ERAD, 2023, Volume 2, Issue 1, pages 11-12

# Expert Opinion
# Epitope specificity of anti-beta2GPI IgG in APS: clinical relevance

Running title: anti-beta2GPI IgG in APS

**Pier-Luigi Meroni**

IRCCS Istituto Auxologico Italiano, Milan, Italy

Corresponding Author's e-mail: pierluigi.meroni@unimi.it

***Abstract***

In the new ACR/EULAR APS classification criteria an entry criterion of at least one positive aPL test is included along with laboratory and clinical criteria, clustered into clinical and laboratory domains (Lupus Anticoagulant [LAC], and aCL and/or anti-β2glycoprotein-I (β2GPI) antibody IgG/M detected by ELISA). Patients accumulating at least three points from clinical and laboratory domains are classified as having APS. We discuss the mounting evidence that the epitope specificity of anti-β2GPI antibodies can offer additional diagnostic and prognostic information.

(Submitted 30 August 2023; accepted 01 September 2023)

***Keywords***- Antibody, ACR/EULAR, APL, diagnosis, LAC, prognosis

## I. INTRODUCTION

aPL represent the example of a laboratory test that moved from dichotomous to quantitative/semiquantitative results consistent with the idea that aPL titer offers more diagnostic/prognostic information for both vascular and obstetric manifestations (1). The inclusion in the new classification criteria of two levels of aCL/aβ2GPI ELISA positivity ("moderate" and "high" titers) and the combined aCL IgG and aβ2GPI IgG positivity is consistent with the higher prognostic value of medium/high aPL levels and the main value of β2GPI-dependent antibodies. The definition of aPL "persistence" (two positive tests at least 12 weeks apart) was not changed in comparison with the previous criteria. The levels for "moderate" and "high" positivity apply to ELISA tests but not to others, e.g., new automated platforms. In particular, the higher sensitivity of chemiluminescence raises the issue of the real diagnostic/prognostic value of results close to the cutoff limits used for the other solid-phase assays.

Comparison studies among the different aPL solid-phase techniques are limited and report a similar specificity of the assays even though discrepancies can be found (personal data).

## II. CONCLUSION

There is growing evidence that the epitope specificity of anti-β2GPI antibodies can offer additional diagnostic and prognostic information. For example, antibodies against domain (D)1 display higher diagnostic/prognostic value. While antibodies directed against D4,5 are more frequent in aPL-positive asymptomatic carriers.

*This is an outline of a lecture given at the 5th Panhellenic Polythematic Congress of Autoimmune Diseases, Rheumatology and Clinical Immunology, 1-3 September 2023, Nafplia, Greece

AUTHOR CONTRIBUTION

The Author drafted the manuscript and revised the manuscript. The Author approved the final version of

the manuscript.

CONFLICT OF INTEREST

There is no conflict of interest.

CONFLICT OF INTEREST

The Author declares no conflict of interest.

## References


1. Barbhaiya M, Zuily S, Naden R, Hendry A, Manneville F, Amigo MC, et al ACR/EULAR APS Classification Criteria Collaborators. 2023 ACR/EULAR antiphospholipid syndrome classification criteria. Ann Rheum Dis. 2023 Oct;82(10):1258-1270. doi: 10.1136/ard-2023-224609. Epub 2023 Aug 28.PMID: 37640450
2. Sciascia S, Bizzaro N, Meroni PL, Bogdanos D, Borghi MO, Bossuyt X, Grossi C, Tornai D, Papp M, Shoenfeld Y, Ielo D, Fritzler MJ. Autoantibodies testing in autoimmunity: Diagnostic, prognostic and classification value. Autoimmun Rev. 2023 Jul;22(7):103356. doi: 10.1016/j.autrev.2023.103356. Epub 2023 May 6.PMID: 37150488
3. Meroni PL, Borghi MO. Antiphospholipid Antibody Assays in 2021: Looking for a Predictive Value in Addition to a Diagnostic One. Front Immunol. 2021 Sep 21;12:726820. doi: 10.3389/fimmu.2021.726820. eCollection 2021.PMID: 34621272