DISCUSSION

It is generally accepted that the action of tuberculin in asthma is non-specific to the extent at least that there is no suggestion that the asthmatic state is the result of a tuberculous infection. Van Leeuwen,⁴ whose great experience of this line of treatment must be admitted, originally selected this substance to produce a "reaction" because he noticed that the great majority of his asthmatic patients exhibited positive skin reactions to tuberculin, and he appears still to employ the skin sensitivity as a test for the suitability of the patient for treatment. On the other hand, Simpson and Stone² reported benefit from tuberculin in a series of nine cases, not one of which reacted positively to the cutaneous test. Again, the present writer³ found that the proportion of asthmatic cases sensitive to the intradermal test agreed closely with the result obtained in a series of normal healthy adults, and that the proportion of successes was actually greater in those patients who did not react to tuberculin. On consideration of the whole of the present series of 103 cases it is found that no fewer than fifty-seven exhibited no reaction to the Mantoux test, twenty-five gave a moderate reaction, and the result in the remaining twenty-one was strongly positive. In none of the cases in this series was there any evidence of active tuberculosis.

The results of treatment in the two groups show clearly that the original sensitiveness of the patient does not affect the response to treatment, for improvement has been found to result in forty-six out of the fifty-seven non-reactors and in thirty-one of the forty-six cases found to be tuberculin-sensitive. This result throws doubt on van Leeuwen's original premisses and leaves the rationale of the treatment obscure, but it would appear definitely to be non-specific in its action. With regard to the indications for the use of tuberculin in asthma it is impossible to lay down hard-and-fast rules. It has been found best to consider each case on its merits and carefully to assess the importance of the various factors which may contribute to the production of attacks in an individual predisposed to the condition. In all cases any local abnormality in the upper respiratory tract should be corrected as far as practicable, gastro-intestinal dysfunction should be relieved, and an attempt be made to assess the psychological state of the patient. In addition, by means of routine skin tests the presence of any sensitizing allergen in the habitual surroundings of the individual should be looked for. As well as the standard protein tests, examination of the sensitivity to dust collected from the patient's room may be carried out, and dust from the place of occupation is frequently worthy of investigation. If it be found that there is well-marked sensitiveness to a single avoidable protein, then tuberculin treatment may not be necessary; in all other cases, if the asthmatic state remains after the more elementary lines of treatment have been carried out, a course of tuberculin is a reasonable line of therapy to adopt.

It is frequently stated that the psychological effect of injections alone is sufficient to produce improvement in cases of asthma, and the proportion of asthmatics who exhibit some psychological abnormality is generally acknowledged to be high. In this series there were six patients in whom there was a marked neurotic element, and each of these is included among the complete failures; the more gross examples of this type therefore do not appear to be suitable for tuberculin treatment. In the secondary group of cases, in which there is an infection, often of long standing, in the respiratory tract, it may be preferable to adopt treatment by means of an autogenous vaccine. At times tuberculin may succeed when a vaccine has failed, and vice versa, but the results in the present

series are sufficiently satisfactory to encourage perseverance with tuberculin, which at times has been known to afford marked relief, even in severe cases. It is interesting to note that tuberculin does not appear to have any effect on the other allergic conditions so frequently present with asthma. Thus, although the chest condition may respond favourably, there is rarely coincident improvement in the commonly accompanying skin conditions. In no case of hay fever was any benefit noted, although many of the patients who responded well to treatment were also subject to this complaint.

Failure of treatment is easily recognized, and may be admitted if there is no improvement after two months. At the same time there does not appear to be any risk to the patient provided that a reasonable scheme of dosage is employed. It must be remembered that increase in the frequency and severity of attacks at any stage in the course may merely indicate that the dose is too high, and with suitable reduction unexpected success may be attained. The commonest apparent causes of failure in the present series have been overdosage, premature termination of the course, and marked psychological abnormality of the patient. Two of these causes can be to a large extent controlled, so that it would appear possible that with further experience improvement in results may be anticipated.

SUMMARY

The series of thirty-six cases of asthma treated by tuberculin described in 1930 has been followed up, and the present state of the patients is recorded. There has been a tendency to relapse, so that the present results are less encouraging than those previously reported. The cases treated subsequently, up to and including 1931, are added, bringing the total treated to 103. Dosage and indications are discussed, and it is concluded that the method yields results which, although less promising than they appeared to be at first, are still sufficiently good to warrant a trial of tuberculin in all apparently suitable cases.

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TEMPORARY VISUAL DISTURBANCE AS AN INITIAL SYMPTOM OF DIABETES MELLITUS

BY

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Disturbances of vision in diabetes mellitus are traditionally associated with organic changes in the eyeball, giving rise to such gross and progressive lesions as those of cataract and retinitis. For a considerable time, however, it has been recognized¹ that symptoms of a temporary nature occur in this disease, which are referable to functional ocular disturbances manifesting themselves as changes in refraction. Duke-Elder² reported three cases, collected forty-five cases from the literature, and discussed the mechanism by which the symptoms arose. He was able to correlate the changes in refraction in his own and some of the collected cases with changes in the blood sugar, showing that a rise produced myopia and a fall hypermetropia. He came to the conclusion that alteration in the blood sugar level, by changing the concentration of crystalloids in the ocular fluids, induced temporary osmotic changes in the lens, with corresponding

changes in its index of refraction. Recently Greeves³ has reported in detail two other cases. Both these authors lay stress on the rarity of the condition. The reverse, however, has been our experience. Temporary visual disturbances, apparently referable to changes in refraction, have occurred as an initial symptom in 34 per cent. of our cases of diabetes. These divergent views on the incidence of the condition can probably be explained by the observation that, whilst these visual disturbances are transient and rarely disturbing, the other symptoms of diabetes are persistent and unpleasantly obtrusive. The diabetic, therefore, tends to consult the physician rather than the ophthalmologist, and also tends to give a history exclusively concerned with his more insistent and unpleasant sensations. These are often sufficiently suggestive to enable the physician to make a provisional diagnosis, with the result that further symptoms are not sought after. But one has only to ask the patient if "his sight has been troubling him" to receive in many cases an affirmative answer and a spontaneous description of temporary visual disturbance, which is sufficiently distinct to dispel any doubts as to its occurrence.

It must be stressed that it is with temporary visual disturbance occurring as an *initial* symptom of diabetes that we are concerned, as disturbances of a similar nature following the use of insulin are well known.⁴ It is the object of this communication to demonstrate the frequent occurrence of this condition and to point out its valuable significance to the physician, and we do not attempt to present a detailed account of the ocular changes which must, necessarily, be left for investigation by the ophthalmologist.

TYPICAL CASE HISTORIES

The history of the onset of diabetes usually obtained from a patient is that he became thirsty, and noticed that he was getting up at night to pass water. About the same time his vision became impaired, but returned to normal after a short period. This period may last anything from two or three days to two or three weeks, depending to some extent on whether the condition was treated or not. Under mild treatment, such as qualitative restriction of the diet, the condition disappears rapidly, but, even when the disease is neglected, the disability always gradually passes away.

The following are typical descriptions of the visual symptoms given by patients already wearing glasses. Previously the patients had glasses fitted for long and short distance; now their short-distance glasses are useless, but they can see to read with their long-distance ones. Others complain that they have obtained spectacles which enabled them to see quite well for a few days, but that the spectacles then became useless, were taken back to the optician, changed, and then, to the patient's annoyance, the history repeated itself. Another complains that his own glasses no longer suit him, but that he has fortunately obtained those belonging to some relative, and can see perfectly. Some report that they have been wearing glasses for reading, but now they can see print without them, although distant objects have become indistinct. In patients who have not been previously fitted with spectacles the reports are less precise. The general complaint is of blurring of vision. Some say that they cannot see to do near work. One, a steel engraver, had temporarily to cease work as he could not see his lines; a second could not see to do crochet work for a week; many state that they were unable to read. The majority complain of disturbance of long vision alone, remembering some characteristic failing such as inability to distinguish the time by the church clock.

It will be seen that the symptoms complained of by patients already wearing spectacles, and those disturbances of long vision noted by subjects with hitherto

normal sight, can be referred to disturbances of refraction. In the smaller group of diabetics who complain of disturbances of near vision and who have not previously required spectacles, the same explanation is tenable, but it is impossible to exclude the possibility that the symptoms may have been produced by fatigue of the power of accommodation. All cases, however, had this in common—namely, that *the derangement of vision was only temporary*.

The symptom has never been noted in the absence of marked glycosuria, and is usually, though not invariably, associated with one or more of the classical symptoms of diabetes. It is found as an initial phenomenon, disappears rapidly under treatment, and does not occur when the patient is in a satisfactory state of balance. In two patients it has been observed to recur with an exacerbation of the disease after unauthorized cessation of insulin and dietary regime. It is worthy of note that the symptom has never been reported in cases of glycosuria which, on investigation, have been found not to be cases of diabetes, and that in eight proved cases of renal glycosuria it was also absent.

A SURVEY OF RECORDS

The 100 cases of diabetes mellitus reported here were seen during the last two years at the Diabetic Clinic, University College Hospital, and each patient at the time of admission to the clinic was specifically examined for disturbances of vision. In each case the eyes were examined by the retinoscope and the ophthalmoscope. All patients showing gross organic damage such as cataract, retinitis, haemorrhages into the vitreous, etc., were excluded, but otherwise the cases form a consecutive series. In each case the occurrence of temporary visual symptoms has, in reply to a specific question, either been denied or affirmed and described. The existence of conjunctivitis at the time of the symptoms has been ruled out by inquiry into the history. The age of the patients on admission varied from 12 to 80 years, and the age at which diabetes had appeared varied from 7 to 74 years. The youngest patient in whom these symptoms were noted was aged 22, the oldest 63. The cases are considered in two age groups: those under 45 years and those of 45 years and over. This is in accordance with the recognized increased severity of the disease in young people. It will be seen from the table that in the first age group a history of temporary visual disturbance was given in 49 per cent. of the cases, and in the second age group in 21 per cent. of cases. The condition is therefore common, occurring in 34 per cent. of the total number of diabetics.

Age Groups in which Diabetes Appeared.	No. of Cases.	Cases with Temporary Visual Disturbance.		Cases Requiring Insulin.	
		Number.	Per cent.	Number.	Per cent.
Under 45 years ...	47	23	49	44	94
45 years and over ...	53	11	21	28	53
All ages ...	100	34	34	72	72

If we take the necessity for insulin as an indication of the severity of the disease it will be seen that in the first group insulin is required in 94 per cent. of cases, and in the second group in 53 per cent. Of the twenty-three cases with visual disturbance occurring in the forty-seven patients under 45 years, only one is not now taking insulin; of the eleven cases found amongst the fifty-three patients of 45 years and over, four are not taking insulin. Thus the symptom itself does not indicate that insulin will be required—that is, it is not an indication of the ultimate severity of the disease as judged by reaction to treatment.

The visual disturbances may, however, be related to the rate at which the diabetic process develops. The disease tends to have a rapid onset in young patients and an insidious one in the old. The symptom is commoner in young than in old diabetics, and occurs at the onset of the disease.

The greatest importance of the symptom is, in our opinion, from the point of view of diagnosis. The evidence brought forward by Duke-Elder² points strongly to the conclusion that the disturbance depends upon change in the blood sugar level. In one of his cases, observed for six months, a rise of blood sugar was associated with myopia, and a fall with hypermetropia. In three of our cases a similar sequence of events occurred. At the onset thirst, polyuria, and impairment of vision were noted; in the space of a week or so the visual symptoms disappeared, but glycosuria and thirst still persisted. The patient was then brought rapidly under control with insulin and diet, and, although the urine became free of ketone bodies and intermittently clear of sugar, impaired vision was again complained of, only to disappear in the space of a few days, when the patient became more nearly balanced. The first appearance of visual disturbances was associated with glycosuria, the second with the urine becoming sugar-free. Applying Duke-Elder's observations it appears probable that the initial derangement of vision accompanied an abnormal rise of blood

sugar and the second derangement a fall. A persistent excess of sugar in the blood is diagnostic of diabetes. The importance, therefore, of this *initial* temporary disturbance of vision is that it is a clinical indication of this abnormal degree of hyperglycaemia, and as such provides information that could not otherwise be gained save in the laboratory by the complicated procedure of blood-sugar estimations.

SIGNIFICANCE OF THE CONDITION

This initial symptom in association with glycosuria is therefore proof that the latter is due to true diabetes and not to other causes of glycosuria, renal or otherwise. It is almost permissible, further, to conclude that such rapid changes of refraction are in themselves sufficient for the diagnosis of diabetes mellitus, though that deduction could not be securely accepted unless it were fully proved by many observers that similar visual symptoms are never found in other diseases. But, putting aside that possible refinement of early diagnosis, it should be the invariable rule to suspect diabetes and test the urine for sugar in all patients, especially the young, who complain of these brief disturbances of vision, even when such may be their sole complaint.

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THE GENERAL PRACTITIONER'S APPROACH TO HIS NERVOUS OR MENTAL PATIENTS *

BY

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The thesis of this paper is that the general practitioner's attitude to his nervous or mental cases should be the attitude of the medical man to his patient, neither more nor less. The physician who sees in his patient an individual in need of help, whose distress or incapacity he is called on to relieve by his technical skill or advice, need adopt no special attitude towards him because he happens to be classified as nervous or mental. He will deal with the patient's symptoms as a biological problem requiring a study of the patient's adaptation to his social environment.

Some physicians may hesitate to accept quite such a wide view of their responsibility. They may claim that their task is to deal with symptoms and with the underlying disease process. They may maintain a somewhat detached attitude towards the individual, whose personality they may look upon as irrelevant to the special technical problem. The patient for such a worker may be the more or less incidental container of an interesting biochemical, physiological, or bacteriological situation. Such an attitude is a continuation into the practice of medicine of the attitude of the laboratory worker, who, in dealing with the fundamental problems of medical science, is accustomed to make the conditions of the experiment as simple as possible. Even in the laboratory the investigator may find that he has concentrated too exclusively on the isolated system; he may find it necessary to reintroduce factors which he had provisionally discarded. Thus variations in the nutrition of laboratory animals, attributed to variations in diet or to experimental interference with certain glands, may have a partial explanation in the conditions of life of the animals in the experimental cages. Nor can the variations in the personality of experimental animals be ignored (Pavlov¹).

The specialist is apt to bring to the consultation room

the attitude of the research laboratory and to confine himself to the strict and painstaking investigation of the special functions involved. This may be justifiable where he has been asked to examine a special organ or system by technical methods, and not to determine what part is played in the total situation by the special system or organ under consideration. In general, however, the problem is not so strictly formulated, and in the consultation room of the specialist the practical bearing of the special findings on the complaint of the patient is as a rule evaluated. In the usual medical situation there is no such demand for a purely impersonal estimate of this or that function. The role of the physician is to deal with the practical situation of a handicapped individual. The unqualified zeal of the investigator may sometimes interfere with treatment. The primary task of the physician is not the satisfaction of curiosity nor the promotion of knowledge, but the restoration of the patient to normal efficiency, in so far as that depends upon the technical information and skill of the physician. For this purpose it is not sufficient to study in detail the behaviour of the various organs in response to the various demands upon them. It is also important to study the reaction of the patient to the different demands which life makes upon him.

To understand the behaviour of the patient the practitioner must know something of the complex psychological mechanisms, and he must also be somewhat sensitive to the various demands made upon the individual by the environment. He must know something of the past experiences which have conditioned the patient and given him his special outlook and his special type of reaction; he must not neglect the present situation with its actual stresses; he must realize to what an extent, beneath the conscious life of the cultured individual, there persist crude desires, irrational fantasies, and disturbing memories. The physician who pays attention to the emotional experiences of the patient is dealing with concrete biological facts. An emotion is not a detached unit existing in a rare psychological medium; it is a personal experience, the subjective aspect of which is familiar to all, while the detailed physiological concomitants have been slowly worked out by such investigators as Cannon. The study of the emotions shows

* Read in the Section of Mental Disorder at the Centenary Meeting of the British Medical Association, London, 1932.