

# AORTIC AND CORONARY ATHEROSCLEROSIS IN THE THREE RACIAL GROUPS IN CAPE TOWN\*

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In an attempt to determine whether the differences in the clinical incidence of coronary artery disease in the three racial groups constituting the hospital population of Cape Town were accompanied by differences in the incidence and severity of atherosclerosis, the aortas and coronary arteries were examined from 1,251 unselected adult autopsies. The coronary arteries and aortas were graded separately. Although the method of assessment used was essentially a subjective one, it was felt that it yielded reasonably consistent results in the hands of one observer and, in the vast majority of cases, the classification of the lesions was carried out without knowledge of the race, age or sex of the subject whose aorta and coronary arteries were being assessed. There was no significant difference in the incidence of hypertension, as judged by strict clinical and pathological criteria, between Coloured and European males in this series. The incidence of hypertension in Coloured females in the 6th decade was, however, twice that in European females. Hypertension was at least as common and, in several age-groups, commoner in the Bantu than in the other racial groups.

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Bantu subjects constitute a relatively small proportion of the adult autopsies performed in this Department and the main purpose of the study was to determine whether any differences existed between the European and Cape Coloured groups. The results in the Bantu subjects were, however, of great interest and sufficient Bantu cases were available in certain age-groups for a direct comparison to be made between the findings in the Bantu and European. Severe aortic and coronary atherosclerosis were much less common in a series of 60 Bantu males between the ages of 40 and 59 years than in European males of the same age. Of 60 Bantu males in this age-group only 3 (5%) showed severe coronary atheroma, as compared with 46 cases (37%) among 125 European males. Severe luminal narrowing of the coronary arteries was encountered in 24% of the 125 European males whereas none of the 60 Bantu males (including the 3 who had been labelled as having severe coronary atheroma because of the presence of numerous plaques) showed severe luminal narrowing. Comparable figures for the incidence of severe aortic atheroma in this age group were 10% in the Bantu and 65% in the European. More than half (57%) of these Bantu males showed no intimal lesions, or merely fatty streaking, in their coronary arteries, whereas

only 6% of European males showed this degree of freedom from atheroma.

There were comparatively few Bantu females in the series, particularly in the older age groups, and only 19 Bantu males over the age of 60 years were available for study. It did, however, seem that the same general differences existed between the European and Bantu in these older patients and in the female groups as were seen in the male subjects in the 5th and 6th decades. Although 20% of our small group of Bantu males over the age of 60 had severe coronary atheroma, as judged by the number of plaques present, the comparable figure for Europeans was 58% and none of the Bantu cases showed severe luminal narrowing. The aorta and coronary arteries in the Bantu often showed complete or virtually complete freedom from atheromatous plaques in age-groups in which it was very rare to find such freedom in Europeans. The coronary arteries of 10 of our small group of 19 Bantu males over the age of 60 years showed no intimal lesions or merely a few fatty streaks. A similar degree of freedom was exceedingly rare in Europeans (4 out of 200 cases).

The differences between the Coloured and European groups were less marked than those between the Bantu and European. In Coloured males the incidence of severe coronary atheroma and aortic atherosclerosis was lower than in Europeans of comparable ages. The differences were best seen in the 5th decade, in which severe aortic and coronary atheroma were about twice as common in the Europeans. Similar differences were present, but to a lesser degree, in the older age groups. The more moderate degrees of

atherosclerosis were, however, as common in the Coloured males as in the Europeans or even commoner, and the lower incidence of severe atherosclerosis in Coloured males was not accompanied by a greater frequency of cases showing no lesions or only mild lesions, except perhaps in the 3rd and 4th decades.

There was no significant difference in the incidence of severe coronary atherosclerosis (as judged by the number of plaques present) in European females and Coloured females, but severe luminal narrowing was slightly less common in Coloured females. There was also very little difference between the incidence and severity of aortic atherosclerosis in these two racial groups except that European females had a higher incidence in the 7th and 8th decades. The finding that the female groups did not show the same racial differences between Coloured and Europeans as the males did is a most interesting one but it may have been due, in part at least, to the higher incidence of hypertension in certain of the Coloured female groups.

In certain age-groups within the series (especially in the 6th decade), and particularly in females, the difference in the incidence of myocardial infarction in the Coloured and European subjects appeared to be more impressive than the difference in the incidence of severe coronary atherosclerosis. This finding may possibly be a pointer to the existence of some additional factor, operating more commonly in the European than the Coloured, and determining a disproportionately higher incidence of myocardial infarction in the European than can be explained purely on the differences in the degree of coronary atherosclerosis between the two groups.