Letters to the Editor

Low prevalence of antiphospholipid antibodies in a series of young patients with cerebrovascular disease

Sirs,

About 10% of all thrombotic cerebrovascular diseases (CVD) occur in young population (1). Elevated levels of antiphospholipid antibodies (aPL) are an acquired prothrombotic abnormality, which is the most common in association with ischemic stroke in young adults (2). We determined prevalences of different aPL subsets (anti-cardiolipin (aCL) and against each β_2-glycoprotein I (aß2GPI), prothrombin (aPT) and annexin V (aANXV)) and their possible cumulative prothrombotic role in a series of young CVD patients.

Forty patients with no evident systemic autoimmune disease (25 women, 15 men; mean age at CVD 32 years, range 18-40 years) were recruited into the study 0 to 6 years after a CVD: 9 patients with transient ischemic attack, 26 with ischemic cerebrovascular insult and 5 with venous sinus thrombosis. Diagnoses, based on medical history, clinical manifestations and objective verification by computer tomography, magnetic resonance imaging and/or angiography were set during acute events. Demographic data about smoking, hypertension, diabetes, obesity and the use of oral contraceptives were obtained by an interview at prospective clinical re-examinations. From each patient two blood samples at least 11 months following CVD and 8 weeks apart were withdrawn and analysed by enzyme linked immunosorbent assays (ELISAs) for the presence of aCL (3), aβ_2GPI (4), aPT (5) and aANXV (6) of IgG, IgM and IgA isotype. Patients were considered positive for a particular antibody if at least one isotype was detected in both blood samples.

Table I. Demographic, clinical and laboratory characteristic of 40 patients with CVD.

	No. pts.	%
No. of patients	40	
Mean age; range (years)	32; 18-40	
Female gender	25	63
Diabetes mellitus	0/40	0
Arterial hypertension	5/40	13
Migraine	11/40	28
Current cigarette smoking	21/40	53
Hyperchol. (> 5.2 mmol/l)	20/34	59
Obesity (BMI >25 kg/m^2)	14/40	35
Oral contraceptive use	10/25	40
CVD recurrence		
in aPL-negative patients	8/33	24
in aPL-positive patients	1/7	14
Large artery changes (angiography, duplex US)	5/31	16
Echocardiogr. abnormalities	8/27	30
aCL	4/40	10
aβ_2GPI	2/40	5
aPT	1/40	3
aANXV	3/40	8
pos. for > one type of aPL	2/40	5

Demographic, clinical and laboratory characteristics of 40 CVD patients are summarised in Table I. 11/40 (28%) patients had no established risk factors. By echocardiography, only minor cardiac abnormalities were found (mitral valve prolapse in 6 and mitral valve thickening in 2 patients). Occlusions of both internal carotid arteries were found in 1 and stenotic changes of large arteries in 4 patients. All CVD patients with cardiac and large vessel abnormalities were aPL negative, except for one aβ_2GPI positive patient.

Previous studies in young stroke patients mostly reported aCL prevalences higher than 10%, as compared with 8% in healthy controls (7). The 10% prevalence of aCL in our series of patients seems to be low, but three important points should be considered. By contrast to the majority of previous studies, we tested 2 separate blood samples from each patient, thus excluding transiently elevated infectious non-autoimmune aCL. aCL were determined at least 11 months after CVD, reflecting a long-standing coagulation defect. Different patient populations and methodological differences between aCL ELISAs could influence the results. Our in-house aCL ELISA follows the international standardisation procedure. Some centres used kits or even radioimmunoassay.

A low prevalence of aβ_2GPI in young patients with cerebral ischemia has already been reported (8), but not consistently (9), possibly due to the lack of a standardised aβ_2GPI ELISA. We are not aware of any study of aPT and aANXV in young CVD patients. Based on our results aPT – found in only one patient along with aCL and aβ_2GPI – seems to be less important in CVD. In contrast, aANXV were found in 8% of our patients, in 2 women as the only aPL [already described in detail previously (10)] and in one male together with aCL. Only 4% of our control blood donors' sera tested positive by the same method (not published). Only 2/7 aPL positive patients had more than one aPL subset simultaneously, making the hypothesis of a cumulative role of different aPL unlikely. Despite the low prevalence in our study, aPL but not only aCL, could still represent the risk factor for thrombosis in at least some patients. However, further studies are needed for a definite conclusion.

N. GASPERSIC, *MD*
U. ROT[1], *MD*
S. CUCNIK, *MSc*
B. BOZIC, *PhD, Ass. Prof.*
T. KVEDER, *PhD*
B. ROZMAN, *MD, PhD, Prof.*

Department of Rheumatology and [1]Department of Neurology, University Medical Centre, Ljubljana, Slovenia.

Address correspondence to: Prof. Blaz Rozman, University Medical Centre, Department of Rheumatology, Vodnikova 62, SI-1000 Ljubljana. E-mail: kc.lj.rozman@siol.net

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