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Why Standard Anticoagulation May Fail

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The surprisingly frequent failure of “potent” anticoagulation to prevent venous thromboembolism was the subject of this intriguing article. A possible explanation may be the presence of antibodies that modulate platelet function, which are referred to as antiphospholipid antibodies (1). This is especially pertinent to surgical prophylaxis, as the presence of antiphospholipid antibodies requires modification of standard intervention (2). Support for this hypothesis is predicated on aspirin’s effectiveness in this study, contrasted with the relatively poor performance of standard warfarin and low-molecular-weight heparin prophylaxis.

Standard warfarin dosing to achieve 2.0-3.0 INR is ineffective in preventing thromboembolic events in the presence of antiphospholipid antibodies (3). INRs of 3.0 to 3.5 are required. Fractionated heparins also are not effective in preventing thrombotic events in individuals with antiphospholipid syndrome (3,4). Thus, preventive measures for individuals with antiphospholipid antibodies are limited to three options:

1. Aspirin, with assessment of platelet function to assure platelet inhibition is successful.
2. Unfractionated heparin at standard doses.
3. Warfarin at sufficient doses to maintain INR between 3.0 and 3.5.

What assays are required to identify the presence of antiphospholipid antibodies? Antibodies to anticardiolipin (IgG, IgM, and IgA classes), to beta-2-glycoprotein I (IgG, IgM, and IgA classes) and to anti-phosphatidylserine/prothrombin (5). Such workup seems appropriate, at least among individuals who have a history of thromboembolic events.

References

1. Cohen D, Berger SP, Steup-Beekman GM, Bloemenkamp KW, Bajema IM. Diagnosis and management of the antiphospholipid syndrome. *Brit Med J*. 2010 May ;340:c2541. Doi: 10.1136/bmj.c2541.
2. Khamashta MA, Cuadrado MJ, Mujic F, Taub NA, Hunt BJ, Hughes GR. The management of thrombosis in the antiphospholipid-antibody syndrome. *N Engl J Med*. 1995 April;332(15):993-7. Bertolaccini ML, Amengual O, Atsumi T, Binder WL, deLaat B, Forestiero R. “Non-criteria” aPL tests: Report of a task force and preconference workshop at the 13th International Congress on antiphospholipid antibodies, Galveston, TX, USA, April 2010. *Lupus*. 2011;20:191-205.

3. Meroni PL, Chighizola CB, Gerosa M, Trespidi L, Acaia B. Obstetric antiphospholipid syndrome: Lobsters only? Or should we also look for selected red herrings? *J Rheumatol*. 2015 January; 42(1):158-160.
4. Ziakas PD, Pavlou M, Voulgarelis M. Heparin treatment in antiphospholipid syndrome with recurrent pregnancy loss: A systematic review and meta-analysis. *Obstet Gynecol*. 2010 June;115(6):1256-62.
5. Bertolaccini ML, Amengual O, Atsumi T, Binder WL, deLaat B, Forestiero R. "Non-criteria" aPL tests: Report of a task force and preconference workshop at the 13th International Congress on antiphospholipid antibodies, Galveston, TX, USA, April 2010. *Lupus*. 2011 April;20(2):191-205.

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