

EDITORIAL : VAN DIE REDAKSIE

DIABETES IN NON-WHITE PEOPLE IN SOUTHERN AFRICA

The syndrome of diabetes—certainly in people in warmer climates—is largely an illness of well-being. Thus it is not surprising that the Republic should, with the rapid increase in living standards enjoyed by our non-White people in the last 3 decades, have been productive of one of the most remarkable and dramatic instances of diabetic emergence ever recorded in previously under-privileged people. This week the whole issue of the *Journal* is devoted to this important and pressing problem—which has assumed such proportions that, according to one worker, it can be looked upon as having entered the field of preventive medicine. Measures such as widespread diet guidance are therefore not only desirable but also imperative.

When we consider diabetes among the non-Whites in Southern Africa our thoughts turn at once to Natal, where the Natal Indian people now almost certainly have the unenviable distinction of having the highest diabetic prevalence in the world, and where the Zulu people—previously believed to be devoid of the disease—are also becoming productive of a rich crop of diabetics. It is therefore not hard to see how the Diabetic Clinic of the King Edward VIII Hospital and the University of Natal Medical School had actually registered their 5,000th new diabetic patient before the Clinic had been in existence for 5 years. During these last few years the intense activity of Dr. G. D. Campbell and his group has been productive of an extraordinary number of original observations, which have profoundly affected concepts and considerations of diabetes in warmer climates and have justly earned for this Clinic the pre-eminence that it enjoys today in the field of tropical diabetes. Dr. Campbell's paper, which is published on p. 1195 in this issue of the *Journal*, testifies to the large amount of original work that has been done by his group.

Many of these observations are very important. Dr. Campbell's remarkable collection of over 230 connubial (husband-wife) diabetics is, *inter alia*, the basis for his contention that hereditary factors are subservient to environmental factors in the emergence of diabetes. His observations on the therapeutic considerations of youthful diabetics have caused him to advance the concept of the 'insulin-independent young diabetic' of the Tropics. This category includes young patients who are often very thin, and yet able to survive infection or pregnancy without needing insulin. He has approached, in the form of a world-wide survey coupled with his own observations, the relationship between *per capita* national annual sugar consumption in various countries and the local prevalence of diabetes. He has shown that not only is there a remarkably constant 'incubation period' of exposure to high sugar intake before diabetes emerges, but also that an average 'consumption threshold' of 30 kg. of sugar per person *per annum* must be exceeded in most racial groups before diabetes becomes 'common' in these groups; that is to say, before the prevalence equals or exceeds that found in Europe or America. This is a novel approach, since no-one really knows what sugar does to the islet cells, except to make them produce or release large

amounts of insulin. In this connection, he links his own observations in Natal to Neel's fascinating concept of the 'thrifty' genotype hypothesis, which suggests that diabetes is an atavistic characteristic designed to keep up blood-sugar levels in times of privation and food uncertainty, where a maintained blood-sugar level means the difference between survival and extinction.¹ He believes that the inordinate prevalence of diabetes in certain sections of the Natal Indians may be the result of 'abuse' of this particular metabolic mechanism, which has probably been conditioned by generations of hardship in India, especially when it is borne in mind that the sugar intake in Natal among Indians is about 10 times that found in India.²

The results of diabetic prevalence studies in Natal have thrown grave doubts upon the efficacy of the 'classical' method of doing surveys, where only those in any group with postprandial glycosuria are subjected to blood-glucose studies. The Durban workers suggest that by virtue of the commonness of high renal thresholds and the rarity of 'renal' glycosuria in certain racial groups, those *without* postprandial glycosuria should be tested. They have also drawn attention to the very low incidence of true insulin-dependence in non-White diabetics and to the possible harmful effect of unnecessary insulin in these people. Furthermore, they are not entirely satisfied that the treatment of latent diabetes ('prediabetes'), other than with diet, may not actually be harmful. In a study published over 2 years ago³ this group produced impressive evidence which suggests that diabetic vascular disease is not a function of the duration or control of the syndrome, if indeed either is definable. Further, they have put forward findings suggesting that the presence or progression of vascular disease may be entirely an ethnic phenomenon.

The Durban group of workers have collected 1,000 Zulu diabetics, including 7 connubial pairs. The advantage of this has been that they have been able to compare the diabetic syndrome in 2 pure ethnic groups in the same clinic, something that is denied most workers in the world today. The work of this group patently gives the lie to the contention that purely clinical observations are outmoded in this age of fanatical laboratory approach towards the study of diabetes.

Prof. M. Gelfand and Dr. Forbes present their experiences of diabetes in the African in Salisbury. Judging by their surveys diabetes is far less common in Africans in Rhodesia than in the Republic. Of great interest is the preponderance of male diabetics. Hypertension is common, but not neuropathy. The very low incidence of diabetic retinopathy in these Africans may bear out the fact, in the light of statements above, that these people are probably not nearly as advanced as those in Johannesburg and Durban, and have not been exposed for so long to the European type of diets.

Drs. H. C. Seftel, K. J. Keeley and A. R. P. Walker, of Johannesburg, discuss their experiences of 700 urbanized, African diabetics, as well as their studies of glycosuria and other biochemical observations in the rather scattered Asian communities in the Transvaal. Once again

they accentuate that diabetes is far more common in town Africans, especially in advanced social groups. They found infection, cataract and ketosis common, and they noted a similarity between the syndrome in the European and the African. Perhaps one of the most elegant studies in diabetes from this continent has been their work on the relationship of iron metabolism and diabetes. Though siderosis is very common indeed (70% of all males), haemochromatosis is uncommon (20% of African diabetic necropsies). As opposed to the syndrome seen in the European, haemochromatosis in the African is an acquired disease, a history of alcoholism being invariably present. Of interest is their original observation, some years ago, on the common association of diabetes, haemochromatosis and porphyria cutanea tarda in the Transvaal African. This school still uses insulin widely (42% of patients) and oral drugs in approximately 45%. They are fortunate in having an unrivalled dietetic service.

It is interesting to note the simultaneous and independent observations from the Durban and Johannesburg Schools. Both groups of workers have noted in the last 5 years a changing picture in regard to diabetic vascular disease in Africans, both have commented upon the increasing frequency of vascular disease and the fact that more African diabetics (like the Natal Indians) are presenting with established vascular disease. We are therefore now forced to consider the possibility that extraneous factors may not only affect the frequency but also the actual type of diabetes found.

Drs. W. P. U. Jackson and C. P. Dancaster, of Cape Town, and their associates complete this issue with a number of short but very important papers. This group

of workers have tried to correlate adrenal function in various racial groups with the incidence of diabetic vascular disease. Once again we are faced with the vexed problem of what the relationship is between urinary hormone studies and actual hormone effects in the body.

Dr. Jackson's conclusions are very interesting in the light of the views expressed by the authors referred to above. He states 'I should like again to emphasize the importance of diabetes from a purely numerical point of view. Present evidence indicates that about 10% of the total White population are potential diabetics. Among the Bantu it is probable that the figure is similar, but so far kept down by environmental conditions. Perhaps 40% of the Natal Indians are potential diabetics. *There are certainly over a million potential diabetics in this country* (our italics). In the Cape we do not know where the Indian and the Moslem population fit in. Surely the whole subject is of sufficient public-health importance to justify the spending of a little money on its full investigation?'

The observations and findings described in this issue of the *Journal* should certainly give food for thought to many people. It is important that our whole approach to the problem of diabetes be reconsidered. On a practical level it is no longer feasible to ignore the possible preventive aspects of the problem, such as for instance making available expert guidance regarding diet to all the sections of our community.

1. Neel, J. V. (1962): *Amer. J. Hum. Genet.*, **14**, 353.
2. International Sugar Council (1961): *Sugar Year Book*, p. 259 London and Tonbridge: Brown, Knight & Truscott.
3. Hathorn, M. K. S., Gillman, T. and Campbell, G. D. (1961): *Lancet*, **1**, 1314.

DIABETES BY NIE-BLANKE PASIËNTE

In hierdie uitgawe van die *Tydskrif* publiseer ons die bevindings en gevolgtrekkings van vooraanstaande werkers en navorsers op die gebied van die diabetiese sindroom, veral soos dit voorkom by ons nie-Blanke bevolkingsgroepe. Die werk waarna ons verwys, sal 'n goeie beeld gee van die omvang van die probleem op hierdie gebied soos dit dwarsoor Suidelike Afrika voorkom, aangesien ons die medewerking gehad het van sulke persone soos dr. G. D. Campbell en sy groep, van die Diabetiese Kliniek van die Koning Eduard VIII-hospitaal en die Mediese Skool van die Universiteit van Durban; drs. W. P. U. Jackson en C. P. Dancaster, van die Endokrine Navorsingsgroep van die Universiteit van Kaapstad; drs. H. C. Seftel, K. J. Keeley en A. R. P. Walker van die Baragwanath-hospitaal, en die Suid-Afrikaanse Instituut vir Mediese Navorsing, Johannesburg; en prof. Michael Gelfand en sy medewerkers uit Suid-Rhodesië.

Die feit dat diabetes 'n siekte is wat, anders as 'n groot aantal ander siektes, eintlik 'n siekte van bevoorregte mense is, is al lank by gesondheidsbeamptes bekend. Die gevolgtrekking van die werkers wat in hierdie uitgawe van die *Tydskrif* skryf, dui ook onmiskenbaar op hierdie feit.

Vir ons in hierdie land is hierdie waarneming van besondere groot belang. Ons kan die diabetiese sindroom nie langer as net 'n endokrine en metabiese verstoring beskou nie. Dis 'n sindroom wat benader moet word teen die agtergrond van die hele sosio-ekonomiese gesteldheid van die groep met wie ons te doen het, en dit moet ook uit die oogpunt van die voorbehoedende medisyne benader word. In praktiese terme sal dit gewens wees om

aan die lede van alle bevolkingsgroepe, by wie daar drastiese veranderinge van hulle eetgewoontes en voedingspatrone voorkom, raad en leiding te gee op hierdie gebied.

Die werk van die skrywers wat ons hier publiseer, dek 'n baie wye veld en werp prikkelende lig op die belangrikste kliniese en akademiese probleme in hierdie verband. So byvoorbeeld kom die klassieke manier waarop diabetiese opmetings gedoen word—deur urine monsters na maaltye te ondersoek vir die teenwoordigheid van glikosurie—onder die soeklig. Verder word die betekenis en implikasies van diabetiese vaatsiektes in heroerwering geneem, die verband tussen diabetes en ystermetabolisme word ondersoek, diabetiese retinopatie word bespreek, en 'n poging word aangewend om die verband, indien enige, vas te stel tussen binyerfunksie en die voorkoms van diabetiese vaatsiekte—soos dit voorkom by die verskillende rassegroepe. Behandelingsmetodes vir verskillende soorte en kategorieë van pasiënte word ook in besonderhede bespreek.

Of ons in die geheel saamstem met al die bevindings van die verskillende skrywers, maak nie saak nie. Hoofsaak is dat aan ons 'n magdom van interessante kliniese materiaal beskikbaar gestel word oor alle moontlike aspekte van die diabetiese sindroom soos dit prakties voorkom by ons gekleurde bevolkingsgroepe. Ook is dit bemoedigend om te sien dat die suiwer kliniese benadering tot 'n probleem soos diabetes nog nie uitgedien is nie; trouens dat waarneming en serebrasie nog nie onderhorig geword het aan tegniese toetse nie. Vir die medisyne in die algemeen, om staande te bly in hierdie eeu van tegniese spesialisasie, is dit 'n waardevolle les.