



Turkish Journal of Medical Sciences

Turkish Journal
of
Medical Sciences

Serum Homocysteine Levels in Highway Toll Collectors and the Relationship with Intima-Media Thickness of the Carotid Artery

Ramazan MEMİŞOĞULLARI¹
Beşir ERDOĞMUŞ²
Hamit Hakan ALP³
Cahit BİLGİN⁴
Peri Meram ARBAK⁴
Özlem YAVUZ¹

 [Keywords](#)
 [Authors](#)



medsci@tubitak.gov.tr

[Scientific Journals Home Page](#)

- ¹ Department of Biochemistry, Faculty of Medicine, Düzce University, Düzce - TURKEY
² Department of Radiology, Faculty of Medicine, Düzce University, Düzce - TURKEY
³ Department of Biochemistry, Faculty of Medicine, Atatürk University, Erzurum -TURKEY
⁴ Department of Chest Diseases, Faculty of Medicine, Düzce University, Düzce -TURKEY

Abstract: Aim: A relationship between air pollution and increased intima-media thickness (IMT) has been recently reported, but its etiology is not yet well understood. We aimed to determine whether exposure to exhaust particles, which are important air pollutants, is associated with increased serum homocysteine (Hcy) levels and whether elevated Hcy levels are associated with increased IMT. Materials and Methods: Serum Hcy levels were measured by fluorometric high performance liquid chromatography in 65 male highway toll collectors (HTCs) and 43 healthy male volunteers. IMT was measured with Doppler sonography by an experienced radiologist. Results: Serum Hcy levels (14.5 ± 4.9 mmol/L, $P < 0.005$) and IMT (0.757 ± 0.18 mm, $P < 0.001$) were higher in the HTC group than in controls (12.0 ± 2.8 mmol/L and 0.612 ± 0.11 mm, respectively). A positive correlation was found between Hcy level and IMT both in the HTC group ($r = 0.36$; $P < 0.005$) and in the control group ($r = 0.36$; $P < 0.05$). Conclusions: Exposure to exhaust particles may cause an increase in oxidative stress because of an increase in serum Hcy levels, which consequently may lead to an increase in IMT. Nevertheless, further studies on the subject are needed before drawing a firm conclusion.

Key Words: Homocysteine, exhaust particles, intima-media thickness, oxidative stress, highway toll collectors

Turk J Med Sci 2008; **38**(2): 133-137.

Full text: [pdf](#)

Other articles published in the same issue: [Turk J Med Sci, vol.38,iss.2.](#)