The association of NT-proBNP and asymmetrical dimethylarginine with all-cause mortality in long-term geriatric care patients

Safoura SHEIKH REZAEI1, Stefan WEISSHAAR1, Brigitte LITSCHAUER1, Ghazaleh GOUYA1, Michael WOLZT1 and Gerald OHRENBERGER2,*

1Department of Clinical Pharmacology, Medical University of Vienna, Austria; 2Clinical Division of Geriatrics and Gerontology, Haus der Barmherzigkeit, Vienna, Austria

Background: Increased asymmetrical dimethylarginine (ADMA), an endogenous NO synthase inhibitor, has been associated with increased mortality both in the population at cardiovascular (CV) risk and in the general population. The aim of the present study was to investigate the prognostic value of age, sex, BMI, and CV laboratory risk markers in long-term geriatric care residents.

Methods: In this prospective observational cohort study, the demographic data of all residents of “Haus der Barmherzigkeit”, Vienna, including age, sex, admission diagnosis, height and weight, were collected. Routine blood samples were collected between 14.09.2009 and 16.12.2009. ADMA, its symmetric isomer SDMA, L-arginine, and NT-proBNP were determined at study entry.

Results: In total, 481 subjects were screened. Data from 449 subjects aged above 65 years were analyzed. From these, 381 subjects died during the observation period of 90 months. 320 subjects had coronary heart disease, 409 subjects had peripheral artery disease, 335 subjects had a history of stroke, and 337 subjects had diabetes. From 449 subjects, data from 437 subjects were used for Cox regression analysis. Male gender, older age, lower BMI, and elevated plasma concentrations of ADMA, CRP and NT-proBNP were significant predictors of mortality.

Discussion: ADMA may be established as a risk marker for early overall mortality in geriatric care to enhance the prognostic value of plasma NT-proBNP in this group of elderly patients.

*Corresponding author e-mail: gerald.ohrenberger@hausderbarmherzigkeit.at