The interactions between the lipid metabolism of the blood and state of endothelium have a considerable scientific and practical interest because one of the pathogenetic part of progressing of vascular disorders is development of the endothelial dysfunction that represents an ability for the subsequent atherosclerotic vascular changes.

The aim of the research was to determine consistent patterns of changes of lipid metabolism and condition of an endothelium in patients of young age with the spondylogenic vertebrobasilar insufficiency.

**Materials and methods**

We examined 98 patients of young age (women - 56, men - 42) with manifestations of SVBN on the phone of neurovascular and radicular syndromes of osteochondrosis of cervical part of a vertebral column. Patients from 18 to 40 years (middle age of 28,5±3,8 years) were included in the research. To all patients the functional X-ray analysis of cervical part of a vertebral column with bending and extension, MRI of cervical part of a vertebral column, and also ultrasonography of vessels of a neck and the head with application of functional probes with rotation of the head, and also duplex scanning of vessels of the neck on the device ("Echocardiograf-320", Moscow, Russia) were carried out. Parameters of a lipid metabolism in serum of blood by spektrophotometry were determined. The levels of the total cholesterol (TCh), triglycerides (Tg) and lipoproteins of the high density (HDL), indicators of lipoproteins of very low density (VLDL) and lipoproteins of the low density (LDL) by recalculation by a formula Friedewald (Friedewald, 1972) were done. The atherogenic coefficient (CoA) was calculated. The concentration of endothelin-1 in serum of blood by the immunoensimatic analysis was determined. The control group was made by 30 healthy donors comparable on a gender and age. Obtained values were analyzed by the Student t-test. The difference was considered statistically significant at P≤ 0.05.

**Results**

The analysis of indicators of a lipid metabolism in patients with spondylogenic vertebrobasilar insufficiency revealed the disorder of transport system of lipids in all parameters. It was confirmed by reliable increasing in the content of TCh in patients group (5,68±0,94 mmol/l against 3,51±0,08). The content of Tg was slightly raised comparatively with control (0,94±0,3 mmol/l against 0,78±0,06). The VLDL level was also increased in patients of the studied group comparatively with indicators of control group (3,7±0,77 mmol/l against 2,02±0,07). Analysis of a state of an anti-atherogenous reserve in the examined patients, revealed compensatory increasing of protective forces in the form of the HDL level (1,53±0,25 mmol/l against 1,14±0,03). Thus, the increasing of the CoA in 1,3 times reflecting balance of the maintenance of atherogenous and anti-atherogenous fractions in blood testified an overstrain of protective forces of an organism, increase in atherogenous potential of blood and, therefore, increase of risk of development of atherosclerosis in the examined patients. At the same time, the tendency of increasing of the concentration of endotelin-1 – as a marker of a functional state of endothelium in blood serum in group of patients (2,84±0,09 fentamol/ml against 1,25±0,08 fentamol/ml) and decreasing of the S-NO level (0,18±0,07 mmol/l against 0,45±0,02 mmol/l) were revealed. These changes testify to vasoconstriction shift in an endothelial vasoregulation.

**Discussion**

The carried-out correlation analysis confirmed the assumption of interrelation between lipid metabolism and state of an endothelium in patients with spondylogenic vertebrobasilar insufficiency, having revealed positive correlation dependence between the content of the TCh and the level of endotelin-1 (r = +0,58; p ≤0,05) and negative correlation dependence between S-NO and LDL (r = - 0,34, p ≤0,05). Revealed in the examined patients reliable (p ≤0,05) positive correlation dependence between the LDL level and TCh (r = +0,89) against positive correlation dependence between the HDL level and TCh (r = +0,52;) shows the sanogenetical activation of reserves in the young contingent of patients and strengthening of development of an anti-atherogenous pool.
Conclusions

For the purpose of forecasting of development of vascular complications in patients with spondylogenic vertebrobasilar insufficiency when carrying out medical examination along with the standard techniques of laboratory checking, it is necessary to define the lipid metabolism of blood serum.