F-A4

심혈관 위험 요인 및 신장병의 예측을 위한 새로운 신체계측 지표로서 Cylinder to Weight Ratio의 유용성에 대한 연구

가톨릭대학교 의과대학 내과학교실

정성진, 고은실, 김민영, 김성준, 윤혜은, 박철휘, 장윤식, 신석준

Cylinder to Weight Ratio: New Anthropometric Index for Cardiometabolic Risk Factors and Renal Insufficiency

Sungjin Chung, Eun Sil Koh, Min Young Kim, Sung Jun Kim, Hye Eun Yoon
Cheol Whee Park, Yoon Sik Chang, Seok Joon Shin

Department of Internal Medicine, College of Medicine, The Catholic University of Korea, Seoul, Korea

Background: Several anthropometric indices have been used to estimate body fat composition and to predict obesity-related health risks. However, no consensus exists about the most sensitive and specific index associated with cardiometabolic risk factors. We recently designed cylinder to weight ratio (CWR), as a new anthropometric index for body fatness, which is calculated as waist2 (cm^2)×height (cm)/weight (kg). This study was aimed to validate this new parameter as the predictor for cardiovascular and renal diseases through comparison with other anthropometric indices.
Methods: We evaluated the association of each of four anthropometric indices, dual-energy X-ray absorptiometry (DEXA), body mass index (BMI), waist to height ratio (WHtR) and CWR with health conditions among 19,345 participants in the Korean National Health and Nutrition Examination Surveys (KNHANES) during the period 2008-2011.
Results: Like DEXA, BMI and WHtR, CWR was consistently associated with metabolic syndrome, obesity, dyslipidemia, diabetes, hypertension, coronary heart disease, stroke, and renal insufficiency. Results from adjusted odds ratios comparing the highest DEXA, BMI, WHtR and CWR quartiles versus the lowest quartiles revealed that the higher levels of all anthropometric indices were more significantly associated with health condition status. From ROC curve analyses, both CWR and WHtR had greater correlations with cardiometabolic risk factors than DEXA or BMI. Furthermore, CWR had a stronger association with diabetes, coronary heart disease, stroke and renal insufficiency than WHtR.
Conclusion: Our results indicate that CWR, newly developed indicator for body fatness, would be among the most predictable anthropometric index of cardiometabolic risk factors and renal insufficiency.

Key Words: 신체계측지표, 신장병, 심혈관 위험
Anthropometric index, Renal insufficiency, Cardiovascular risk