Risk Factors Differ for Carotid Artery Plaque With and Without Acoustic Shadowing

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To investigate the association of gender, ethnicity, and several cardiovascular risk factors with carotid artery plaque and plaque with acoustic shadowing in a population-based sample, high-resolution B-mode ultrasonography was used to characterize lesions in the common and internal carotid arteries, and at the carotid bifurcation in 12,796 US men and women, aged 45 to 64 years, participating in the Atherosclerosis Risk in Communities Study (ARIC) baseline survey. In multiple logistic regression analyses, make gender (odds ratio and 95%confidence interval: 1.52 [1.39-1.67]) and increased total (1.47 [1.32-1.63]) and low-density-lipoprotein cholesterol (1.49 [1.34-1.65]) levels were statistically significantly associated only with the presence of plaque. In contradistinction, smoking (2.22 [1.79-2.75]) and hypertension (1.54 [1.30-1.82]) were additionally associated with acoustic shadowing. Hyperfibrinogenemia (1.33 [1.12-1.59]) was associated only with lesions accompanied by acoustic shadowing. While ethnicity associations with plaque alone varied across the artery segments, among those with plaque, being white was uniformly associated with acoustic shadowing. After multivariate adjustment, high-density-lipoprotein cholesterol was not associated with either manisfestation of Atherosclerosis. In conclusion, differences were seen in the associations of established cardiovascular risk factors with discretely characterized carotid artery plaque lesions, according to the presence or absence of acoustic shadowing suggestive of mineralization of plaque.

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