Macrophage Subsets in Human Atherosclerosis

To the Editor:

Macrophages are the major inflammatory cells involved in the progression of atherosclerosis. Microenvironment directs these cells into morphologically and functionally distinct phenotypes. It has been classically thought that macrophages exist in two distinct subtypes: (1) "classically" activated (M1) macrophages, which are induced by Th1 cytokines such as interferon-γ and lipopolysaccharide and produce proinflammatory cytokines and (2) alternative M2 cells, which are stimulated by Th2 cytokines such as IL-4 or IL-13 and produce anti-inflammatory cytokines such as IL-10.

Evidence for the existence of M2 macrophages in human atherosclerosis recently was shown by Chinetti-Gbaguidi et al1 using histological analysis of human atherosclerotic plaques to characterize a subpopulation of CD68+ cells that were positive for the mannose receptor (MR), a surface marker for M2 macrophages. These cells contained minimal amounts of lipid by oil red O stain. To support their contention that these cells are macrophages, these cells contained minimal amounts of lipid by oil red O stain. To support their contention that these cells are macrophages.

In vitro studies of IL-4 differentiated macrophages (M2) loaded with acetylated low-density lipoprotein showed reduced apolipoprotein A1 and HDL-mediated efflux of [3H]-cholesterol. In summary, the authors concluded that the MR+ macrophages in human atherosclerosis are found exclusively in areas of previous intraplaque hemorrhage. The existence of IL-4–induced M2 macrophages in human atherosclerotic plaque cannot be confirmed by the work of Chinetti-Gbaguidi without further analysis.

Disclosures

None.

Aloke V. Finn
Omar Saeed
Renu Virmani
Department of Internal Medicine
Emory University School of Medicine
Atlanta, Georgia
CVPath Institute, Inc
Gaithersburg, Maryland
E-mail avfinn@emory.edu


(Circ Res. 2012;110:e64.)

© 2012 American Heart Association, Inc.

Circulation Research is available at http://circres.ahajournals.org

DOI: 10.1161/CIRCRESAHA.112.268714

e64
Macrophage Subsets in Human Atherosclerosis
Aloke V. Finn, Omar Saeed and Renu Virmani

Circ Res. 2012;110:e64
doi: 10.1161/CIRCRESAHA.112.268714

Circulation Research is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2012 American Heart Association, Inc. All rights reserved.
Print ISSN: 0009-7330. Online ISSN: 1524-4571

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circres.ahajournals.org/content/110/9/e64

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Circulation Research 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 Research is online at: http://circres.ahajournals.org/subscriptions/