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Association between abdominal obesity and oxidative stress in Korean adult

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Background: Oxidative stress is known to be related to obesity. Obesity causes several changes in the body, such as inflammation. Inflammation and oxidative stress are associated with obesity. However, the association of abdominal obesity with diacron reactive oxygen metabolites (d-ROMs) and biological antioxidant potential (BAP) levels in Korean adults has not been proved yet. The aim of this study was to evaluate the association among d-ROMs, BAP levels, and abdominal obesity in Korean adult population using clinical data.

Methods: A total of 2,394 individuals, aged 18–86 years, were identified from the health check-up examination records at a university hospital between January 2015 and August 2016. Clinical and biochemical parameters, including waist circumference, lipid profile, alcohol drinking status, and smoking status, were investigated. Oxidative stress levels, namely d-ROMs concentration, as well as antioxidant capacity, namely BAP, were measured.

Results: Subjects with abdominal obesity presented significantly higher levels of d-ROMs than those with a normal waist circumference ($P<0.001$). After adjusting for age, alcohol drinking status; smoking status; and triglyceride, low-density lipoprotein, and high-density lipoprotein levels were found to positively and significantly correlate with abdominal obesity ($P<0.001$). BAP did not significantly correlate with abdominal obesity.

Conclusion: We observed a positive association between abdominal obesity and d-ROMs. This result indicates that abdominal obesity can increase oxidative stress and may affect the pathways involved in obesity, such as the inflammatory pathway. Such correlation analyses were helpful in revealing the cause of oxidative stress as well as in reducing oxidative stress

Biography

Sat Byul Park is currently working at Department of Family Practice and Community Health, Ajou University School of Medicine, Korea. She has published many articles in reputed journals.

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