DIABETES MELLITUS IN THE NEGRO RACE*

By I. I. Lemann, M.D.,
New Orleans, La.

I have been led to make the present study of the incidence of diabetes mellitus among the negroes for several reasons. In the first place, the study of the peculiarities of this race and its susceptibility to various diseases is of scientific and economic importance to the South and to the Nation. Slowly through accumulated contributions of Southern medical men during the past half century, we have gained a vast fund of information concerning the negro's weakness and his dangers to himself and to the rest of the population. Anything that serves to complete our study of this race adds to our ability to conserve its powers and to reduce the danger which it represents as a reservoir from which disease spreads.

Secondly, the study of any racial susceptibility to a given disease is of particular value from the point of view of etiology. The comparative study of incidence in several races may well furnish some clue to the cause of the disease. This comparative study becomes all the more valuable when the race studied differs not only in physical make-up, but also in mental and moral habits from the other people by whose side it is living. There is probably no disease in which such an examination of relative incidence should prove as profitable as in diabetes mellitus, for in no disease do racial characteristics seem to play so important a role. Its greater prevalence among the Jews, for example, has long been a matter of note. It is not too much to hope that increasing knowledge along these lines may eventually assist in the solution of the mystery of the cause of the disease.

Formerly it was supposed that diabetes was comparatively rare in the negro race. About ten years ago, from a study of the statistics of the Charity Hospital, 1898-1909, I was able to show that the relative incidence was greater in the whites than in the negroes: .72 per M for the former against .47 per M for the latter. The negroes furnished 40 per cent of the admissions, but only 30 per cent of the diabetics.

TABLE I.
DIABETES MELLITUS IN CHARITY HOSPITAL, 1898-1909.

Year	White Cases	Negro Cases	White Admiss.	Negro Admiss.	Total Admitted
1898	2	3	4,788	2,996	7,784
1899	5	0	5,068	3,412	8,480
1900	4	0	4,614	3,114	7,728
1901	7	3	4,657	3,068	7,725
1902	7	2	4,928	3,248	8,176
1903	6	3	4,767	3,434	8,201
1904	2	0	5,300	3,299	8,689
1905	2	1	5,091	3,321	8,412
1906	1	0	5,027	3,425	8,452
1907	4	3	5,294	3,556	8,850
1908	3	2	5,874	3,666	9,540
1909	2	2	5,850	3,726	9,576
	45	19	61,298	40,265	101,565

White, .72 per M: negro, .47 per M. White and negro. .63 per M.
Percentage of diabetics: white, 70: negroes, 30.
Percentage of admissions: white, 60: negro, 40.

Such a difference, however, hardly warrants the conclusion that diabetes is rare among the negroes. In another series taken from the Out-Patient Medical Clinic of the Touro Infirmary at that time, there were 3 cases of diabetes in 2,265 whites, or 1.3 per M, and 5 cases of diabetes in 3,138 negroes, or 1.5 per M. The negroes were 58 per cent of the series and furnished 62 per cent of the diabetics. There is another factor to be taken into consideration in judging these figures, namely, the social position of the patients. These patients were all poor, whereas diabetes is notoriously a disease of the well-to-do. Von Norden[1] remarked:

"In Berlin the absolute number of cases in the upper ten thousand is greater than in the lower hundred thousand and the same proportion is said to exist in London. In other words, wealth and culture increase the liability tenfold."

The negroes belong practically entirely to the lower classes, hence the hospital figures represent probably the total incidence among them, while, on the other hand, the hospital statistics covering only poor whites do not represent the total incidence for the whites. What the liability of the negroes would be if their mode of living were changed, we do not know. However. their relative liability, the factor to be attributed to race and not to poverty, may justly be estimated when comparison is made between poor whites and poor negroes; hence I consider the hospital records a fair and trustworthy guide. A recent

*Read in Section on Medicine, Southern Medical Association, Fourteenth Annual Meeting, Louisville, Ky., Nov. 15-18, 1920.

analysis of the Charity Hospital reports for the subsequent period, 1910-1919, has confirmed the impression obtained ten years ago in a remarkably accurate way and has added, at least, the very valuable evidence that the increase in diabetes has fallen upon both races with practically equal force.

TABLE II.
DIABETES MELLITUS IN CHARITY HOSPITAL, 1910-1919.

Year	White Cases	Negro Cases	White Admiss.	Negro Admiss.	Total Admitted
1910	11	0	6,719	4,594	11,313
1911	20	7	7,314	4,906	12,220
1912	15	5	7,838	5,145	12,983
1913	5	8	8,405	5,944	14,349
1914	19	9	9,700	7,042	16,742
1915	8	7	9,897	7,926	17,823
1916	21	11	10,111	8,540	18,651
1917	13	9	10,908	8,686	19,651
1918	15	4	11,359	7,862	19,221
1919	8	4	9,789	7,359	17,148
	135	59	92,040	68,004	160,044

White, 1.4 per M; negro, .86 per M. White and negro, 1.2 per M.
Percentage of diabetics: white, 70; negro, 30.
Percentage of admissions: white, 57; negro, 43.

Again the negroes have been 43 per cent of the admissions and have furnished 30 per cent of the diabetes as contrasted with 40 per cent of the admissions and 30 per cent of the diabetes in the former period. The total incidence of diabetes has risen from 64 cases in 101,565 admissions in the first period to 194 cases in 160,044 admissions in the second period. This represents an increase from .63 per M in 1898-1909 to 1.2 per M in 1910-1919, or an increase of 90 per cent. The incidence among the whites rose from .72 per M to 1.4 per M, or 94 per cent; that among the negroes rose from .47 per M to .86 per M, or 83 per cent.

TABLE III.
INCREASE IN DIABETES MELLITUS AT CHARITY HOSPITAL

0.63 per M.	Total incidence	1898-1909	
1.20 per M.	Total incidence	1910-1919	90% +
0.72 per M.	White incidence	1898-1909	
1.40 per M.	White incidence	1910-1919	94% +
0.46 per M.	Negro incidence	1898-1909	
0.83 per M.	Negro incidence	1910-1919	83% +

Hence it is fair to say that whatever influences have contributed to the increase of diabetes, noted by Joslin and other observers, have affected white and negro alike and the latter has shown no especial immunity to the operation of their forces.

The wealth of material of syphilis in Charity Hospital makes it worth while to analyze these figures from this point of view. Warthin[2] considers that syphilis plays an important role in the production of diabetes. He has written that:

"Diabetes may be associated with the more marked degrees of syphilitic pancreatitis; and in our autopsy service all of our diabetic cases have been so associated; but that a number of cases of syphilitic pancreatitis of similar degree of severity have not presented the clinical symptoms of diabetes. It seems very probable, therefore, that latent syphilis is the chief factor in the production of the form of pancreatitis most frequently associated with diabetes, but that diabetes is not always associated with severe degrees of this type of pancreatitis."

If this contention be correct, we should find diabetes more common where syphilis is more prevalent. The syphilization of the negroes is a matter of common notice and its importance is not difficult to prove from the occurrence of conditions which find their basis in syphilis. But diabetes is not more but less common among the negroes than among the whites. The negro portion of the admissions is roughly 40 per cent, the negro portion of diabetes is 30 per cent, but the negro portion of such diseases as syphilitic iritis, gumma of the brain, gumma of the liver, aneurysm of the aorta, is 60 and 70 per cent. The negro portion of all cases of acquired syphilis is 56 per cent and of congenital syphilis 52 per cent.

TABLE IV.
CHARITY HOSPITAL, 1910-1919

	Whites	Per Ct.	Negroes	Per Ct.
Admissions	92,010	57	68,004	43
Diabetes	135	70	59	30
Aneurysm of Aorta	107	30	244	70
Acquired Syphilis	2,785	44	3,484	56
Congenital Syphilis	175	48	183	52
"Gumma of Brain"	82	41	115	59
Gumma of Liver	11	40	16	60
Syphilitic Iritis	50	35	93	65
Locomotor Ataxia	129	80	81	20

If syphilitic pancreatitis is the chief or even a frequent factor in the production of diabetes, it is strange that we do not see an abundance of diabetes in the negro services of the Charity Hospital which are so rich in all other luetic phenomena.

It is fair, I think, to conclude that syphilis is playing no important part in producing diabetes. This, however, is very different from saying that syphilitic pancreatitis does not at times produce diabetes.

Attention has been drawn time and time again to the effect of nervous influences in the production of diabetes. Nervous strain, intense application to business, mental shock and worry have frequently

seemed to play an important role, at least in precipitating the phenomena of the disease or aggravating it. The negro race is to a very great degree free from these influences. The average individual is happy-go-lucky, living from hand to mouth and from day to day, without great responsibilities and without great ambitions which carry with them great cares. I do not mean that the race is without the finer sensibilities, but that its nervous burden is light and its nervous toll is small aside from the ravages of lues. The mental and nervous make-up of the negro is in marked contrast to that of the Jews, among whom diabetes is disproportionately frequent.

BIBLIOGRAPHY

Von Norden: Article, "Diabetes Mellitus," Twentieth Century Practice.
Warthin & Wilson: American Journal Medical Science, August, 1916, clii 157.

DISCUSSION

Dr. E. B. Bradley, Lexington, Ky.—My impression was that diabetes in the negro is exceedingly rare. In Lexington we have quite a number of negroes, but during the past ten or twelve years in private and hospital practice I can recall only one case of diabetes in this race. However, this does not mean that the incidence of this disease may not be as great with us as in New Orleans; for the number of negroes treated in my experience has not been very large. As I have said, I have seen only one case of diabetes in the negro and that was in a mulatto. I have not seen a case of locomotor ataxia in a negro. One of our leading neurologists tells me that he has seen but one case of locomotor ataxia in a negro in thirty-five years' experience. Our impression has been that diabetes in the negro race is exceedingly rare. If we consider only the white patients seen in hospital practice, we should think it very rare among them also, especially in a small city like Lexington, where there are practically no Jews. The incidence of diabetes in private practice is rather large.

Knowing that many cases of diabetes acquire tuberculosis I questioned two of our Lexington physicians who have had charge of a tuberculosis dispensary for some years in regard to this matter, and they did not remember ever having seen a case of diabetes in a negro.

It has surprised me not a little to know that diabetes does occur in the negro about as often as in the white in hospital practice.

Dr. G. Canby Robinson, Nashville, Tenn.—This paper opens up a very broad problem that may be of considerable interest in the future and it is now in its infancy, namely, the relation of anthropology to medicine. Dr. Draper, of New York, has been very much interested in the relation of types of individuals to the diseases to which they seem to be liable. His attention was called to this matter in studying a large number of children with poliomyelitis. He was impressed with the fact that there was a certain type of child that was liable to become infected with poliomyelitis, while another type of child was not so liable. Dr. Draper has gone on with this study and has investigated, for instance, tabes. He believes a certain type of individual, which he can determine by anthropological study, is liable to the development of tabes, while others are not. That may have some bearing on this problem. I bring it up as a suggestion, and it is a point well worth studying whether there is some relation between the type of individual and the disease that that type of individual is liable to have.

Dr. J. B. McElroy, Memphis, Tenn.—My practice for twenty-five years has been largely confined to negroes, the first ten years almost entirely in the Delta. I recall one case of diabetic coma in an old negro, although I do not recall any other cases in that practice. There may have been many more.

In our Memphis General Hospital we have a large entrance of negro patients and the incidence of diabetes here is also very rare.

Dr. Mary Freeman, Jacksonville, Fla.—I should like to ask the author of the paper whether there was a great deal of admixture of white blood in the darkies in whom he noticed diabetes. As far as my observation goes, black negroes stand shock and accident better than the lighter ones. I have not as yet seen a black negro who showed any high degree of nervousness, no matter what ailed him. But the more white blood they have, the more nervous they become. I wonder if that has anything to do with it.

Dr. O. R. Miller, Louisville, Ky.—I should like to ask Dr. Lemann whether these cases were true diabetes or not, whether some of them may not have been cases of transient glycosuria?

Dr. E. H. Martin, Hot Springs, Ark.—I do not think that there has been enough stress laid on the diet by the essayist. For a great many years I practiced on a large plantation near the location Dr. McElroy described and almost exclusively on negroes. There were at least five thousand negroes in my territory, but I can only recall two or three cases of glycosuria in twelve years' time. These negroes lived on the usual "rations," corn meal, fat meat and molasses, and used a large proportion of green vegetables. It may be that in New Orleans they have more to eat and less open air exercise. It may be a question of nervousness, but it is more likely a question of food. Diabetes is very common among the Jews of America, but is there as large a proportion of diabetic cases in parts of Europe where the Jews are not so well fed? They are noted for being hearty eaters and good livers in this country, but they are also noted for being a very nervous race. I have investigated a number of these cases as to the possibility of syphilis of the liver or pancreas as a cause of glycosuria. In the absence of history or positive blood reactions they were given anti-syphilitic treatment. The result has been quite disappointing although in a few cases the glycosuria disappeared so promptly after the administration of arsphenamin that I was compelled to believe these particular cases to be syphilis of the pan-

creas, but after all I think the exciting cause in most cases is the amount of carbohydrates ingested and the amount of over-eating of all kinds that is done. The negroes probably will produce as high a proportion of diabetics when they live as the white people do.

Dr. Lemann (closing).—I shall try, in the first place, to answer the questions that have been asked. Of course, the 59 cases of diabetes were not entirely in my service, so that I can not state positively they were all of pure race. But I have observed repeatedly diabetes in pure jet-black negroes.

I would like to answer the question as to the possibility of these cases not being true diabetes mellitus, but simply transient glycosurias. Since the cases are not all of my own observation, I can not of course vouch for the accuracy of all the diagnoses, but I might say the figures confirm my own impressions. It would be much more likely for a diagnosis of diabetes to be missed in a general hospital than for a diagnosis of it to be made when the disease did not actually exist. One must take into consideration what one means by transient glycosuria. I think every one who has had a large experience with diabetes must agree with the viewpoint of Joslin, namely, that any one who has through a fairly prolonged period a glycosuria which will disappear is to be regarded as a diabetic, or, at least, as a potential diabetic. In other words, I think these figures are fair as to the incidence of diabetes among the negroes as they come to the Charity Hospital, and they represent the incidence of diabetes in pure jet-blacks.

As to the influence of diet and food and mode of living, I purposely omitted that phase of the subject in order to make my paper short and to make it bear directly upon the matter of incidence. I may say in reply to Dr. Martin that the incidence of diabetes among Jews, where they are not so well fed as they are in America, still shows a preponderance of diabetes in that race.

A study of modern diabetes has shown that it exists much more among the poorly-fed Jews than the poorly-fed people among whom they live, and it is my impression, and I think it is fairly well accepted, that among those who have studied diabetes it is not so much a question of the high living of the Jews as it is some racial make-up which makes diabetes more prevalent among them. I would not deny the effect of diet. In that connection I think every one has had the experience of seeing some of the worst cases of diabetes among people who can never be accused of living very high. One of the worst cases of diabetes I have ever seen was a poor Mississippi farmer who had never lived well nor been fat.

In a former paper I called attention to the effect of the rations of the negro upon the incidence of diabetes. It is true, the negro does live largely upon carbohydrates. In the sugar district, in the grinding time, he will live to a large extent on sugar cane and upon corn meal, but as Naunyn has remarked, those people who live largely upon carbohydrates are not particularly prone to diabetes.

I wish to conclude my remarks by emphasizing the points I tried to bring out. First, syphilis is not playing an important role in the production of diabetes. Second, that whatever it is that is causing an increase in diabetes, which is well known the world over, is acting at the same time in the same porportion among the negroes as it is among the whites.