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ANTI-oxLDL ANTIBODIES, HOMOCYSTEINE AND APOLIPOPROTEINS IN PRIMARY ANTIPHOSPHOLIPID SYNDROME

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Summary: Antiphospholipid syndrome (APS) can be primary (PAPS), or secondary (SAPS) antiphospholipid syndrome, which is associated with another autoimmune disease. Antiphospholipid syndrome is characterised by venous or arterial thromboses and/or recurrent miscarriages, and also by detection of the antiphospholipid antibodies. Lipid peroxidation has a key role in the pathogeneses of antiphospholipid syndrome and atherosclerosis, and in particular LDL oxidative modification. The aim of this study was to investigate the influence of: autoantibodies (anticardiolipin, anti-oxLDL, anti-β2gpI, lupus anticoagulant), apolipoproteins (apo) AI and apoB, and homocysteine (Hcy) on the clinical features of patients with primary antiphospholipid syndrome, and to compare analyzed parameters in patients and in healthy control subjects. This study included 33 patients (mean age 41 ± 14) with primary antiphospholipid syndrome and 28 healthy blood donors (mean age 37 ± 12). In sera of analyzed subjects were determined: anticardiolipin, anti-oxLDL, anti-β2gpI antibodies (ELISA), apo AI and apoB were detected by immunonephelometry, and Hcy was detected by HPLC method. The presence of lupus anticoagulant was estimated in plasma of analyzed subjects by way of coagulation tests. Patients who were positive for anti-oxLDL antibodies had venous thromboses associated with lower levels of apolipoprotein AI ($p < 0.05$). Patients with a history of thromboses of peripherial arterial blood vessels had higher concentrations of apo B ($p < 0.05$) and this finding was also present in patients with a history of cerebrovascular insults ($p < 0.05$). Patients with myocardial infarctions had significantly higher concentrations of homocysteine ($p < 0.05$). Patients who were positive for anti-oxLDL antibodies had thromboses of small

ANTI-oxLDL ANTITELA, HOMOCISTEIN I APOLIPOPROTEINI U PRIMARNOM ANTIFOSFOLIPIDNOM SINDROMU

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Kratak sadržaj: Antifosfolipidni sindrom (APS) može biti primarni (PAPS) ili sekundarni antifosfolipidni sindrom (SAPS), koji je povezan s postojanjem drugog autoimunskog oboljenja. Karakteriše se venskim ili arterijskim trombozama i/ili spontanim pobačajima uz prisustvo antifosfolipidnih antitela (aPL-At). Ključnu ulogu u patogenezi antifosfolipidnog sindroma i aterosklerozi ima lipidna peroksidacija, a posebno oksidativna modifikacija LDL. Ciljevi istraživanja u ovom radu su bili analiziranje eventualnog međusobnog dejstva: antitela (antikardiolipinska, anti-β2gpI i anti-oxLDL antitela, lupus antikoagulansa), apolipoproteina (apo) AI i B i homocisteina (Hcy) na kliničke karakteristike pacijenata sa PAPS i poređenje dobijenih vrednosti analiziranih parametara za pacijente sa vrednostima koje su dobijene za zdravu kontrolnu grupu. Istraživanje je obuhvatilo 33 pacijenata (prosečne starosti 41 ± 14 godina) sa primarnim antifosfolipidnim sindromom i 28 dobrovoljnih davalaca krvi (prosečne starosti 37 ± 12 godina). U serumima ispitanika određivana su: antikardiolipinska antitela, anti-β2gpI-antitela i anti-oxLDL antitela (ELISA metod), apolipoproteini AI i apo B su određivani imunonefelometrijski, a Hcy je određivan HPLC tehnikom. U uzorcima plazme ispitivano je prisustvo lupus antikoagulansa primenom koagulacionih testova. U pacijenata s pozitivnim nalazom anti-oxLDL antitela, prisustvo venskih tromboza je bilo povezano sa sniženim vrednostima apo AI ($p < 0,05$). Pacijenti sa trombozama perifernih arterijskih sudova su imali povišene koncentracije apo B ($p < 0,05$), a ovaj nalaz je uočen i u pacijenata sa cerebrovaskularnim insultima ($p < 0,05$). Visoke koncentracije homocisteina bile su značajno povišene u pacijenata sa infarktom miokarda ($p < 0,05$). U pacijenata sa pozitivnim nalazom anti-oxLDL antitela, prisustvo tromboza malih krvnih

blood vessels associated with the presence of anti-β2glycoprotein I antibodies of the IgM isotype ($p < 0.05$). According to the facts that: thrombotic tendency in APS is similiar with the process of atherothrombosis; lipids may contribute to the development of venous thrombosis through effects on coagulation and fibrinolytic system; hyperhomocysteinemia is a risk factor for recurrent miscarriages and for thrombosis; patients with PAPS show a tendency for recurrent thrombosis, and according to the results of this investigation, it can be concluded that in patients with PAPS testing of the above mentioned parameters is justified with the purpose of introducing additional therapy for minimizing the probability of recurrent thrombotic episodes.

Key words: anti-oxLDL antibodies, homocysteine, apolipoproteins, primary antiphospholipid syndrome

sudova je povezano sa prisustvom anti-β2gpI antitela IgM izotipa ($p < 0,05$). Na osnovu činjenica da je sklonost ka tromboziranju u APS slična sa procesom aterotromboze, da lipidi kroz efekte na koagulacioni i fibrinolitički sistem mogu da doprinesu razvoju venskih tromboza, da je hiperhomocisteinemija faktor rizika i za ponavljane pobačaje i za tromboze, da u pacijenata sa PAPS postoji tendencija ka ponovnom javljanju trombotičkih epizoda kao i na osnovu rezultata ovog istraživanja, može se zaključiti da je u pacijenata sa PAPS opravdano ispitivati navedene parametre u cilju razmatranja uvođenja dodatne terapije kojom bi se smanjila verovatnoća za ponovljeno javljanje trombotičkih epizoda.

Ključne reči: anti-oxLDL antitela, homocistein, apolipoproteini, primarni antifosofolipidni sindrom