBP by 10.3 and 13,1 %, HR by 17.3 and 16.0%, double production by 37.3 and 36.0% respectively. Comparative analysis showed no significant difference in the abovementioned BP parameters in patients who received SCENAR-treatment. However, it not enough to use only integral BP parameters to evaluate the effectiveness of SCENAR as all the mechanisms of the hemodynamic adaptive response are not investigated enough.

We have analyzed the subjective assessment of sleep and identified that appropriate antihypertensive therapy in Group 1 has almost no effect on characteristics of sleep. Total score changed from 18.3 to 19.4 points. While including SCENAR into the treatment contributes to significant and positive changes in pre-, intra- and postsomnia processes, faster falling asleep and longer duration of sleep, fewer night wake-ups, better quality of sleep, less nightmares, and better quality of morning wake-ups. Total score changed from 11 to 24 points. That signs that patients cured the insomnia associated with the hypertension. However, we can't state for sure whether sleep disorders are primary or secondary when accompanied with arterial hypertension.

Analysis of Holter monitoring showed different results of SCENAR-therapy. We marked that average pulse pressure in Group 1 and 2 decreased by 17.8 and

41.5%, daily index of SBP significantly decreased by 26.3 and 52.4%, daily index of DBP by 34.2 and 40.8% respectively. The nighttime effect was very positive: in Group 1 and 2 average SBP decreased by 21.3 and 30.7% (P<0,05), average DBP by 18.1 and 21.1%, SBP variability decreased by 28.2 and 58.0% (P<0,05), DBP variability decreased by 14 and 32.2% (P<0,05) respectively.

Findings. We have identified that patients after SCENAR manifest normalization and stabilization of blood pressure, if compared with the control group, improved pressure parameters according to Holter monitoring, as well as improved sleep parameters. The associated pathology didn’t get worse. SCENAR is very effective and safe complementary treatment modality, therefore it could be considered as non-drug therapy that could be recommended for hypertonic patients with sleep disorders.