**STATINS REPRESS THE OXLDL-INDUCED HUMAN DENDRITIC CELL MATURATION AND SUBSEQUENT T CELL PROLIFERATION**

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*Background*: Atherosclerosis is a major cause of cardiovascular disease. Activated T cells and dendritic cells (DCs) are co-localized in the atherosclerotic plaques in association with plaque rupture. Oxidized forms of low-density lipoprotein (oxLDL) can promote inflammation and are accumulated in foam cells. Statin, HMG-CoA reductase inhibitor has anti-inflammatory properties in addition to lower LDL levels. Objectives: We study the effects of statins (atorvastatin and simvastatin) on human DC maturation and T cell proliferation.

*Methods and Results*: Human peripheral blood monocytes were differentiated to DCs and stimulated with oxLDL. Naive T cells were co-cultured with pretreated DCs. The effects of statin were tested on DCs and T cells. Atorvastatin and simvastatin suppressed the DC maturation showing lower expression of CD80, CD83 and CD86, and limited their production of TNF-alpha, IL-1beta and IL-6. Statin-treated DCs inhibited Th1 and/or Th17 polarization by down-regulation of transcriptional factors T-bet, ROR gamma t expression, while induced T regulatory cells with IL-10 production. The oxLDL-induced phosphorylation of Akt, and miRNA let7c were also repressed. Experiments on T cells derived from carotid atherosclerotic plaques showed the similar results.

*Conclusions*: We demonstrate that statins repress human dendritic cell maturation induced by oxLDL and limit the consequent T cell activation. Further, statin promotes the anti-inflammatory cell response and induction of T regulatory cells. Our finding shows a novel beneficial effect of statins, especially associated with chronic inflammation and plaque rupture-prone lesions.