

Letter to the Editor

Coronary Heart Disease in South African “Poor Whites” and White Prisoners Habituated to a Bantu Type of Diet

Dear Sir:

Electrocardiographic and other relevant investigations are being undertaken on groups of nonhospitalized Bantu (primitive and sophisticated), Asiatics, “poor whites,” and middle class South African whites. The electrocardiographic studies thus far undertaken on the Bantu (1,800 subjects) point to a very low incidence of myocardial infarction, a finding in agreement with the reported rarity of the condition found at necropsy.¹⁻³ The observation which we wish to discuss here is the apparently low incidence of infarction in indigent whites (poor whites), as detected by electrocardiographic studies undertaken and interpreted as described in the recent WHO publication on “Hypertension and Coronary Heart Disease.”⁴

Up to the present, 340 subjects (201 men, 139 women) have been examined; 233 (141 men, ninety-two women) ranged in age from forty to seventy-eight years, the average age being fifty-three years. Two men,* aged sixty-five and sixty-seven years, respectively, gave evidence of infarction, indicating an incidence of 1.5 per cent in the older male group and zero incidence in the older female group. Furthermore, no subject gave unequivocally positive replies to the three leading questions which were used in the Los Angeles cardiovascular study, and designed to elicit evidence of angina pectoris.⁵

In comparison, in a study on Indians at New Delhi,⁶ electrocardiographic studies revealed

* The presence of myocardial infarction in the first “poor white” subject, aged sixty-five years, is not completely certain.

no case of infarction in sixty-two poor workers aged eighteen to seventy years, and two cases (2 per cent) among 100 business and professional men aged twenty to sixty-five years. In the Los Angeles investigation⁵ combined electrocardiographic evidence and replies to questions indicated “coronary arteriosclerosis” to be present in forty-seven of 1,125 men (4.2 per cent) aged forty through sixty plus years. Regarding other somewhat comparable studies, Weitzman and Smith⁷ investigated 100 hospital patients aged fifty to eighty years with no clinical evidence of cardiac disease; myocardial ischaemic tracings were noted in ten subjects (10 per cent), the number increasing to twelve (12 per cent) after exercise; six of these patients subsequently died and gave evidence of ischaemia at postmortem examination. Wosika et al.⁸ (on the basis of electrocardiographic studies) reported the condition present in 21 per cent of clinical healthy subjects over eighty years. In our own studies, obviously, far more observations will need to be made on “poor whites” before we are able to define their apparently advantageous position regarding myocardial infarction and angina pectoris. Unfortunately, such studies are protracted being undertaken on house-to-house, or more often farm-to-farm visits. At this juncture the only tentative inference which we wish to make, and are bringing forward because of its ramifications, is the apparently low prevalence of coronary heart disease in a white population, not underweight, and habituated to a Bantu pattern of diet, i.e., very high carbohydrate (maize and wheaten bread, 1 to 1½ pounds dry cereal per diem), and very low in

animal protein and fat (especially animal fat). This relatively low incidence of the disease in poor people, qualitatively, is not unexpected bearing in mind that in England it has been shown that mortality from coronary heart disease in social class I is double that in social class IV.⁹

The second point concerns South African white prisoners who consume a diet very high in crude fibre and carbohydrate (over 1 pound dry cereal per diem) and low in fat, although not low in calories or in protein (animal and vegetable). Among long-term prisoners, death from coronary heart disease during detention is believed to be very rare. Thus, in Pretoria Jail, which accommodates about 600 white prisoners, in the past thirty-two years in only one man of thirty-seven men who died during confinement was death certified as being due probably to coronary thrombosis, and this person was a newcomer. Prisoners, of course, are a very selected population; in addition they are probably more active and smoke less than those at liberty; moreover, while certainly not free from stress, they do not experience the "deadline date" type of life,¹⁰ nor the competition associated with nonprison conditions. In our view, however, the change of greatest magnitude that takes place among them is that of diet. Here again, qualitatively, this finding is not unexpected. The war-time experience of Norway and Finland, despite certain anomalies that have been pointed out,¹¹ leaves little doubt that at the period when the national diet became higher in carbohydrate and lower in fat, there was a reduction in mortality from coronary heart disease.¹²

Assuming that further work confirms that "poor whites" do indeed have a low incidence of coronary heart disease, and that white South African long-term prisoners seldom die from the disease, it would seem permissible to make two comments: (1) It should now be possible to fully characterise a white population among whom coronary heart disease presents no public health problem. (2) Among the white prisoners, not necessarily years, but apparently only months of the type of context described would seem to be sufficient to greatly reduce or even prevent deaths from coronary

heart disease. It is important to stress that such protection obtains in the presence of ample calories and protein (animal and vegetable). Despite this highly practical point, it is imperative to emphasize that insofar as diet is responsible, to reach this favorable outcome the requisite degree of departure from an average white diet is very considerable.

The foregoing comments are made entirely on the assumption that further work confirms the items of evidence cited on the "poor whites" and white prisoners. Additional work on the former, while time-consuming, is straightforward. If confirmatory, the next stage of endeavour will be to determine and characterise the highest economic stratum of the South African white population between "poor whites" and the more favored class of whites,* which has a low incidence of coronary heart disease. The situation regarding the apparent rarity of acute coronary episodes in white prisoners lends itself to relatively early confirmation or otherwise by means of clinical and electrocardiographic studies conducted along two avenues of approach: (1) Establish the incidence of coronary heart disease in newcomers; then determine the incidence in groups who have served five and ten year sentences; the incidence in the long-term prisoners should be that of their age periods at the time of commencement of detention, and not that of their chronologic ages. (2) Determine the incidence of infarction in newcomers, and then again after perhaps two- and four-year intervals; there should be no increase in incidence of the condition comparable to that found in non-prison white populations. For example, in the Los Angeles study,¹³ among men with "normal hearts" at the beginning of observation periods, the annual increase in incidence was 0.8 per cent at forty to fifty-four years, and 2.9 per cent at fifty-five to seventy years. If our investigations are successful, it should be possible to define the diet and manner of life which even when adopted for relatively short

* Subsequent studies on additional "poor white" groups suggest that a relatively low incidence of coronary heart disease prevails only in the lower economic stratum of such populations.

periods, is associated with a low mortality from coronary heart disease.

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