Turkish Journal of Medical Sciences

Turkish Journal

of

Medical Sciences

Keywords
Authors

medsci@tubitak.gov.tr

Scientific Journals Home Page

Fasting and Post-Methionine Load Plasma Homocysteine Levels in Patients With Angiographically Defined Coronary Artery Disease

Mustafa ÖZKAN[1]
M. Kemal ERBİL[2]
Münzer Al RASHED[2]
Emin Özgür AKGÜL[2]
Tuncer ÇAYCI[2]
Cumhur BİLGİ[2]
Gürkan METİNYURT[2]
Şerif AKMAN[2]
Türker KUTLUAY[2]

Departments of [1]Cardiology, [2]Biochemistry and Clinical Biochemistry, Faculty of Medicine, Gülhane Military Medical Academy, Ankara - Turkey

Abstract: Elevated plasma homocysteine concentration either in fasting state or after methionine loading is an independent risk factor for vascular disease. The aim of this study was to evaluate the relationship between fasting total homocysteine (tHcy) and post-methionine load tHcy in healthy control subjects and in patients with angiographically defined coronary artery disease (CAD). Methionine loading has been used to investigate impaired methionine metabolism, especially of the trans-sulphuration pathway. We investigated the effect of methionine excess on total plasma homocysteine in 65 control subjects (44 men and 21 women) who attended a polyclinic of Gülhane Military Medical Academy (GMMA) in Ankara. Forty-one patients (30 male, 11 female) who underwent cardiac catheterisation at GMMA formed the patient group. Plasma total homocysteine concentrations were measured by using high pressure liquid chromatography with fluorescence detection. The expected increase in plasma homocysteine was found in both men and women in the control and CAD groups. In three of 21 women and three of 44 men with the methionine-loading test, plasma homocysteine levels were higher than 30 µmol/l. In conclusion, it is thought that methionine loading mainly stresses catabolism through homocysteine trans-sulphuration; therefore, oral methionine loading in CAD patients leads to a higher accumulation of homocysteine in plasma than in healthy subjects, indicating that abnormal tHcy response after methionine loading may be a sensitive test for the diagnosis of CAD and the genetic defects of the Hcy metabolism.

Key Words: Homocysteine, methionine, coronary artery disease

Turk J Med Sci 2003; **33**(3): 161-166.
Full text: pdf
Other articles published in the same issue: Turk J Med Sci,vol.33,iss.3.