TREATMENT IN GENERAL PRACTICE

This article is one of a series on the management of some of the metabolic diseases met with in general practice. The first group of articles on Treatment in General Practice, thirty-five in number, was republished in book form last March by H. K. Lewis & Co., and a second volume will appear in the autumn.

MANAGEMENT OF DIABETES MELLITUS

BY

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PART II

Hypoglycaemic Attacks

The symptoms due to excessive insulin action are protean in their manifestations, the one point they possess in common being that they are peculiar sensations which tend to occur at a definite time each day. Exercise enhances the action of insulin so that attacks may be due to an unusual degree of exercise, a reduction of the food intake, or an excessive dose of insulin. The two former causes can be elicited from the history and suitably corrected; the latter requires more detailed consideration.

For hypoglycaemic attacks during balancing the next higher calorie diet should be given; attacks in the balanced patient, whose urine is sugar-free, should be treated by reducing each dose of insulin by 5 units, continuing such reductions until the attacks cease. Then, if sugar has reappeared, cautiously increase the insulin, one dose at a time, until the sugar disappears or is present only in small amounts (green reduction of Benedict's solution).

Should attacks appear in a patient who is receiving his full diet, and yet whose urine always contains sugar, increase the time interval between the insulin injections and the meal. Often this will clear the urine of sugar and stop the attacks. Often patients are encountered whom it is impossible to render sugar-free without precipitating hypoglycaemic attacks. In such cases the dose of insulin should be maintained as high as possible short of causing attacks, and the glycosuria may be disregarded. So long as these patients are acetone-free they may pass sugar continuously without coming to any harm. Instruct every diabetic to carry three lumps of sugar, and to take these on the first appearance of symptoms of hypoglycaemia.

Routine Care

Once the diabetic has been balanced he passes into the stage of routine care. He should be seen two or three times at fortnightly intervals; then, if his condition is satisfactory, at monthly intervals; and finally, if he is securely balanced, at intervals of two or even three months. Such long intervals between visits are permissible provided it has been impressed upon the patient that if he ever feels ill he must at once call in the doctor. At each visit the patient should bring for examination two specimens of urine, the one passed half an hour before and the other two hours after breakfast.

Treatment at this stage has four main objects:

1. The early detection and treatment of exacerbations of the disease.
2. The further adjustment, when necessary, of diet and insulin.
3. The anticipation and prevention of deterioration of the patient's condition.
4. The care of the general health.

Exacerbations of the disease manifest themselves early by a change in the urine picture. The first sign is the reappearance of, or increase in the degree of, glycosuria in the after-breakfast specimen of urine. Later the same change is seen in the before-breakfast urine. If the exacerbation is serious acetonuria follows, and usually appears first in the specimen collected before breakfast. Provided glycosuria alone is in evidence there is no immediate danger. The patient should be seen more frequently, and the insulin increased in the same manner as in the later stages of balancing until the urine picture is again satisfactory. But should acetone appear the patient should be seen every other day, and at every visit each dose of insulin must be increased by 5 units until acetone disappears. The glycosuria should then be cleared as outlined above.

Adjustment of the insulin dosage is often necessary shortly after balancing. It has been noted that at this point some specimens of urine still contain sugar—a safeguard against the hypoglycaemic attacks which may occur in the balanced patient when insulin action is enhanced by increased exercise. When the urine specimens are found clear of sugar at any of the routine visits, reduce the dose of insulin by 5 units. Continue this reduction, keeping the breakfast dose slightly larger than the evening dose, until sugar reappears. Then increase insulin cautiously until the urine is just cleared of sugar. In this way hypoglycaemic attacks will be avoided.

Adjustment of the diet is involved in the third object of treatment—the prevention of deterioration. It is a general clinical impression that if a diabetic gets fat his condition deteriorates. The patient should keep a record of his weight, and the physician should discover from the appropriate tables the normal weight for a person of his height and age. If the weight exceeds this figure the diet should be reduced, but if the weight is below normal a higher calorie diet can be allowed. For women past the menopause this is often a counsel of perfection, but if in these cases the weight cannot be reduced it should not be permitted to increase.

Certain mild cases not requiring insulin will be found to remain consistently sugar-free, and the dietetic restrictions may here be justifiably relaxed. Begin by allowing the patient to eat as much protein and fat as he desires; later add carbohydrate slowly to the diet.

With regard to the general health the practitioner's main concern is the detection of sepsis. Sepsis has a markedly deleterious effect upon diabetics. If a diabetic feels ill when he is receiving his full complement of calories, or if the urine picture shows a sequence of exacerbations, then some condition other than diabetes is present. Pulmonary tuberculosis must be excluded, and pyorrhoea, sinus infection, etc., sought for and, if present, treated. Middle-aged and elderly diabetics should be acquainted with the early signs of gangrene, instructed how to care for their feet, and told to report immediately should any untoward symptoms or signs appear in the feet.

Management in Intercurrent Illness

Infection causes rapid, but often temporary, deterioration in the diabetic's condition, and if the infection is of any severity acetonuria appears. The golden rules for

Diet 5.—Invalid Diet

DIET A				DIET B			
Weight in Grams				Weight in Grams			
	Carbohydrates	Proteins	Fats		Carbohydrates	Proteins	Fats
BREAKFAST				BREAKFAST			
Bread and milk—				Bread 2 oz.	30	2	—
Bread 1 oz.	15	1	—	Butter ½ oz.	—	—	6½
Milk 6 oz.	9	6	6	Milk 5 oz.	7½	5	5
Sugar 1 level teaspoonful	5	—	—	Tea or coffee; sugar 1 lump or 1 level teaspoonful, 1 egg if desired	5	—	—
Tea with milk 2 oz.	3	2	2				
	32	9	8		42½	7	14
MID-MORNING							
Lemonade—							
Lemon juice and water; sugar 2 level teaspoonfuls	10	—	—				
DINNER (a)				DINNER			
Egg flip—				Fish 2 oz., in	10	—	—
Milk 8 oz.	12	8	8	Milk 1 oz.	1½	1	1
1 egg	—	6	5	Potatoes 3 oz.	18	1½	—
Sugar 1 level teaspoonful	5	—	—	Cereal pudding—			
3 cream crackers	15	—	—	Rice or other cereal ½ oz., milk 7 oz.	23	7	7
Or	32	14	13	Or			
DINNER (b)				Bread pudding—			
Bovril, oxo, beef tea, clear soup ...	—	—	—	Bread 1 oz., ½ egg, milk 5 oz., saccharin			
2 cream crackers	10	—	—				
Cereal pudding—							
Rice ½ oz., milk 7 oz.	23	7	7				
	33	7	7		52½	9½	8
2 P.M.							
Lemonade as at mid-morning	10	—	—				
TEA				TEA			
Tea with milk 2 oz.	3	2	2	Tea with milk 2 oz.	3	2	2
Bread 1 oz.	15	1	—	Bread 1 oz.	15	1	—
Butter ½ oz.	—	—	6½	Butter, ½ oz.	—	—	6½
	18	3	8½		18	3	8½
SUPPER (a)				SUPPER			
Ovaltine or Horlick's ½ oz., or Benger's ½ oz.	10½	2	1	Milk 7 oz.	10½	7	7
Milk 6 oz.	9	6	6	Bread 1½ oz.	26	1½	—
Bread 1 oz.	15	1	—	Butter ½ oz.	—	—	6½
Butter ½ oz.	—	—	6½	Orange or apple 3 oz.	6	—	—
Or	34½	9	13½		42½	8½	13½
SUPPER (b)							
Bread and milk—							
Bread 1½ oz.	18	1	—				
Milk 6 oz.	9	6	6				
Sugar 1 level teaspoonful	5	—	—				
	32	7	6				
9 P.M.							
Lemonade as at mid-morning	10	—	—				
Total Weight in Grams	145	26	29½	Total Weight in Grams	155½	28	44

controlling diabetes during an intercurrent illness are to keep the urine always absolutely free of acetone and to treat the sepsis as quickly as possible. To abolish the increased production of acetone more carbohydrate must be utilized, and to achieve this end usually more insulin and often more carbohydrate is required.

Mild Illnesses

From the diabetic point of view a mild illness is one in which the patient can eat an invalid diet, as in influenza and mild gastro-enteritis. An invalid diet such as Diet No. 5 should be prescribed, and the urine tested frequently. If insulin is being taken the daily dose should be split into three parts, and a dose given before each of the three main meals. If acetonuria does not appear and the glycosuria remains moderate (green reduction), treatment is adequate; if the glycosuria is in large amounts (red and yellow reductions) the doses of insulin should be rapidly raised so as to prevent the development of acetonuria; if acetonuria develops despite these measures 50 grams of sugar (4½ oz. kia ora lemonade in half a pint of water, served ice-cold, is a convenient pre-

paration) and 20 units of insulin should be given mid-morning, mid-afternoon, and at midnight, in addition to the invalid diet and the usual three doses of insulin. Later, if necessary, the insulin is raised still further until acetonuria disappears. When with improvement the glycosuria begins to diminish the insulin dosage is rapidly lowered so that a trace of sugar is constantly kept in the urine.

Severe Acute Illness

A severe acute illness is one in which no definite dietetic regime can be followed—for example, pneumonia, post-operative states, etc. The patient is allowed to eat whatever he fancies, and 50 grams of sugar are taken at breakfast time, mid-afternoon, and midnight. If the patient does not usually require insulin, 15 units are now given with each dose of sugar; if he does usually require insulin, 25 units are injected with each dose. If acetonuria appears the insulin doses are raised, and, if necessary, extra doses of sugar and insulin are prescribed; if the glycosuria clears up the doses of insulin are lowered. Acid. hydrocyan. dil., 3 minims, may be taken with

advantage half an hour before each dose of sugar to lessen the tendency to vomit.

Should the patient vomit the food or sugar the stomach should be washed out, acid. hydrocyan. dil. given, and a further effort at oral administration made two hours later. If vomiting persists despite this the urine is watched closely, and on the appearance of acetone two pints of 7½ per cent. glucose in normal saline and 70 units of insulin are administered either subcutaneously or intravenously. This is repeated as often as acetonuria develops, attempts being made meanwhile to induce the patient to take food by mouth. By these means the diabetic can be controlled during any illness.

Mention may be made here of the pregnant diabetic. The great danger in these cases is a sudden ketosis, which is signalled by the rapid appearance of acetonuria. Test the urine frequently, and on the first appearance of ketosis institute treatment as for a mild intercurrent illness until acetonuria is abolished.

Finally, it will probably have been remarked that no mention has been made of blood-sugar estimations as a guide to treatment. It has been my experience that they are not only unnecessary, but also that the information they yield is insignificant compared with that which can be gained from testing a sequence of urine samples.

INTERNATIONAL CONFERENCE ON SOCIAL WORK

The third International Conference on Social Work (the first was held in Paris in 1928 and the second at Frankfurt in 1932) brought to London in the third week of July a large number of earnest folk, especially women, from every European country, the United States and the British Dominions, several countries of Latin America, and India and the Far East. The delegates numbered well over one thousand. The purpose of the conference was to constitute a forum for the exchange of experiences and impressions regarding the place of social services in the modern world—namely, services concerned with communal health, education and recreation, material welfare, social adjustment, and unemployment. It was a real conference, not a succession of set papers, and in one of the most popular of the sessions—that on recent changes in local community life—representatives of a dozen countries (Dr. LETITIA FAIRFIELD being the spokesman for Great Britain) sat round a table on a raised platform and for more than two hours conducted a conversation, which by means of microphones was made audible to the general assembly. The conference divided itself into five commissions, one of which dealt with health subjects, with Professor W. W. JAMESON as its chairman and Dr. HAZEMANN of France as rapporteur. The work of these commissions was presented in summary at a final meeting which was addressed by the Duke of Kent, patron of the conference.

Duty of the Community to the Cause of Health

A special session was organized by the Hospital Almoners' Association and discussed the duty of the community to the cause of health. The speakers were Dr. ERNEST BARKER, professor of political science of the University of Cambridge, and Miss ANTOINETTE CANNON of the New York School of Social Work.

Professor Ernest Barker made a strong plea (as did many other speakers in the course of the conference) for the maintenance of voluntary service in a free channel. There was no sphere of life, he said—whether education, health, or anything else—in which an Englishman would desire the State to be all in all. Least of all would he desire it in the service of health.

"We all like to physic ourselves a little, be it only the herbal remedies our mothers taught us to use. We like to

choose and support our own voluntary hospital or friendly society. It is in the blood. It is part of what we call freedom. Freedom, for us, consists very largely in freedom to choose—and for that matter to leave when we get disgruntled—the voluntary institutions which offer themselves freely to our choice."

Cure and prevention had both been stressed, but positive methods of community action in the cause of health, by which he meant health education, especially for young people, had been less regarded. It was impossible to divorce the cause of national health from the cause of national education. Every doctor and every nurse was something of a teacher; every teacher was something of a doctor. Perhaps that was a dangerous saying. If teachers presumed too far on their medical powers and practised, say, orthopaedics as well as pedagogy, they would be getting above themselves and beyond their function. But there remained a large sphere in the life of every school which was concerned with the promotion of physical health and well-being, a sphere which the teacher might well share with the doctor.

Professor Barker referred to three plans or suggestions lately put forward to provide a better foundation of physical health for young people. The first was the "ten-year plan for children," which was published, with a foreword by Lady Astor, in the autumn of last year. It was a plan to provide the healthiest possible material environment for the school-life of the child, and also to establish a national system of open-air nursery schools for children from 2 years of age. The second was contained in the Board of Education circular on physical education, education not only for those attending school but for young persons in general and particularly the unemployed. The third was the recently published report of the University Grants Committee proposing more adequate provision in the universities for physical training. These suggestions were in the spirit of true eugenics, aiming at the preparing of good stock which would in its turn be the parent of good stock.

The Uses of Medical Social Work

Miss Antoinette Cannon said that in addition to the most obvious use of medical social work in aiding in the elimination of sickness there was a further use, important though less regarded—namely, as an aid in living with the effects of sickness, or as an aid to personal development under disability. Disability and disease were not one and the same thing, though closely connected. A recent case study about to be published made it clear how many factors entered into disability besides anatomical or physiological impairment. She did not look forward to a time when all human beings would be normal in form and functioning.

"No doubt the bacterial enemies will be conquered, one by one, the chemical and mechanical problems of growth and birth will be solved, and perhaps the ageing process will be subjected to delay. . . . But so long as there is change in the world, the races of living organisms will be subject to conflict, and the race of man most of all, because of its own mobility and restlessness; and conflict means accident, injury, disability, and early death. No sooner did man cease to be bitten by the sabre-toothed tiger than he began falling out of aeroplanes, and I suppose that when he has air-conditioned this planet to his liking, he will begin to move on to some other. Will the medical social workers of that day be arranging to send the unadaptables back to earth, where they can live under more accustomed and favouring conditions of atmosphere and gravity?"

She added that social workers sometimes seemed in their zeal for prevention to attach too little importance to the comfort and happiness of old people and hopeless invalids, persons known to be approaching death.

"Doctors and nurses know better. There is no one for whom the present is negligible, no matter what the outlook for the future may be. Sometimes it seems as if the nearness and certainty of death enhanced the value of the present hour as nothing else can do; as if the only way really to savour life were to take away its future."