Racial differences in carotid artery wall thickness in middle aged adults

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It has been postulated that racial differences in intra-cerebral and extra-cerebral Atherosclerosis are associated with difference in cerebrovascular and coronary heart disease mortality. To assess extra-cerebral Atherosclerosis in a population-based setting, carotid artery intimal thickness measured by B-mode ultrasound was contrasted between 3,922 black and 10,485 white participants aged 45 to 64 who were examined during the Atherosclerosis Risk in Communities (ARIC) Study baseline examination (1987-89). Mean (age-adjusted) carotid wall thickness was significantly greater in black than white women at the common carotid (672 vs 628 micrometers) and the carotid bifurcation (836 vs 788 micrometers). These differences persisted after adjustment for CVD risk factors common carotid artery (731 micrometers blacks, 688, whites), while no significant differences were observed at the carotid bifurcation. In contrast, internal carotid far wall thickness was greater in white participants (both men and women) after adjustment for risk factor and SES differences. A similar picture was observed when other measures of carotid wall thickness were assessed (10th to 90th percentiles, presence of identifiable atherosclerotic lesions). These data document the different patterns of carotid wall thickness observed across anatomic site in black and white adults. Wall thickness differences observed are in contrast with putative racial differences in extra-cerebral Atherosclerosis and may be predictors of risk of subsequent cerebrovascular and coronary heart disease events.

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