

The Evaluation of Serum Nitrite, Nitrate and Malonyldialdehyde Levels in Smokers

Rostami, M (BSc)

Student of MSc of Biochemistry, Ahwaz
Jondishapur University of Medical
Sciences, Faculty of Medicine.

Jorfi, M (BSc)

Student of MSc of Biochemistry, Ahwaz
Jondishapur University of Medical
Sciences, Faculty of Medicine.

Corresponding Author: Rostami, M

E-mail: morad_r56@yahoo.com

Abstract

Background and objectives: Smokers are exposed to significant quantities of ROS (Reactive Oxygen Species); and The Level of Nitric Oxide (NO), the primary vasodilator produced by endothelial cells, is changed by cigarette smoking. Cigarette smoking is associated with impaired endothelium-dependent vasodilatation and cardiovascular disease (CVD). The aim of this study is to determine the level of serum nitrite, nitrate and malondialdehyde (MDA) levels in smokers.

Material and Methods: In this descriptive analytical study, 60 healthy male smokers and 60 male non-smokers (control group) were selected by a Purposive sampling and then serum levels of nitrite, nitrate and MDA in all patients were determined and compared to together.

Results: Serum nitrite and nitrate level in smokers are 10.4 ± 3.1 and 19.6 ± 5.9 and in non-smokers is 14.6 ± 4.4 and 29.3 ± 6.7 ($p < 0.00001$) $\mu\text{mol/L}$, respectively. The results show that smokers' are significantly lower than non-smokers'. Serum MDA level in smokers (11.7 ± 2.6 $\mu\text{mol/L}$) is significantly higher ($p < 0.00001$) than non-smokers (8.3 ± 1.9 $\mu\text{mol/L}$).

Conclusion: Based on the results, serum level of nitrite and nitrate are lower and MDA is higher in smokers. This difference can be related to CVD in smokers.

Keywords: Smokers, Non-smokers, Nitrite, Nitrate, Malodialdehyde (MDA), cardiovascular disease (CVD).