

Association between plasma MPO and free 3-nitrotyrosine levels in patients with coronary artery disease

M. Pourfarzam^{1,*}, A. Movahedian¹, G. Basati¹, Z. Ziaaldin Samsamshariat¹, N. Sarrafzadegan²

¹*Department of Clinical Biochemistry, School of Pharmacy and Pharmaceutical Sciences, Pharmaceutical Sciences Research Centre, Isfahan University of Medical Sciences, Isfahan, Iran*

²*Isfahan Cardiovascular Research Centre, Isfahan University of Medical Sciences, Isfahan, Iran*

Background and Aims: Myeloperoxidase (MPO) is an inflammatory enzyme that is mainly released by activated neutrophils and monocytes. 3-nitrotyrosine (NT) is a stable inflammatory end product of MPO that are produced through nitrosylation of free and protein-bound tyrosines. There is limited information about the relationships between MPO and free NT levels and elevations of them in the plasma of patients with coronary artery disease (CAD). Evaluation of the relationships may have clinical implication.

Methods: This study included 50 stable angina and 50 unstable angina patients, and 50 control subjects. Plasma MPO concentration was measured with an immunoassay method. Plasma free NT level was determined by HPLC-fluorescence method. Lipid profile, high sensitivity C-reactive protein (hsCRP) and other clinical risk factors of patients were also assigned.

Results: Plasma levels of MPO and NT were significantly higher in patients with stable and unstable CAD than in control subjects ($P < 0.001$). There was a significant correlation between the two substances in CAD patients ($P < 0.001$). The correlation between MPO and NT in control subjects was weak ($P = 0.05$).

Conclusions: Plasma levels of MPO and NT are profoundly elevated in CAD patients. The significant relationships of the two substances and elevation of them may have useful clinical implication in patients with stable and unstable CAD.

Keywords: Myeloperoxidase; 3-nitrotyrosine; CAD; HPLC