

There is a gender difference in the relationship between metabolic syndrome and oxidative stress among Japanese

Masanobu TSUCHIYA¹ Masako TOSAKA¹

¹ Masako Medical Clinic, Tokuyama, Japan

Objective The purpose of this study is to clarify whether there is a gender difference in the relationship between metabolic syndrome (MS) and oxidative stress among Japanese.

Method 50 men and 50 age, BMI, sBP, dBP, TC, HDL-c, TG, FBS and HbA1C- matched postmenopausal women were recruited. We examined the presence of MS according to the Japanese diagnostic criteria of MS. Serum hydroperoxides by d-ROM was measured as a marker of oxidative stress and BAP test was performed as a marker of anti-oxidant.

Results Postmenopausal women had higher hydroperoxides (279.3 ± 39.5 , 355.6 ± 32.0 U.CARR $P < 0.001$) and BAP (2345 ± 245 , 2531 ± 323 M $P < 0.05$) than men in non-MS group. Men and postmenopausal women in MS group showed no significant difference in d-ROM and BAP test. Visceral obesity ($r = 0.321$ $P < 0.05$) and the presence of MS ($r = 0.586$ $P < 0.001$) were positively correlated with hydroperoxides in men. Multiple regression analysis demonstrated that the major risk factors for the elevation of hydroperoxides was visceral obesity ($r^2 = 0.226$ $P < 0.05$) in men. But no factors were correlated with hydroperoxides and there were no risk factors for the elevation of hydroperoxides in postmenopausal women.

Conclusion Postmenopausal women had stronger oxidative stress than men in non-MS group and MS was strongly associated with oxidative stress in men but not in postmenopausal women among Japanese.