Influence of metabolic syndrome and general obesity on the risk of ischemic stroke

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Abstract

BACKGROUND AND PURPOSE: In 2005, the National Cholesterol Education Program Adult Treatment Panel III (NCEP-ATP III) guideline lowered the fasting glucose cut point used to define metabolic syndrome (MS). This study investigated the influence of MS on ischemic stroke (IS) risk using both the original and revised definitions. In addition, because abdominal obesity is the measure of obesity used in the guideline to define MS, we also investigated whether general obesity (GOB) should be considered in the definition of MS. METHODS: Baseline data from 3453 adults (> or =20 years of age) in the Cardiovascular Diseases Risk Factor Two-Township Study were linked to insurance claim and death certificate records. The 2001 and 2005 NCEP-ATP III definitions were used with Asian and Taiwanese specific cut-off values for waist circumference and body mass index. Hazard ratios of MS and GOB on IS were calculated using Cox models, and the Kaplan-Meier method was used to derive free-of-IS survival curves. RESULTS: During 10.4 years of follow-up, 132 persons developed IS. Hazard ratios of subjects with 1 to 2 and > or =3 MS component disorders were 2.69 and 4.30, respectively, under the 2001 definition, and 3.16 and 5.15, respectively, under the 2005 definition (all P values <0.05). MS subjects with GOB had reduced survival at a borderline significance level. Adding GOB in the MS definition did not significantly alter the number of subjects with MS nor the ability to predict stroke risk. Replacing abdominal obesity with GOB in MS definition reduced the number slightly and increased the hazard ratio. CONCLUSIONS: MS predicted IS and the 2005 NCEP definition showed a stronger dose-response relationship with IS. Adding GOB to the existing MS definition had limited benefit.