Necrosis and positivity for Epstein-Barr virus encoded RNA by in situ hybridization are frequent and supportive findings.\textsuperscript{2}

Waldid Hadid, MD  
Dana Rifai, MD  
Odile David, MD  
Chicago, IL  
Buxana T. Sadikot, MD, FCCP  
Gainesville, FL

**Affiliations:** From the Division of Pulmonary, Critical Care and Sleep Medicine (Drs Hadid and Rifai), and Pathology Department (Dr David), University of Illinois at Chicago; and the Division of Pulmonary, Critical Care and Sleep Medicine (Dr Sadikot), University of Florida.

**Financial/nonfinancial disclosures:** The authors have reported to CHEST that no potential conflicts of interest exist with any companies/organizations whose products or services may be discussed in this article.

**Correspondence to:** Waldid Hadid, MD, Department of Medicine, University of Illinois at Chicago, 840 S Wood St, MC 719, Chicago, IL 60612-7323; e-mail: whadid70@yahoo.com

© 2014 American College of Chest Physicians. Reproduction of this article is prohibited without written permission from the American College of Chest Physicians. See online for more details.

DOI: 10.1378/chest.14-0340

---

**Non-Vitamin K Antagonist Oral Anticoagulants**

**An Appeal for Consensus on Terminology**

To the Editor:

In the past few years, various alternative oral anticoagulants to the vitamin K antagonist (VKA) class of drugs (most commonly warfarin) have been tested and approved for various indications, including stroke prevention in atrial fibrillation, prevention and treatment of VTE, and secondary prevention of acute coronary syndrome.\textsuperscript{1-4} These drugs were initially designated novel oral anticoagulants or new oral anticoagulants (NOACs).\textsuperscript{5} They fall into two broad classes: direct thrombin inhibitors (dabigatran), which inhibit thrombin (Factor IIa), and Factor Xa inhibitors (rivaroxaban, apixaban, and edoxaban), which inhibit Factor Xa.\textsuperscript{5,6}

These drugs are no longer novel because this designation expires after 1 year. Given that dabigatran, the first agent on the market, was approved in 2010 and edoxaban is still in the pipeline for approval, the “new” designation could still apply, but even this one will be old after a few years, so we should think of a better way to refer to them.

Various alternatives have been proposed, including

- Target-specific oral anticoagulants (TSOACs)
- Direct oral anticoagulants (DOACs)
- Nonmonitored oral anticoagulants (NOACs)
- Non-warfarin oral anticoagulants (NOACs)
- Non-VKA oral anticoagulants (NOACs)

Each of these terms has advantages and disadvantages, but consensus is needed because papers, guidelines, and lecturers at meetings have begun using the alternative names for these drugs differently, causing confusion. Some consensus on terminology is clearly needed.

We strongly suggest maintaining the NOAC acronym used in older publications and guidelines to avoid the confusion associated with an acronym change. Because many nonwarfarin VKAs (eg, acenocoumarol) are used worldwide, we propose that the designation “NOACs” should refer to “non-VKA oral anticoagulants,” notwithstanding that warfarin was the comparator in each of the pivotal trials leading to registration of these alternative agents.

Gregory Y. H. Lip, MD  
Birmingham, England

A. John Camm, MD  
London, England

Elaine M. Hylek, MD  
Boston, MA

Jonathan L. Halperin, MD  
New York, NY

Jeffrey I. Weitz, MD, FCCP  
Hamilton, ON, Canada

**Affiliations:** From the University of Birmingham Centre for Cardiovascular Sciences (Dr Lip), City Hospital; the Department of Cardiology (Dr Camm), St. George’s University of London; the Department of Medicine (Dr Hylek), Boston University; Mount Sinai Medical Center (Dr Halperin); and the Department of Medicine (Dr Weitz), Thrombosis and Atherosclerosis Research Institute, McMaster University.

**Financial/nonfinancial disclosures:** The authors have reported to CHEST the following conflicts of interest: Dr Lip has served as a consultant to Bayer; Medtronic Inc; Sanofi SA; Bristol-Myers Squibb/Pfizer Inc; Daiichi-Sankyo, Inc; and Boehringer-Ingelheim GmbH and has been a speaker for Bayer; Bristol-Myers Squibb/Pfizer Inc; Boehringer-Ingelheim GmbH; Daiichi-Sankyo, Inc; and Medtronic Inc. Dr Camm has served as consultant/advisor to St. Jude Children’s Research Hospital; Medtronic Inc; Boston Scientific; Sanofi SA; Cardiome; Pfizer Inc; Bristol-Myers Squibb; and Boehringer-Ingelheim GmbH. Dr Hylek has served as an advisor to Bayer; Boehringer-Ingelheim GmbH; Bristol-Myers Squibb; Daiichi-Sankyo, Inc; and Janssen Pharmaceuticals, Inc; and Pfizer Inc. She has received honoraria from Boehringer-Ingelheim GmbH and Bristol-Myers Squibb. Dr Weitz has served as a consultant to and has received honoraria from Boehringer-Ingelheim GmbH; Bayer Healthcare Corp; Janssen Pharmaceuticals, Inc; Bristol-Myers Squibb; Pfizer Inc; and Portola Pharmaceuticals, Inc. Dr Halperin has served as a consultant to AstraZeneca; Bayer; BIOTRONIK; Boehringer-Ingelheim GmbH; Boston Scientific; Daiichi-Sankyo, Inc; Johnson & Johnson; Medtronic Inc; OrthoMcNeil-Janssen Pharmaceuticals, Inc; Pfizer Inc; and Sanofi-Aventis SA.

**Correspondence to:** Gregory Y. H. Lip, MD, University of Birmingham Centre for Cardiovascular Sciences, City Hospital, Birmingham, England; e-mail: g.y.h.lip@bham.ac.uk

© 2014 American College of Chest Physicians. Reproduction of this article is prohibited without written permission from the American College of Chest Physicians. See online for more details.

DOI: 10.1378/chest.13-2951

**References**


