Summary

Three cases are described in which a cauda equina lesion of gradual onset and progression was associated with long-standing inactive ankylosing spondylitis. No cause for the neurological lesion was found, and its possible causal relationship to the spondylitis is discussed.

We are indebted to Dr. J. L. Reynolds, Dr. R. A. Barker, and Mr. J. M. Langham for permission to report the patients admitted to hospital under their care.

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COST OF DIETS

BY

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The prescription of a special diet raises the possibility of greater individual expenditure on food. This has prompted us to study the costs of special diets prescribed and to compare these with the cost of an average normal diet. Normal diets vary greatly and rapid changes in food prices and incomes permit only

Change in earnings and consumer expenditure 1952 to 1957 to show that, while weekly earnings have increased, money spent on food as a proportion of the total expenditure on consumer goods and services has remained at 30%.

an overall view. The National Food Survey Committee (1959) of the Ministry of Agriculture, Fisheries and Food has made a detailed study of average normal diets: the average weekly individual expenditure on food of 28s. in 1957 is influenced by age, social class,

family size, and proportion of protein, carbohydrate, and fat consumed. Between 1952 and 1957 the percentage of energy value derived from protein and carbohydrate decreased while that derived from fat increased. With increasing prosperity and increasing individual earnings the proportion of income spent on food appears to have remained at about 30% of the total expenditure on consumer goods and services, as is shown in the Chart which is computed from the *Ministry of Labour Gazette* (1958) and the *Monthly Digest of Statistics* (1959).

During 1957 the Middlesex Hospital Department of Dietetics prescribed 1,108 special diets to new outpatients. The different types of special diet used are shown in Table I. The cost of each type of diet was

TABLE I.—Distribution of Special Diets Expressed as a Percentage of All Special Diets Supplied During One Year

Diabetic ..	58.0%	Low-sodium	1.4%	High-protein	0.5%
1,000-calorie	21.0%	Low-fat ..	1.4%	Others ..	9.2%
Gastric type	8.5%				

calculated by taking the October, 1959, market price of constituent foods and working on the basis of one individual buying for herself rather than for a family. The table in Appendix I gives the prices taken and illustrates the findings of two independent observers in different shopping areas. By this method the British Medical Association's (1950) recommended normal diet for a woman doing sedentary work cost 33s. 8d., while that for a man doing medium work cost 44s. 6d.

Results

The composition and cost of the diets studied is given in Table II and in detail in Appendix II. The most frequently prescribed diet was the diabetic diet, accounting for 58% of all the special diets supplied (Table I);

TABLE II.—Composition and Estimated Weekly Cost (to the Nearest Shilling) of Various Therapeutic Hospital Diets Compared with the British Medical Association Recommended Normal Diet (a) For a Woman Doing Sedentary Work and (b) for a Man Doing Medium Work

Diet	Calories	Carbo- hydrate (g.)	Protein (g.)	Fat (g.)	Cost
Normal { ^a _b	2,000	280	58	80	34s.
Diabetic	3,000	350	87	135	44s.
.. .. .	1,000	80	53	50	33s.
.. .. .	1,500	150	73	69	35s.
.. .. .	2,000	200	95	95	38s.
.. .. .	2,000	150	106	110	41s.
.. .. .	2,500	150	129	151	45s.
1,000-calorie	1,000	100	55	51	38s.
Fluid type of gastric	2,000	260	72	79	30s.
Convalescent gastric	2,000	270	70	72	35s.
Low-sodium (0.5 g./day)	2,000	273	77	73	34s.
High-protein	2,200	220	100	103	44s.
Low-animal-fat	1,000	110	58	35	40s.
Low-animal-fat + 60 g. corn oil daily	1,500	110	58	95	43s.

the 1,000- and 1,500-calorie diabetic diets accounted for approximately two-thirds of all diabetic diets. The cost of most diabetic diets did not exceed that of the British Medical Association's recommended normal diets. The less commonly used 2,000-calorie diabetic diets were more costly; those with protein contents of 95 g., 106 g., and 129 g., cost 38s., 41s., and 45s. respectively. Among the non-diabetic diets, the 1,000-calorie reducing diet worked out at 38s. a week, salads and fruit accounting for 15s. 7d. of this. The cost of two average gastric diets—a fluid type of diet and a convalescent diet—was estimated. The first cost 30s. a week and the second 35s. a week. The lower cost of the fluid type of diet

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compared with the normal was due to protein being derived from milk rather than the more expensive meat and fish. The low-sodium diet cost 34s., the same as the low normal diet, while a high-protein diet of 100 g. daily cost 44s. a week—the same as the normal for a man doing medium work.

Recent interest in the relationship between arterial disease and dietary fat stimulated us to cost a 1,000-calorie low-(35 g.)-animal-fat diet. This worked out at 40s., and the higher cost compared with our normal is due to more fruit being included and to the substitution of meat and fish for eggs and cheese. The addition of 60 g. of corn oil each day to the low-animal fat diet increases the calorie value to 1,500 and the weekly cost to 43s.

Discussion

In this particular department the diabetic type of diet accounted for almost two-thirds of all the diets prescribed, while the 1,000-calorie reducing diet accounted for approximately one-fifth. The proportional distribution of these special diets will depend on the population served. After the prescription of a special diet, some households may find it easier and less expensive to carry out than others. Variation in housekeeping ability between different individuals will influence cost, and the practical nature of a prescribed diet will affect the patient's ability to adhere to it.

Our aim was to compare the relationship between the estimated cost of prescribed diets and normal diets. We were interested to find the diets most frequently used—diabetic, low-sodium, and gastric diets—did not necessarily incur any extra cost for an adult woman doing sedentary work; this type of individual is the most usual type of patient. On the other hand, the 1,000-calorie diet, diets with a higher protein content, and those with a low-animal-fat content appeared to cost more, but none exceeded the cost of the normal diet for a man doing medium work.

APPENDIX I.—Average Market Price of Food by Independent Observers: A, in Central London During October, 1959; and B, on a London County Council Rural Housing Estate in June, 1960

	Quantity	A s. d.	B s. d.
Bread	lb.	8	8
Milk	Pint	8	8
Skimmed milk	lb.	1 7	7½
Cheese	lb.	1 8	1 4
Butter	lb.	2 0	1 6
Eggs	Dozen	4 0	2 9
Meat	lb.	4 0	3 8
Fish	lb.	3 6	3 7
Cabbage, carrots, swedes, turnips	lb.	1 4	1 3
Cauliflower	Head	1 8	1 6
Tomatoes	lb.	1 6	1 0
Lettuce	Head	6	3
Mustard and cress	Bunch	6	8
Chicory	lb.	2 3	2 0
Potatoes	lb.	3	4½
Apples { eating	lb.	1 8	1 4
{ cooking	lb.	1 0	1 0
Oranges	lb.	1 0	1 0
Bananas	lb.	1 7	1 4
Grapefruit	Each	1 6	1 0

1 lb. = 450 g. 1 pint = 570 ml.

APPENDIX II.—Detailed Composition and Cost of Various Therapeutic Hospital Diets Compared with the British Medical Association Recommended Normal for (a) a Woman Doing Sedentary Work, and (b) a Man Doing Medium Work. The Constituents of the Normal Diets were Chosen by us to Suit Average Taste

	B.M.A. Recommended Normal				Diabetic (1,000 Cal. 80 g. CHO)		Diabetic (1,500 Cal. 150 g. CHO)		Diabetic (2,000 Cal. 200 g. CHO)		Diabetic (2,500 Cal. 250 g. CHO)		1,000 Calorie		Low Animal Fat and Corn Oil		Gastric, Convalescent Type		Gastric Fluid Type		Low Sodium (0.5 g.)		High Protein (100 g.)	
	(a) (2,000 Cal. 280 g. CHO)		(b) (3,000 Cal. 350 g. CHO)																					
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Milk (pints)	3½	2 4	7 4	4 8	2 4	7 1	0 0	6 8	4 0	10½	7 0	3½	2 1	3½	2 0½	3½	18	12 0	5½	3 6	10	6 8		
Cheese (oz.)	4	10	4 7	10 4	2 10	7 4	4 8	12 7	2 8	14	2 8	6 4	2 1	8 6	—	4	4	1 4	2 3	—	8	2 11		
Eggs	3	1 0	4 7	2 4	2 8	14	4 8	17	1 4	21	2 0	4 4	8	2 0	—	7	4	—	4	—	14	2 0		
Butter (oz.)	8	2 0	10	2 6	1 6	9	2 3	14	2 3	21	2 0	4 4	8	4 4	1 0	6*	4	1 0	2 3	1½	2 2			
Meat (lb.)	3	2 0	12	2 8	1 8	2½	10 0	1½	3 6	2½	10 0	4 4	2½	1 1	5 0	2	4	—	8 0	1½	2 0			
Fish (lb.)	1	3 6	7	3 6	3 6	1	3 6	1	3 6	1½	5 6	7	7	2	8 9	1½	12	10	3	2 8	7 0			
Cereal (oz.)	7	3 6	17	6 6	—	3½	6 6	3½	6 6	7	3 6	1	1½	14	8 9	2	11	8	—	—	6 8			
Bread (loaves)	2	1 4	2	2 5½	4	9	4 11	1½	10	1	5½	1	1	1	8	1	11	18	—	1 2	8 8			
Fruit (lb.)	1½	2 5	11	2 5½	4 8	4	8	9	2 0	2	2 0	1	2	1	12 5	9½	11	1 3	1 6	2	2 0			
Vegetables	5	2 0	7	2 0	2 0	3	2 0	4	2 0	3	2 0	—	—	3	2 0	1	—	—	2 0	4	1 0			
Potato (lb.)	½	10	½	10½	6 3	½	10½	½	10½	½	10½	½	10½	½	10½	½	1	1 4	3	—	½	1 5		
Biscuits (lb.)	½	10½	½	10½	6 3	½	10½	½	10½	½	10½	½	10½	½	10½	½	1	1 4	—	—	½	2 6		
Tea (lb.)	1	1 4	½	1 4	1 4	½	1 4	½	1 4	½	1 4	½	1 4	½	1 4	½	2	2	1½	1 4	1 4			
Sugar (lb.)	1	1 4	½	1 4	1 4	½	1 4	½	1 4	½	1 4	½	1 4	½	1 4	½	2	2	1½	1 4	1 4			
Jam (oz.)	16	2 8	1	10	—	—	—	—	—	—	—	—	—	—	—	—	1	2 0	—	—	2 0			
Cooking fat (lb.)	1½	2 8	½	10	—	—	—	—	—	—	—	—	—	—	—	—	1	2 0	—	—	2 0			
Cake	1	2 0	1	2 0	—	—	—	—	—	—	—	—	—	—	—	—	1	2 0	—	—	2 0			
Puddings	1	3 6	1	3 6	—	—	—	—	—	—	—	—	—	—	—	—	1	2 0	—	—	2 0			
Ovaltine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Corn oil	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Ribena	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Soup	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Margarine (oz.)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Total cost	33 6	44 6	33 3½	34 5½	40 7½	37 11½	44 6	37 11	43 0½	34 5½	29 7	34 5	44 1											

* Salt-free. † Portion per day. ‡ Skimmed. †† Squash.

* Salt-free. † Portion per day. ‡ Skimmed. †† Squash.

The diets prescribed were basic in character. Their cost could be increased greatly by using special low-sodium preparations or higher-quality protein foods in the appropriate diets. Special diabetic food preparations employed to make individual diets more attractive would naturally add to the weekly expenditure. In the case of the 1,000-calorie diet, the one prescribed was thought to be adequate; the patient's income and standard of living may affect the quality and quantity of permitted foods on this type of diet. It may be that some supplementary foods are essential to make a 1,000-calorie diet less monotonous, with some consequent increase in cost. Financial assistance for this purpose may be sought by the patient from public funds, such as the special nourishment allowance allowed at the discretion of the National Assistance Board.

Those members of the population living on an old-age pension have a special problem with respect to the cost of their normal diet. The pensioner group spend two shillings less than the average weekly expenditure on food; whereas the average weekly expenditure on food is 30% of total expenditure on consumer goods, with the pensioner group this appears to be approximately 56% (National Food Survey Committee, 1959). The prescription of a special diet for pensioners is more likely to entail financial strain than in a normal population. However, financial aid and social services alleviate this strain somewhat. The problem is complicated, firstly, by factors such as pensioners' teeth, and, secondly, by the reluctance and physical inability of many older people to buy and prepare their food.

Summary

The estimated cost of prescribed diets was compared with that of the British Medical Association's recommended normal diet. Diabetic diets in most frequent use, the low-sodium diet, and gastric diets did not appear to entail any extra cost for an adult woman doing a sedentary job. Diabetic diets with a protein content of 100 g. or more, the 1,000-calorie diet, the 100-g. high-protein diet, and the low-animal-fat diet appeared to cost more, but none exceeded the estimated cost for a man doing medium work.

We are grateful to Miss E. Wilkinson-Hughes and Dr. J. D. N. Nabarro for making material for this paper available to us.

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The World Health Organization has provided Queen's University, Belfast, with a grant to assist in a year-long investigation which will be carried out by the University's department of social and preventive medicine and the Health Department of Belfast Corporation. The aim of the investigation is to find out what part air pollution plays in causing lung cancer. Belfast Corporation's Health Department will use five smoke- and dust-collecting instruments situated throughout the city; the samples collected will be sent for analysis to the air pollution unit of the Medical Research Council at St. Bartholomew's Hospital, London, where the proportion of cancer-producing substances will be determined. An investigation of smoking habits in Belfast is also being planned.

Preliminary Communications

Chlorothiazide in Treatment of Carpal-tunnel Syndrome

While it is now generally agreed that the major cause of the syndrome of acroparaesthesia in the upper limb is compression of the median nerve in the carpal tunnel, there is no such unanimity regarding treatment.

Although surgical decompression is the treatment of choice in long-standing cases with motor and sensory signs, milder cases respond to conservative methods of treatment, such as splinting of the wrist (Heathfield, 1957; Hierons, 1959), local injections of hydrocortisone (Crow, 1960; Foster, 1960), and systemic prednisone (Lees and Liversedge, 1959). None of these methods, however, is entirely satisfactory, for splinting is somewhat clumsy, hydrocortisone injections have a high relapse rate, and systemic steroids may not be of lasting benefit nor are they free from undesirable side-effects—so much so that the major complications which may occur with them should preclude their use in a condition which never threatens life.

In those cases associated with pregnancy there is evidence that tissue-fluid retention plays a part in the aetiology, and it is reasonable to suppose that this is a factor in other patients. In favour of this supposition is the common assertion by patients that their hands are swollen at the time when symptoms are maximal. McCallum (1959) and Wood (1959) have stated that cases of acroparaesthesia in pregnancy have been relieved by diuretic drugs. We thought it would be worth trying the administration of a highly effective diuretic, such as chlorothiazide, in an unselected group of patients with acroparaesthesia; so in October, 1959, we started treating with this drug all patients with the carpal-tunnel syndrome not severe enough to warrant surgical decompression. As the series was collected from a wide area covering several hospitals a double-blind trial was impracticable.

METHOD AND MATERIAL

All patients were initially given chlorothiazide 0.5 g. twice daily for six days in the week, and this was supplemented with potassium chloride 0.5 g. twice a day; they were seen again at the end of a month. In patients who had responded to the drug the dosage was progressively reduced and the cases were followed up until symptom-free for two months; patients were then asked to report back if symptoms recurred. At the end of the investigation all the apparently "cured" cases were contacted for review.

The series comprised 35 cases of typical acroparaesthesia due to compression of the median nerve in the carpal tunnel. As in other published series, there was a great preponderance of women. The age range was from 22 to 60 and was maximal in the decades on either side of 45. Symptoms had been present for a variable time from one month to 15 years, and were mainly nocturnal. Cases with marked signs of median-nerve paralysis were excluded from the series as being more suitable for surgery. Physical signs were therefore confined to minimal weakness of the thenar muscles and slight sensory impairment of median-nerve distribution. In 13 cases there were no abnormal physical signs except for a positive tourniquet test in nine. In no