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ANTIPHOSPHOLIPID SYNDROME IN ACUTE CEREBRAL BLOOD FLOW DISORDERS

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ABSTRACT

The purpose of the present study was to dynamically analyze the role of antiphospholipid syndrome in patients with acute disturbances of cerebral blood flow. Twenty-eight patients (16 females and 12 males) aged between 47 and 61 years were examined. The following criteria for patient's incorporation into the study were observed: presence of a focal neurological deficit, ultrasonographic evidence of disturbed cerebral blood flow, CT or MRI data about brain stroke. According to the data from the clinical or x-ray examination, the patients were divided into three groups: with hemorrhagic, embolic, or thrombotic stroke. Anticardiolipid (aCL) antibodies were assessed by ELISA method for a 12-month period. Elevated titres of aCL antibodies were proved in 12 patients (in 43 per cent of the cases) - in ten with ischemic and in two - with hemorrhagic stroke. The treatment with neuroprotective, antiaggregation and immunomodulatory means resulted in improvement of the clinical symptoms and antiphospholipid syndrome as well. It could be concluded that the summarized clinical, roentgenological and immunological data suggest the involvement of elevated titres of aCL antibodies into the pathogenesis of the acute cerebral blood flow disorders. The estimation of these antibodies should be considered obligatory in the patients with stroke with a view to enlargement of the prognostic criteria and more adequate therapeutic approach.

Key words: acute stroke, antiphospholipid syndrome, anticardiolipid antibodies, treatment, prognosis

Antiphospholipid antibodies (APA) occur in thromboses, fetal abortions and thrombocytopenias being, however, most common in systemic lupus eythematodes (SLE) in a good correlation with immunoglobulin G (IgG) (5). Some authors (6) detect antiphospolipid syndrome (APLS) in 51,1 per cent of the cases with arterial thromboses, in 45,6 per cent of the cases with deep vein thromboses, and in 37,3 per cent of the cases with abortions and still-births. The combination of APLS and SLE presents with hemolytic anemia in 28,6 per cent of the cases accompanied by APA. These data indicate the necessity of the study of the probable hypercoagulation state in the patients with acute cerebral blood flow disorders (ACBFD) and recommend the usage of anticoagulation and antiaggregation means with a view of the prevention of cerebrovascular accidents. According to the therapeutic experience gained by certain authors (2,3,9), the administration of intravenous immunoglobulin (IVIG) is related with an increased risk of complications in the patients with atherosclerosis, hypertension, hyperlipidemia, obesity, myocardial infarction, congestive events in cardiovascular insufficiency, diabetic nephropathy, headache, eruptions, pruritus, fever, leukopenia, viral syndromes, acute renal failure, etc. In such cases a sharp reduction of the number of infusions and correction of the complications by symptomatic means should be recommended.

Anticardiolipid (aCL) antibodies were examined by means of quantitative methods while lupus anticoagulants were established indirectly by reading of the prolonged partial thromboplastin time, caolin coagulation time, or RVVT. There are interesting reports in the literature available concerning the polyclonal antibodies especially in SLE accompanied by an increased risk of vascular occlusions (8). The lupus anticoagulant is an antibody against phospholipids that can be proved by means of coagulation tests. Thrombocyte microaggregants can be observed in patients with aCL antibodies. However, in APLS patients' plasma some complexes can be detected that unlock the calcium-independent thrombocyte aggregation. This fact is of importance for the diagnosis, correction, and monitoring of APLS (11).

The cerebral microembolization detected through monitoring of TS and MES was established in APLS patients and correlated with SLE evidence and risk of a cerebrovascular disease (8,10). The comparison of these facts with the clinical and morphological; manifestations enables the generalization that APLS is accompanied by arterial or venous thromboses, cardiac valvular anomalies, abortions, thrombocytopenia, or cerebrovascular diseasae. The associ-

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ation of lupus anticoagulants in the onset of epileptic seizures was reported, too.

The aim of the present study was to dynamically analyze the role of APLS in the patients with ACBFD.

MATERIAL AND METHODS

The patients with APLS present with APA of a median or high titre and one 'major clinical criterion' such as venous or arterial thromboses confirmed by CT or MRI, ultrasonography, and histopathology, as well as thrombocytopenia or habitual abortions. The study covered 28 patients, 16 females and 12 males, aged between 47 and 61 years and without diabetes mellitus, hypertension and tobacco smoking. The incorporation of the patients into the trial was performed according to the following clinico-laboratory parameters: a) presence of a focal neurological deficit, b) computer tomography (CT) or magnetic resonance imaging (MRI) data about brain stroke and c) ultrasonographic evidence of disturbance of the cerebral blood flow. According to the data from the clinical or x-ray examination, the patients were divided into three groups: with hemorrhagic stroke (2 patients), with embolic stroke (14 patients), and with thrombotic stroke (12 patients). aCL antibodies were assessed by ELISA method for a 12-month period. Values less than 1,1 or less than 20 were considered normal. Immunovenin in a single dose of 250 mg/kg b. m. was administered every month for 6 months. A control group consisted of 28 patients with similar cerebrovascular accidents but without APAs.

RESULTS AND DISCUSSION

APLS aberrations were looked for through considering the leading neurological syndrome for the pathogenesis of the clinical symptoms based on anamnestic data, results from CT, angiographic, electroencephalographic examinations and immunological status.

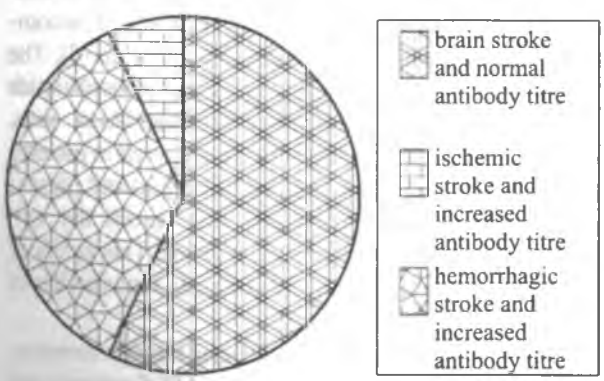

Fig. 1. Percentage ratio of patients with ACBFD and presence of APA

Elevated titres of aCL antibodies were proved in 12 patients (in 43 per cent of the cases): in ten (36 per cent) with ischemic and in two (7 per cent) with hemorrhagic stroke (Fig. 1).

Electroencephalographic examinations demonstrated diffuse changes of peak and teta waves with transient foci of teta and delta waves in 20 patients. The dynamic monitoring revealed a reduction of the general-brain and local changes in the patients with a favourable outcome of the disease.

It is accepted that APAs modify the coagulation status and increase the risk of blood coagulation. These data demonstrate the necessity of administration of anticoagulation and antiaggregation means with a view of the prevention of the cerebrovascular accidents. The treatment with neuroprotective, antiaggregation and immunomodulatory preparations improved the clinical symptoms and normalized the APLS. Similar results were reported by other investigators, too (1,4,7).

The dynamic monitoring of the patients showed a good influence upon the immunological status in 58 per cent of the cases presenting with high antibody titres. The antibody titres decreased in some patients and even normalized in other ones (Fig. 2).

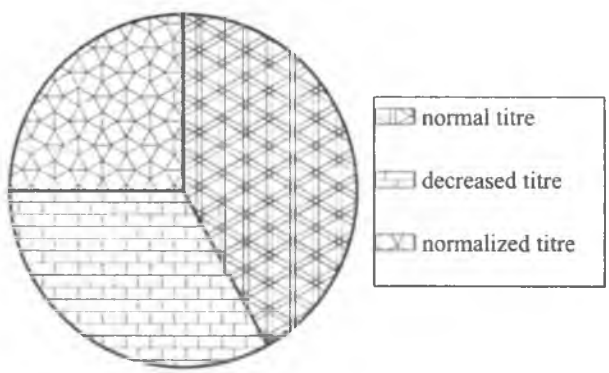

Fig. 2. Therapeutic effect on APA titre

Based on our own data we could conclude that APLS was present in most patients with a cerebrovascular disease. Some other authors describe similar findings, too. According to Chlenkovska et al. ( ), 32 per cent of the patients with APAs presented with transient ischemic attacks and stroke. According to the APASS (1), 58 out of 108 patients (54,7 per cent of the cases) presented with both APLS and stroke.

CONCLUSION

The summarized clinical, roentgenological, electroencephalographic and immunological data suggest the involvement of elevated titres of aCL antibodies into the pathogenesis of ACBFD. The determination of these antibodies in stroke is obligatory with a view to enlargement of the prognostic criteria and more adequate therapeutic approach.

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