Detection thrombogenicity antiphospholipid antibodies with APC modified TGT

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Background
Our objective was to study influence antiphospholipid antibodies effect of antiphospholipid antibodies on activated protein C, as the influence of this system may be one of the ways of thrombotic manifestation of this pathology.

Aims
The aim of our work is to determine the effect of antiphospholipid antibodies including new potential markers as anti-phosphatidylycerin/prothrombin antibodies (anti-PS/PT) on thrombin generation based assay modified by activated protein C.

Methods
Currently recommended panel of APS diagnostics (lupus anticoagulants, anticardiolipin antibodies and beta-2-glycoprotein I antibodies by chemiluminescence antibody assay) was completed with IgG/IgM aPS/PT antibodies, that were assayed using commercial ELISA kit. The determination of thrombogenicity was performed by detection thrombin generation in the absence / in the presence of APC by in-house modified method (Technothrombin TGA, Technoclone, Vienna, Austria) with detection by analyzer Ceveron Alpha (Technoclone, Vienna, Austria).

Results
As a marker for thrombogenicity of antibodies was evaluated by the rate of reduction of the overall thrombin generation with / without APC. All individual occurrences of APS markers - ie LA and individual antibodies in IgG and IgM classes, were included in the evaluation. From the primary evaluation, the inhibition is highest for LA-type antibodies with an average Inhibition value of 22.8%, significantly higher inhibition for IgM class antibodies (average 10.7%) than for IgG (average 4.9%), which did not differ from the controls.

Conclusion
✓ The new in-house method provides a very interesting picture of the effect of antibodies on the C and S protein system, which may be responsible for the manifestation of antibodies in the form of thrombotic complications in APS.
✓ Assessment of antibody thrombogenicity could provide a new parameter for assessing the severity of individual antibody types, including new risks of new potential anti-PT / PS antibody types.

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