Special Report

National Academy of Clinical Biochemistry Laboratory Medicine Practice Guidelines for Utilization of Biochemical Markers in Acute Coronary Syndromes and Heart Failure

Preamble
The National Academy of Clinical Biochemistry’s (NACB) Laboratory Medicine Practice Guidelines (LMPG) for use of cardiac markers in coronary artery diseases were published in July 1999. Since production of this initial document, numerous published studies and presented data have added significantly to the knowledge base for biochemical markers of cardiac injury. This increased knowledge has substantially expanded the scope of recommendations for biochemical marker utilization since the 1999 document, and in particular has required the inclusion of recommendations regarding biochemical markers that extend beyond myocardial necrosis. Toward addressing these advances and their impact on biochemical marker utilization in clinical practice, the NACB appointed a chair and members of an LMPG committee that was charged with revising and extending the earlier recommendations by establishing modern guidelines for Utilization of Biochemical Markers in Acute Coronary Syndromes and Heart Failure. These extended recommendations include Clinical Utilization of Biochemical Markers in Acute Coronary Syndromes (ACS); Analytical Issues of ACS Biochemical Markers; Clinical Utilization of Biochemical Markers of Heart Failure and Hemodynamic Stress; Analytical Issues of Heart Failure Biochemical Markers; Point-of-Care Testing and Logistics; and Cardiac Biomarkers and Other Etiologies. Updated draft revisions of the Guidelines were prepared and placed for comment on the NACB World Wide Web site (http://www.aacc.org/AACC/members/nacb/LMPG/OnlineGuide/DraftGuidelines/BioHearFailure/) in August of 2004. The draft LMPG and suggested revisions were also presented for public and stakeholder comment at the October 2004 Arnold O. Beckman Conference titled Cardiac Markers: Establishing Guidelines and Improving Results.

The articles presented here provide the NACB’s updated recommendations for the rapidly evolving topics of Clinical Utilization of Biochemical Markers in Acute Coronary Syndromes and Analytical Issues for Biochemical Markers of Acute Coronary Syndromes. The later of these documents represents a joint effort between the NACB and the International Federation of Clinical Chemistry’s Committee on Standardization of Markers of Cardiac Damage. The remaining sections involving other clinical and analytical issues for utilization of biochemical markers of cardiac injury are available at http://www.aacc.org/AACC/members/nacb/LMPG/OnlineGuide/PublishedGuidelines.

The strength of scientific data supporting each recommendation is characterized using the scoring criteria adopted from the American Heart Association/American College of Cardiology as summarized in Table 1. For each recommendation, the designations I, IIa, IIb, and III describe the indications, and the upper-case letters A through C describe the weight of evidence. Levels of evidence listed in the guidelines were determined by the full writing committee. Ratings were discussed in detail until consensus of the full writing committee was reached. There was no process for recusal. The members of the committee have reported all relevant relationships with industry to be published with these guidelines.

These guidelines were developed utilizing best available evidence, and they incorporated substantial input from

### Table 1. American College of Cardiology/American Heart Association Classifications.

<table>
<thead>
<tr>
<th>Summary of Indications</th>
<th>Class I</th>
<th>Conditions for which there is evidence and/or general agreement that a given procedure or treatment is useful and effective.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class II</td>
<td>Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment.</td>
</tr>
<tr>
<td></td>
<td>IIa</td>
<td>Weight of evidence/opinion is in favor of usefulness/efficacy.</td>
</tr>
<tr>
<td></td>
<td>IIb</td>
<td>Usefulness/efficacy is less well established by evidence/opinion.</td>
</tr>
<tr>
<td></td>
<td>Class III</td>
<td>Conditions for which there is evidence and/or general agreement that the procedure/treatment is not useful/ineffective and in some cases may be harmful.</td>
</tr>
</tbody>
</table>

#### Weight of Evidence

<table>
<thead>
<tr>
<th>Level of Evidence A</th>
<th>Data derived from multiple randomized clinical trials or appropriately designed studies that involved large numbers of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Evidence B</td>
<td>Data derived from a limited number of randomized trials that involved small numbers of patients, or from careful analyses of nonrandomized studies or observational registries.</td>
</tr>
<tr>
<td>Level of Evidence C</td>
<td>Expert consensus was the primary basis for the recommendation.</td>
</tr>
</tbody>
</table>
acknowledged experts and professional organizations. As such, they represent the current best practice for utilization of biochemical markers of cardiac injury.

Disclosures
Financial Disclosures: The National Academy of Clinical Biochemistry Laboratory Medicine Practice Guidelines Committee for Utilization of Biomarkers in Acute Coronary Syndromes and Heart Failure reports all reported relationships within the 2 years previous to this publication that may be relevant to this guidelines document. A document of those relationships may be found in the online Data Supplement at http://www.clinchem.org/content/vol53/issue4.

Reference

Robert H. Christenson
National Academy of Clinical Biochemistry Laboratory Medicine Practice Guidelines for Utilization of Biochemical Markers in Acute Coronary Syndromes and Heart Failure
University of Maryland School of Medicine
Baltimore, MD
National Academy of Clinical Biochemistry Laboratory Medicine Practice Guidelines for Utilization of Biochemical Markers in Acute Coronary Syndromes and Heart Failure
Robert H. Christenson

_Circulation_. 2007;115:e350-e351; originally published online March 23, 2007; doi: 10.1161/CIRCULATIONAHA.107.182880
_Circulation_ is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2007 American Heart Association, Inc. All rights reserved.
Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circ.ahajournals.org/content/115/13/e350

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in _Circulation_ can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to _Circulation_ is online at:
http://circ.ahajournals.org//subscriptions/