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Cluster of differentiation 43 deficiency in leukocytes leads to reduced atherosclerosis - Brief report

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Abstract

© 2014 American Heart Association, Inc. OBJECTIVE - : The aim of this study was to investigate the role of cluster of differentiation 43 (CD43), an integral membrane glycoprotein with both proadhesive and antiadhesive activities, in atherosclerosis. APPROACH AND RESULTS - : Low-density lipoprotein receptor-deficient mice were lethally irradiated and reconstituted with either bone marrow from CD43 mice or from wild-type controls. We found that mice lacking the CD43 on their leukocytes had significantly less severe atherosclerosis and that, contrary to our expectation, macrophage infiltration into the vessel wall was not affected by the lack of CD43 in the leukocytes. However, we found that CD43 mediates cholesterol homeostasis in macrophages by facilitating cholesterol efflux. This resulted in a significant reduction in storage of cholesterol in the aorta of mice lacking CD43 in the leukocytes. CONCLUSIONS - : CD43 may be an important mediator of macrophage lipid homeostasis, thereby affecting macrophage foam cell formation and ultimately atherosclerotic plaque development.

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Keywords

atherosclerosis, macrophages