Therapeutic Conferences

Diabetes Mellitus—Obesity and Dietary Management

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DR. J. C. PETRIE: It has been estimated that 30-40% of all recognized diabetics could be managed satisfactorily by dietary measures alone if the patients were sufficiently encouraged and motivated. Many patients who do not need oral hypoglycaemic drugs are treated because they have apparently been unable to lose weight on a diet. The recent reports[1 2] of increased mortality from cardiovascular disease in patients on oral hypoglycaemic drugs, such as tolbutamide and phenformin, must make us re-evaluate these agents and re-emphasize the importance of diet in the management of diabetes mellitus.

DR. R. A. WOOD: There are so many overweight people who claim that despite strict dieting that they are failing to lose weight. In hospital under supervision such patients are ostensibly surprised at their success. A failure to lose weight is difficult to accept even when an endocrine abnormality is present.

Obesity and Glycosuria

HOUSE PHYSICIAN: This 43-year-old overweight woman was first admitted a year ago because of symptoms of ischaemic heart disease. One week ago she was readmitted because she had developed acute discomfort in the left arm, and a myocardial infarction was suspected. But our investigations have not shown any evidence of recent myocardial damage and an *x*-ray film of cervical spine has shown that she has cervical spondylosis.

On routine urine testing she was found to have glycosuria, without ketonuria. Subsequently she denied any primary symptoms of diabetes mellitus, such as polydipsia and polyuria, but she had noticed some pruritus vulvae.

STUDENT: Has the oral glucose tolerance test confirmed diabetes mellitus? Or does she have renal glycosuria?

DR. WOOD: Because of the early onset of features of ischaemic heart disease, maturity onset diabetes seemed more likely and this was confirmed by the oral glucose tolerance test. She does not have renal glycosuria.

STUDENT: Do you use the criteria of the British Diabetic Association?

DR. J. M. STOWERS: Yes. The recommended criteria for diagnosing diabetes are: if fasting, a capillary blood glucose above 130 mg/100 ml, with a peak at 180 mg/100 ml or more, and a value of 120 mg/100 ml or more two hours after taking 50 g of glucose by mouth.

In our clinic we like to have two out of the five readings—that is, 0, 30, 60, 90, and 120 minutes—abnormal before we regard the glucose tolerance test as definitely abnormal.

DR. WOOD: Most oral glucose tolerance tests are performed on venous blood and the corresponding values are slightly lower—125 mg, 160 mg, and 110 mg/100 ml.

DR. STOWERS: Urine should be tested (Clinitest-Ames) at times which will correspond with the venous blood sample and this allows the renal threshold for glucose to be assessed.

DR. PETRIE: In this patient the fasting venous blood glucose was 130 mg/100 ml, and the two-hour venous blood glucose after 50 g of glucose orally was 140 mg/100 ml. She therefore has diabetes mellitus.

ROLE OF DIET

DR. WOOD: This patient is more than 10% over her ideal weight. This makes her a very suitable candidate for strict dietary treatment and at this stage there is no need for oral hypoglycaemic therapy.

DR. STOWERS: I think that 10% over the ideal weight is a realistic level above which oral therapy should not be prescribed for such a mild carbohydrate intolerance. Some authorities take the level at 5% but when one considers patients who have undergone gross weight reduction they have a great deal of excess loose skin and visceroptosis, which, even with the strictest dieting, they will not lose.

There is a tendency for doctors to prescribe oral hypoglycaemic drugs just because diabetes mellitus has been diagnosed. Simple weight reduction will often restore the glucose tolerance test to normal limits without drug treatment and its associated side effects.

DR. WOOD: Oral hypoglycaemic agents can give rapid relief of diabetic symptoms in patients who are still obese. This may satisfy the patient and provide a disincentive for further dieting. Doctors should try to avoid this easy way out. Unless a diet is carefully observed patients will not be receiving optimal management.

STUDENT: How do you design the diet?

DR. WOOD: As doctors we must recognize that diabetic diets are complicated to the uninitiated and many patients simply do not understand the principles of dietary therapy. So it is important that the dietary measures should be simple and explained clearly.

In practical terms the caloric needs of the patient must be assessed—and this relates to the age, size, and daily activity.

Appointments of Speakers

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The first simple rule is for the patient to stop adding sugar to foods and drinks. This alone will improve diabetic symptoms.

DR. STOWERS: Certainly, I agree that the patient must stop adding sugar to foods and drinks. It is even better if patients can do without artificial sweeteners, which only maintain the wish to return to taking sugar.

Carbohydrate often needs to be restricted to about 100 g/day, but if it is taken partly in dilute form such as fruit the bulk of the diet need not be reduced. Protein intake should be about 1 g/kg "ideal" body weight per day, and this does not usually mean much restriction as compared with previous dietary habits. Fat, as the most concentrated source of calories, also has to be limited by avoiding cream, cutting fat off meat, and taking little soft cheese and few eggs. A smaller intake of butter or margarine should follow naturally the limitation of bread and biscuits.

Quantitative Aspects

STUDENT: Most medical text books have long lists of foods and beverages that should be weighed and measured. This seems rather obsessional and unnecessary.

DR. STOWERS: Unfortunately the quantitative aspects of dieting for obese diabetics are of prime importance. We must instruct these patients about the size of their portion of food, mainly the carbohydrate ones. Once patients have seen what certain weights of bread, potato, and so on look like, they should be able to judge them by eye. By far the most effective time to instruct a diabetic about diet is soon after the diagnosis has been made.

If the instruction is delayed, diet will tend to be considered a relatively unimportant aspect of treatment. Proper use of the carbohydrate "exchange" system allows a wide variety in the diet, though it may involve introducing new foods and vegetables to the menus. If the mother of a family develops diabetes and is suitably instructed about diet the nutrition of her whole family should improve.

DR. PETRIE: A 15-g "exchange" has been a Scottish tradition. Do you use 10-g "exchanges"?

DR. STOWERS: I am glad to say that the British Diabetic and Dietetic Associations have agreed that the carbohydrate exchange systems should be standardized, and the 10-g exchange is now in use in virtually all diabetic clinics in the United Kingdom.

DR. WOOD: The "exchanges" do not solely contain carbohydrate or protein or fat. For instance, a carbohydrate "exchange" may contain some protein and a little fat. Some students find the concept a little confusing.

Problems of Communication

DR. PETRIE: Do you issue *Notes for Diabetics*[3] to all patients? One of the reasons that patients fail to lose weight by dieting alone is that doctors fail to communicate adequately with the patient about his management. The patient does not fully appreciate the importance of dieting and he may be too polite, for example to ask the doctor to explain in detail the 10-g "exchange," which, though familiar to the doctor, may be unintelligible to the patient.

DR. STOWERS: We do issue *Notes for Diabetics* or the instructional leaflets produced by the British Diabetic Association[4] to most new diabetics as well, of course, as written dietary instructions modified to their individual requirements.

DR. WOOD: Many patients believe that diabetic chocolates and so-called diabetic drinks can be taken ad lib. The list on the label of what the things actually contain should be carefully inspected as often they are of high calorific value. It is also important to specify the caloric value of alcohol. For instance, one pint of beer represents about 160 Calories. A single whisky represents about 100 Calories.

DR. STOWERS: I would re-emphasize the importance of spending a lot of time with the diabetic patient on several occasions re-explaining to him the importance of diet. If the general practitioner or doctor in the diabetic clinic does not have sufficient time for this, it is the role for which hospital dietitians are specially trained. There is little doubt that success in dietary control of the obese, as of the insulin-dependent diabetic, plays a determinant part in restoring the patient to his rightful place in the community.

Vascular Complications

DR. WOOD: Would you argue with the recommendation that patients should take a predominance of unsaturated fats to prevent the later development of vascular complications? In this patient, of course, though she has had no angina pectoris recently, she does have coronary artery disease.

DR. STOWERS: No, I would not. The evidence for the protective effect of a diet containing a high proportion of polyunsaturated fats in patients with diabetes is no more than circumstantial, for suitably controlled studies have not been done and would be very difficult to do. However, it is known that polyunsaturated fats have a positive influence on lowering the blood cholesterol levels and that in general there is a correlation between hypercholesterolaemia and atherosclerosis.

SUBSEQUENT MANAGEMENT

DR. PETRIE: Before this patient is discharged she will see the dietitian and we will arrange for her to be followed up at the diabetic clinic.

DR. WOOD: She no longer complains of pruritus vulvae. This was due to a candida infection and with improved diet and nystatin pessaries it cleared in a few days.

STUDENT: Will you ask her to test her urine routinely for glycosuria? If so, at what time of day?

DR. STOWERS: As this patient is only 43 years old and has many years in which to develop the complications of diabetes mellitus, I hope that she will have fairly close control of her hyperglycaemia. So I would ask her to test her urine passed about two hours after a main meal about once a week.

When the Clinitest kit is issued we take special care to explain the technique of testing the urine and the patients are warned that the tablets may deteriorate if they become moist, and that this may be recognized by a mottling of the tablet.

DR. WOOD: Has this woman had any drugs over recent months which might have been diabetogenic—such as diuretics or glucocorticoids?

HOUSE PHYSICIAN: No. Furthermore, we have excluded other causes of diabetes mellitus, such as pancreatic disease, Cushing's syndrome, and acromegaly.

She will be discharged on a 1,000 Calorie diet.

STUDENT: But will she respond to this? Although 40% of patients should be able to be managed by diet alone, I gather that only 5-10% of patients successfully return to their ideal

weight and that many patients eventually require oral hypoglycaemic therapy.

DR. STOWERS: We have made the point very plainly to this woman that she must lose weight and we will not contemplate giving her oral drugs until she has made a determined effort to lose weight.

She will be seen fairly frequently by the dietitian and medical staff at the diabetic clinic and we may even need to warn her about possible complications.

[1] University Group Diabetes Program, *Diabetes*, 1970, **19**, Suppl. 2, 747.
[2] Knatterud, G. L., Meinert, C. T., Klimt, C. R., Osborne. R. K., and Martin, D. B.. *Journal of the American Medical Association*, 1971, **217**, 777.
[3] *Notes for Diabetics*. Lewis, London, 1971.
[4] Available from British Diabetic Association, 3 Alfred Place, London W.C.1.

Any Questions?

We publish below a selection of questions and answers of general interest

Routine Administration of Anti-D Immunoglobulin

In the report of a symposium on recent advances in rhesus haemolytic disease on abortion (B.M.J., 7 August 1971, p. 361) it was stated: "Induced abortion might result in a higher risk of sensitization than spontaneous abortion, and rhesus-negative mothers should be given anti-D as a routine after abortions." Should general practitioners give anti-D injections to mothers after spontaneous abortions?

There is a definite risk of Rh sensitization following abortion and Rh immunoglobulin should be given to all Rh negative women who abort. There is, however, a greater risk of sensitization following a full-term pregnancy and, as supplies of Rh immunoglobulin are limited, priority has necessarily to be given to Rh negative women who complete a normal pregnancy. The questioner should therefore ascertain from the local obstetrician the supply position in his area. If supplies of Rh immunoglobulin are adequate a sample of blood should be taken to the local hospital to determine the Rh type. The result can be available within a few hours, and if the aborted woman turns out to be Rh negative arrangements should be made to give her an injection of Rh immunoglobulin within 72 hours of the abortion. Even if the local supply situation is reasonable, it would clearly be wasteful to supply all doctors with Rh immunoglobulin to be kept in reserve, or to waste this drug on Rh positive women who necessarily comprise about 85% of all abortions.

Prurigo in the Elderly

What is the treatment of prurigo in the elderly?

Widespread pruritus in an elderly patient should not be labelled "senile pruritus" without considering the possibility of underlying disorders such as diabetes mellitus, hepatic disease, prostatic obstruction (with or without uraemia), or neoplasia. Screening for malignancy, liver function tests examination of serum electrolytes, and a full blood count are indicated.

If no underlying disease is found the pruritus is probably due to epidermal damage secondary to excessive drying and cracking of the overlying horny layer. This condition is helped by the avoidance of soap, using small amounts of a liquid detergent in its place and 30 g of ung. emulsificationes being added to the daily bath. The hygroscopic effect of a mixture of equal parts of glycerin and water applied to all dry and itchy areas will restore adequate hydration to horny layers. Any remaining pruritus would be helped by using 1% hydrocortisone cream or 1:10 dilutions of the more commonly used fluorinated corticosteroids since undiluted preparations like betamethasone or fluocinolone would add steroid atrophy to the already present constitutional atrophy within a few weeks of the required daily use. This risk is smallest with 1% hydrocortisone creams. Taking an antihistamine like trimeprazin 20 mg or long-acting brompheniramine 12 mg at night may be of additional help.

Eradication of House Mites

Have any studies been done on the treatment of houses and household effects with insecticide to eradicate infestation with the mites incriminated in mite-dust allergy and asthma?

I can find no published study of the effect of insecticides on house dust mites, but it has been suggested that the application of benzyl benzoate to mattresses might eradicate them.[1] Gamma benzene hexachloride might also be effective in the same way, but possible hazards to allergic patients from contact with, or inhalation of these materials must be considered. Killing the mites, however, is dealing only with part of the problem. Old houses contain dust which has been contaminated for years by successive generations of mites. This dust contains mite-material (secretions, excretions, and pieces of mite body), and remains antigenic for years even if there are no live mites around.

Allergic patients living in houses which are old or damp should take precautions against overexposure to house dust in general. Old bedding and bedroom carpets in particular should be removed and mattresses should be enclosed (after airing them) in plastic bags. Scrupulous bedroom hygiene is necessary even if a safe and effective acaricide becomes available.

[1] *Medical News-Tribune*, 1970, **2**, 2.

"Wet Suits"

Is there any risk from wearing "wet suits" for sailing or for underwater swimming?

The risks from wearing wet suits for sailing or underwater swimming are outweighed by the advantages. A good fit is essential to minimize the amount of water entering the suit. For sailing they have the advantage of being waterproof, windproof, and buoyant. In hot weather they may be intolerable by limiting evaporative cooling.

They are ideal for underwater swimming but with depth the cellular gas-filled spaces in the suit are compressed with a loss of thermal insulation and buoyancy. At a depth of 60 ft (18·2 m) in cold water the diver would soon feel uncomfortable. Swelling of the hands or feet sometimes occurs owing to the fit being too tight, but there are no risks provided the wearing of the wet suit is limited to the range of comfort.