Atherosclerose. Berberina possui efeitos anti-aterogênico

Anti-atherogenic effect of berberine on LXRalpha-ABCA1-dependent cholesterol efflux in macrophages.

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Source

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Abstract

Berberine, a botanical alkaloid purified from Cortidis rhizoma, has effects in cardiovascular diseases, yet the mechanism is not fully understood. Foam cells play a critical role in the progression of atherosclerosis. This study aimed to investigate the effect of berberine on the formation of foam cells by macrophages and the underlying mechanism. Treatment with berberine markedly suppressed oxidized low-density lipoprotein (oxLDL)-mediated lipid accumulation, which was due to an increase in cholesterol efflux. Berberine enhanced the mRNA and protein expression of ATP-binding membrane cassette transport protein A1 (ABCA1) but did not alter the protein level of ABCG1 or other scavenger receptors. Additionally, functional inhibition of ABCA1 with a pharmacological inhibitor or neutralizing antibody abrogated the effects of berberine on cholesterol efflux and lipid accumulation. Moreover, berberine induced the nuclear translocation and activation of liver X receptor alpha (LXRalpha) but not its protein expression. Knockdown of LXRalpha mRNA expression by small interfering RNA abolished the berberine-mediated protective effects on ABCA1 protein expression and oxLDL-induced lipid accumulation in macrophages. These data suggest that berberine abrogates the formation of foam cells by macrophages by enhancing LXRalpha-ABCA1-dependent cholesterol efflux.

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PMID:

20506155