**METABOLIC BIOMARKERS OF CAROTID ATHEROSCLEROSIS IN CHINESE MIDDLE-AGED AND ELDERLY MEN**

**W. Liu**, M. Liu, Y. Yang, Y. Liu

Peking University First Hospital, Beijing, China

**Background:**Carotid atherosclerosis is proved to be a predictor of cardiovascular risk and associated with embolic stroke. While, the practicability of potential metabolic biomarkers of carotid atherosclerosis remains less understood.

**Objective:** The purpose of this study was to figure out the promising metabolic biomarkers for carotid assessment.

**Method:** Eighty five male adults aged fifty years and older from the general population were selected in this study. Circulating metabolic biomarkers, including fourteen amino acids and thirty-six acylcarnitines, were measured by liquid chromatography mass spectrometry. Carotid atherosclerosis-related parameters, including carotid intima-media thickness (IMT), plaque and carotid artery velocity were obtained by carotid ultrasound. Bivariate and partial correlation analysis were employed to estimate the correlationship between variables and carotid atherosclerosis.

**Results:** Participants with carotid atherosclerosis were older than participants without carotid atherosclerosis (73.5 vs. 59.0 ys, p < 0.001). No significant differences were found in body mass index and maximum systolic velocity of internal carotid artery between participants with and without carotid atherosclerosis (p > 0.05). Among all the amino acids and acylcarnitines, only hydroxytetradecanoylcarnitine (C14OH) was positively correlated with carotid atherosclerosis after adjustment for age (r = 0.243, p = 0.028). Although there was no independent carotid IMT-related metabolic biomarker, acetylcarnitine (C2, r = 0.327, p = 0.003) and C14OH (r = 0.243, p = 0.028) were positively correlated with carotid artery plague area even adjusted for age.

**Conclusion:**Acylcarnitines may play a more essential role in carotid atherosclerosis compared with amino acids. Besides, C14OH may be a promising metabolic biomarker for carotid assessment in the middle-aged and elderly men.