Role of oxidized LDL in atherosclerosis.


Abstract

A critical event in the early stages of atherosclerosis is the focal accumulation of lipid-laden foam cells derived from macrophages. In various cholesterol-fed animal models of atherosclerosis, localized attachment of circulating monocytes to arterial endothelial cells appeared to precede the formation of foam cells. It is suggested that monocyte recruitment into early lesions depends on the endothelial adhesiveness for monocytes and lymphocytes. In vivo and in vitro experiments have identified molecules, such as ICAM-1, VCAM-1, and P-selectin, that can support the adhesion of monocytes and lymphocytes. Moreover, oxidized LDL, lysophosphatidyl-choline, and oxidized fatty acids induce the expression not only of these adhesion molecules but also of scavenger receptors, such as CD-36, SR-A, and LOX-1. Recently, we isolated and characterized the novel receptors for oxidized LDL, namely, LOX-1 and SR-PSOX. Expression of LOX-1 is found on endothelial cells, smooth muscle cells, and macrophages, whereas SR-PSOX is expressed on macrophages. In this paper the significance of oxidized LDL and its receptors, LOX-1 and SR-PSOX, in terms of atherogenesis is discussed.

PMID: 11795267 [PubMed - indexed for MEDLINE]