Unstable Angina, Allergic Angina, and Allergic Myocardial Infarction

To the Editor:

Nonocclusive thrombus on preexisting plaques, dynamic obstruction, progressive obstruction, inflammation and/or infection, and secondary unstable angina seem to be the 5 not mutually exclusive causes of the unstable angina syndrome. These were suggested in the excellent editorial by E. Braunwald.1 In this editorial, it was pointed out that vasospastic angina, which is a form of unstable angina, is rarely caused by allergic reactions via mediators such as histamine or leukotrienes acting on coronary vascular smooth muscle.

We have suggested that the coincidental occurrence of chest discomfort with characteristic clinical symptoms, signs, and laboratory findings of angina pectoris together with acute or chronic allergic processes constitutes a new clinical entity, which was named allergic angina.2 Furthermore, this can progress to acute myocardial infarction, which was named allergic myocardial infarction.3

We believe that allergic angina and allergic myocardial infarction represent a magnificent natural paradigm that might have profound clinical and therapeutic implications. This is based on clinical and laboratory findings.

It is almost certain today that the majority of cases of unstable angina and acute myocardial infarction are the result of combined coronary artery spasm and atheromatous plaque erosion or rupture followed by thrombus formation.

Allergic or hypersensitivity reactions are associated with mast cell degranulation and release of mediators including histamine, leukotrienes, and neutral proteases, such as tryptase and chymase. Histamine and leukotrienes are powerful coronary vasoconstrictors, and tryptase and chymase are metalloproteinase activators that can trigger degradation of collagen and induce plaque erosion or rupture, thus initiating an acute coronary event. Indeed, plasma histamine concentration in coronary circulation was found to be elevated in patients with variant angina,4 and infiltration of activated mast cells at the site of erosion or rupture was shown in patients with recent acute myocardial infarction.5 Therefore, the same substances released during allergic episodes are found in patients with acute coronary episodes. The reported causes to date that are capable of inducing allergic angina and allergic myocardial infarction include conditions such as food allergy; bronchial asthma; serum sickness; urticaria; angioedema; drugs such as antibiotics, contrast media, corticosteroids, dextran, nonsteroidal antiinflammatory drugs, skin disinfectants, streptokinase, tetanus toxoid, glaphenine, and zomepirac; and wasp stings and viper venoms. If we consider that these causes are commonly encountered, then one can think that a common pathogenetic basis might exist.

In 2 studies we have in progress, we have preliminarily seen that mast cell content is elevated in blood plasma of patients with acute myocardial infarction and that coronary events are reduced in patients receiving mast cell–stabilizing drugs for bronchial asthma.

Is therefore allergic angina nature’s own experiment, manifesting a magnified mast cell degranulation effect implicated in acute coronary syndromes? If this is so, then drugs that stabilize the mast cell membrane should prevent acute coronary events, at least in some instances. We urge the research community to act in this direction.

Nicholas G. Kounis, MD, FESC, FACC
Nicholas D. Grapsas, MD
John A. Goudevenos, MD, FESC, FACC
School of Health and Social Sciences
Patras Technological and Educational Institute
Patras, Greece, and
University of Ioannina
School of Medicine
Ioannina, Greece

Unstable Angina, Allergic Angina, and Allergic Myocardial Infarction
Nicholas G. Kounis, Nicholas D. Grapsas and John A. Goudevenos

Circulation. 1999;100:e156
doi: 10.1161/01.CIR.100.25.e156
Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 1999 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/100/25/e156

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/