COMPARISON OF EARLY LESIONS OF ATHEROSCLEROSIS

IN NEW ORLEANS, GUATEMALA AND COSTA RICA.

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In an attempt to account for the great difference known to exist between the incidence of clinical disease due to atherosclerosis in the United States and certain other geographic areas, we have compared the extent of the early lesions of aortic atherosclerosis in 461 aortas collected from the New Orleans area with 227 specimens from Guatemala and 113 from Costa Rica, all from individuals under 40 years of age. Aortas were obtained from large general hospitals and medico-legal pathology services in all three areas. They were stained grossly with Sudan IV in order to facilitate detection and quantitation of early lesions. The severity of atherosclerosis was expressed in terms of the percentage of aortic intimal surface covered by each of three types of lesions - fatty streaks, fibrous plaques, and complicated lesions.

The degree of involvement of the aortas with fatty streaks was approximately the same at all ages for New Orleans whites, Guatemalans, and Costa Ricans. These three groups were all lower than the New Orleans Negro cases at all ages, but most strikingly so between 11 and 15 years of age.

With respect to fibrous plaques, both the Guatemalan and Costa Rican specimens were significantly less severely involved than either the New Orleans white or New Orleans Negro.

Thus there is more difference in the severity of the earliest lesions of atherosclerosis (fatty streaks) between two racial groups in the same geographic area than between population groups in widely separated geographic areas. The difference in involvement with fibrous plaques, however, calls attention to the probability that factors which initiate the process of atherogenesis may be quite different from those which influence the progression of lesions to more advanced stages and to clinical disease.

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