

## VASOMOTOR DISORDERS IN STROKE SYNDROME PATIENTS

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The influence of brain on cardiovascular activity is long since known. Yet in the classical works of Darwin (cited by 8) vasomotor and secretory reactions were described in a variety of emotions among animals and humans. In 1874 V. Y. Danilevsky (6) succeeded in demonstrating a rise in blood pressure subsequent to psychomotor zone stimulation in dogs. A few years later, L. T. Bochefontaine (14) on stimulating the sigmoid flexure, noted an alteration in the arterial pressure, both in pressor and depressor sense. V. N. Behterev and N. N. Mislovsky (2) pointed out that vasomotor impairment may result from stimulating rather extensive areas of the cerebral cortex. The above data were subsequently corroborated in human beings by L. A. Koreishta (8), Z. I. Kandel (7) and others.

In this work we undertook the task to study the topical implication of regional changes in the vascular tone and skin temperature among stroke syndrome patients in various stages of the condition. For the purpose a total of 109 patients, aged 23 to 85 years, with duration of the disease ranging from a few days to seven years, were studied. In 60 cases it was a matter of encephalomalacia, and in 49 — brain hemorrhage. The clinical picture was dominated by severe motor derangements. All patients were subjected to bilateral investigation of the oscillographic index of the humeral arteries and skin temperature at one-to-three day intervals.

A total of 81 patients were studied in the early stage of attack, i. e. within four months of the onset; in 65 of them the oscillatory index and skin temperature were higher on the paralyzed side. In 6 patients higher values were measured on the healthy side, and in 19 — sometimes on the healthy, and sometimes on the paralysed side.

Twenty eight patients were investigated in the late stage of cerebrovascular accident. In 25 of them the oscillatory index and skin temperature were found to be with lower values on the paralyzed side. In the remaining three they exhibited equal values, on the paralyzed and healthy side alike. In softening of the brain the oscillogram disclosed a marked plateau pattern with moderately elevated oscillatory index values. In cases with clinical evidence of brain hemorrhage, the oscillatory index proved to be with higher values and more clearly outlined contours. Thermoasymmetries, regardless of the nature of the condition, were more clear cut in the distal segments of the extremities.

The results of the oscillographic study performed show that in recent cases of cerebrovascular accident, the oscillatory index is higher on the paralyzed side. Similar observations were also described by D. Hadjiev and G. Gospodinov (13). G. Nastev et al (9) believe that the elevated oscillatory index in this case is due to hypotonia in the respective humeral arteries. They

stress furthermore that asymmetries in the tone of humeral arteries in the acute stage of the insultus may prove helpful in establishing topical diagnosis. Analogical inferences could be reached on the basis of the works published by T. Hermann (cited by 9), Sh. A. Rosen and L. S. Shafray (10). O. R. Stepanenko (12) underscores that the latent forms of arterial hypertension may be detected in many patients with the aid of oscillograms, and accordingly, the causes underlying the subjective and objective neurological manifestations may be eventually clarified. Proceeding from personal experience, we feel that from the presence of asymmetries in the oscillatory index we may judge not merely for the topography, but, up to a certain extent, for the character of the pathological process also. In the late stage of the stroke syndrome, the oscillatory index appears with lower values on the paralyzed side. The data reported are fully consistent with the studies of A. M. Gurevich (5), Nastev et al (9), D. Hadjiev and G. Gospodinov (12). In our opinion the cause of oscillatory index fall in this stage should be sought for mainly in the spastic state of the humeral arteries on the paralyzed side. The latter conclusion is supported also by the presence of ipsilateral hypothermia.

In the course of comparative skin temperature studies, one is strongly impressed by the fact that in recent stroke cases it is higher on the side of paralysis. Similar observations were made by Alper and Chernikov (1), I. Rusinsky (11), S. P. Varabyov etc. Among the patients with a longstanding condition, the skin temperature values are lower on the paralyzed side. Our data are in full agreement with the results of the researches conducted by I. Rusetzky (11), S. P. Varabyov (3) and others. In the past, many authors used to link the presence of thermoasymmetries to a damage in definite zones of the CNS. Fulton and Kennard (cited by 4), upon destruction of the sixth Brodmann's area in test animals, established an increase up to  $3^{\circ}$  in the temperature on the contralateral side. Destruction of the remaining areas, except for 4th and 6th one, did not result in thermoasymmetry. S. P. Varabyov (3) was successful in demonstrating more clear cut thermoasymmetries in case of damage in the area of the subcortical ganglia. Our observations prove that thermoasymmetries depend primarily on the unilateral lesion in the motor analyzer area.

In conclusion, the assumption is warranted that asymmetries in the tone of humeral arteries and skin temperature are pathologically related to the lesion in the area of pyramidal pathways, and are variably manifested in the different post-stroke stages.

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## ВАЗОМОТОРНЫЕ НАРУШЕНИЯ У БОЛЬНЫХ С МОЗГОВЫМ ИНСУЛЬТОМ

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### РЕЗЮМЕ

В настоящей работе авторы исследуют изменения сосудистого тонуса и кожной температуры у 109 больных с мозговым инсультом. На основании полученных результатов они приходят к выводу, что асимметрии тонуса плечевых артерий и кожной температуры обуславливаются поражением в области пирамидных путей, проявляющиеся различно в различных стадиях мозгового инсульта.