

## Serum ox-LDL Level and Severity of Stenosis in Coronary Arteries

Mohammad Jafar Mahmoudi<sup>1</sup>, Nima Rezaei<sup>2,3</sup>, and Maryam Mahmoudi<sup>4</sup>

<sup>1</sup> Division of Cardiology, Department of Internal Medicine, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran

<sup>2</sup> Molecular Immunology Research Center and Department of Immunology, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran

<sup>3</sup> Research Center for Immunodeficiencies, Children's Medical Center, Tehran University of Medical Sciences, Tehran, Iran

<sup>4</sup> Department of Cellular Molecular Nutrition, School of Nutritional Sciences and Dietetics, Tehran University of Medical Sciences, Tehran, Iran

Atherosclerosis is a chronic inflammatory disease of the vessel wall, characterized by local and systemic immune responses with involvement of both innate and adaptive immunity (1). Oxidized low-density lipoprotein (oxLDL), incorporating a diversity of oxidatively modified lipids and proteins, is considered as an important determining factor in the pathogenesis of atherosclerosis. OxLDL has many effects on the process of atherosclerosis, including aggravates defective endothelium-mediated vasodilation, chemokine production, endothelial adhesion molecule expression, and recruitment of monocytes to the site and foam cell formation. It also stimulates migration and proliferation of smooth muscle cell in favor of thrombosis (2,3).

We read with interest the recently published article entitled "Serum ox-LDL level is reduced with the extent of stenosis in coronary arteries" by Najafi *et al* (4) in *Acta Medica Iranica*. This article explained the relationship between serum ox-LDL level and the extent of stenosis in coronary arteries.

There are some points about this article, which should be discussed. The authors only studied the relationship or association between ox-LDL level and the extent of stenosis, while neither intervention nor follow-up was made; so, they did not study any change of ox-LDL level; and therefore the title does not fit what was presented in that article. The second interesting point is that the serum ox-LDL level in the control group was significantly higher than patients and the ox-LDL/LDL ratio was conversely correlated with the extent of stenosis, compared to the controls ( $P < 0.05$ ). In the discussion, the authors mentioned that their patients were taken lipid lowering medications. They also noted that the medications did not reduce the serum LDL level in patients, compared to controls; so, they concluded that the reduced ox-LDL is not related with drugs used by patients. However, earlier studies showed that there is a marked reduction of ox-LDL in patients with carotid atheromatosis treated with atorvastatin (5). Interestingly,

these studies showed that statins can decrease level of ox-LDL significantly, independent to lowering LDL-C and TC (6). So, the ox-LDL lowering effect of atorvastatin independent to cholesterol lowering effect could be an appropriate explanation for the differences which have seen between controls and cases and between different groups of cases, while the authors should control the effects of statins on their patients.

### References

1. Mahmoudi MJ, Mahmoudi M, Siassi F, Shokri F, Eshraghian MR, Zarnani AH, Chahardoli R, Hedayat M, Khoshnoodi J, Nayeri H, Rezaei N, Saboor-Yaraghi AA. Lymphocyte cytotoxicity of oxLDL in patients with atherosclerosis. *Iran J Immunol* 2011;8(1): 27-33.
2. Salvayre R, Auge N, Benoist H, Negre-Salvayre A. Oxidized low-density lipoprotein-induced apoptosis. *Biochim Biophys Acta* 2002; 1585:213-21.
3. Berliner JA, Heinecke JW. The role of oxidized lipoproteins in atherogenesis. *Free Radic Biol Med* 1996; 20:707-27.
4. Najafi M, Alipoor B. Serum ox-LDL level is reduced with the extent of stenosis in coronary arteries. *Acta Medica Iranica* 2013;51(5):314-319.
5. Kougialis S, Skopelitis E, Gialernios T, Nikolaou S, Kroustalis A, Katsadorou E, Gialernios K, Zervou A, Gika E, Polydorou A, Polydorou V, Drakoulis C, Iliopoulos N, Dermitzakis I, Mpilinis H, Polydorou A. Atorvastatin therapy is associated with improvement of oxidized low-density lipoprotein cholesterol levels, which correlates with the degree of stenosis in patients with carotid atheromatosis with and without prior angioplasty. *Int Angiol* 2010;29(4):338-47.
6. Huang H, Ma R, Liu D, Liu C, Ma Y, Mai W, Dong Y. Oxidized low-density lipoprotein cholesterol and the ratio in the diagnosis and evaluation of therapeutic effect in patients with coronary artery disease. *Dis Markers* 2012;33(6):295-302.

**Corresponding Author:** Maryam Mahmoudi

Department of Cellular Molecular Nutrition, School of Nutritional Sciences and Dietetics, Tehran University of Medical Sciences, Tehran, Iran  
Tel: +98 21 42933045, Fax: +98 21 66929235, E-mail: m-mahmoudi@sina.tums.ac.ir