Ten-year follow-up of obesity

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SUMMARY. The care of 43 patients with obesity has been reviewed at least ten years after first presentation. In five patients (12 per cent) there was a successful result, 27 patients (63 per cent) were regarded as failures, and the remaining 11 (25 per cent) were only partially successful. These results are similar to reports from hospital obesity clinics but less favourable than those from general practitioners with an interest in obesity.

No definite correlation with the ultimate results of weight control was shown with age or a family history of obesity, but patients who coincidentally required tranquillizers and anti-depressants were more successful at long-term weight loss. Initial weight loss on diet alone gave no guidance as to the final result. Patients who received anorectics for periods totalling more than 12 months had poor long-term benefit.

Introduction

MOST reports on the management of obesity have come from workers with a special interest in the subject; few reports from hospital-based clinics have involved follow-up for as long as ten years, and such reports from general practice are fewer still.

Aims

I sought to assess the long-term results of the management of obesity in this practice ten years after first presentation; the management of obesity has not been singled out for any other than what can be described as 'average' general-practice management.

In addition I tried to identify patients for whom response to treatment could have been predicted.

Method

This single-handed rural practice of 1,200 to 1,300 patients was taken over in 1964 and the patients discussed were either already receiving treatment for obesity or presented as new cases in 1964 or 1965; many have made repeated attempts to lose weight in the succeeding years.

The policy of management was for patients to be weighed on first presentation, given a diet sheet, and asked to report again in four weeks. If there was weight loss, the patient was encouraged to persevere without drugs. If weight loss was poor, anorectics were given until either the target was reached or no weight loss was noted on two successive visits.

Patients were weighed wearing shoes and indoor clothes and the ideal weights and percentage differences were based on data published in the *Journal of the Institute of Actuaries of London.* The diet used was the Marriott diet, and the drugs have varied over the years: initially levoamphetamine and dexamphetamine ('Durophet'), then phentermine ('Duromine'), and finally fenfluramine ('Ponderax') up to 120mg daily. In particular, no extra effort was made to make patients conform to the reducing diet by means of special clinics or any other form of therapy such as group therapy or psychotherapy.

Forty-three patients were studied, five men and 38 women, one diabetic patient having been excluded from the study because her diabetes became uncontrolled, with weight loss attributable to her disease. Details of the 43 study patients are given in Table 1.

Patients' variations in weight were compared in terms of percentage differences of their ideal weight. Successful patients were those whose final weights were within ten per cent or less of their ideal weights; unsuccessful patients were those who had lost less than ten per cent of their ideal weight; and partially successful patients were those who had lost more than ten per cent of their ideal weight, but whose final weight was more than ten per cent greater than their ideal weight. Table 2 summarizes these results.

Results

Strang (1964) estimated from a hospital setting that one eighth of patients starting a weight-reducing pro-

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Table 1. Results of individual patients in survey.

	Group A: within 10% of ideal weight					Group B: lost 10% or more												
Series number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Initials	IC	HF	GH	KH	CM	EA	EC	VD	JF	OH	MO	AP	RS	CS	AT	MT	AB	JB
Initial age	58	31	43	45	53	46	44	50	20	47	19	42	55	36	61	61	36	63
Height in inches	63	63	72	64	67	62	64	61	65	68	62	63	70	64	65	64	64	66
Ideal weight in lbs	129	121	165	133	144	123	133	120	121	148	106	126	169	133	137	133	129	141
Initial weight in lbs	154	150	191	155	197	170	184	189	224	269	177	171	261	174	176	194	187	219
Excess weight in lbs	25	29	26	22	53	47	51	69	103	121	71	45	92	41	39	61	58	78
Initial % of ideal weight	*120*	*125*	*115*	*115*	*135*	*140*	*140*	*160*	*185*	*180*	*160*	*135*	*150*	*130*	*130*	*145*	*145*	*155*
Final weight in lbs	136	126	164	150	156	150	164	173	177	245	162	161	244	161	161	176	181	217
Final % of ideal weight	*105*	*105*	*100*	*110*	*110*	*120*	*125*	*145*	*145*	*165*	*135*	*125*	*140*	*120*	*115*	*130*	*140*	*155*
Weight lost or gained in lbs	−18	−24	−27	−5	−41	−22	−20	−16	−47	−24	−15	−10	−17	−13	−15	−18	−6	−2
Ideal weight % lost or gained	*−15*	*−20*	*−15*	*−4*	*−25*	*−20*	*−15*	*−15*	*−40*	*−15*	*−15*	*−10*	*−10*	*−10*	*−10*	*−10*	*−5*	=
Original weight % lost or gained	*−12*	*−16*	*−12*	*−3*	*−21*	*−13*	*−11*	*−8*	*−21*	*−9*	*−8*	*−8*	*−6*	*−7*	*−8*	*−8*	*−3*	=

gramme will maintain good long-term weight control. In this study, 12 per cent of patients achieved long-term weight control. From an obesity clinic in Bucharest, Pavel and his colleagues (1969) followed up 1,000 obese patients for six years and found that 46·6 per cent maintained some weight loss. In this study 20 patients (46·5 per cent) maintained some weight loss. Sohar and Sneh (1973) followed up 27 out of 38 patients who 14 years previously had attended a hospital clinic and successfully lost weight. There was no permanent change in 66·6 per cent. Twenty-eight patients (65 per cent) in this series had no permanent weight change.

Craddock's *Obesity and its Management* (1973) is probably the standard work in general practice; the author obviously devotes considerable time and attention to the management of obese patients. In his study he measured success as loss of at least ten per cent of initial (obese) weight, and partial success as loss of between five and ten per cent of initial weight ten years after presentation. Using these criteria of success in this series, a total of 17 patients or 39·5 per cent were successful compared with 71 per cent of 111 patients in Craddock's series.

Table 2. Long-term results of management of obesity.

	Male	Female	Total	%
Group A				
Within 10% of ideal weight	0	5	5	*12*
Group B				
Lost 10% or more of ideal weight but still 10% or more in excess of ideal weight	2	9	11	*25*
Group C				
Lost less than 10% of ideal weight or gained weight	3	24	27	*63*

Table 3. Age at first contact and results.

Age	Total	*Groups A and B: successful and partially successful*	*Group C: unsuccessful*
Under 45 years	18	6 *(37.5)*	12 *(44.4)*
Over 45 years	25	10 *(62.5)*	15 *(55.6)*

It therefore seems that long-term results of the dietary management of obesity are similar in hospital obesity clinics and in average general practice, but that a general practitioner who devotes more attention to his obese patients has better long-term results.

Age at first contact

Craddock found that older patients did better than younger patients. Table 3 shows age at first contact for obesity. Although numbers are small, a relationship between age and the results of long-term management of obesity is not confirmed in this series.

Tranquillizer and antidepressant use

Obesity is said to be related to neurotic traits, and it was thought that the total length of periods of consumption of tranquillizers and antidepressant drugs over the ten-year period might be relevant. Four subdivisions were considered: those who had not taken such drugs; those who had taken them for periods of less than three months; those who had taken them for between three and 12 months, and those who had taken them for more than one year in total (Table 4).

The numbers are small, but there is a significant preponderance of patients who failed to lose weight satisfactorily in the group who had not taken tranquillizers or antidepressants ($p<0·01$). When the number of those who had taken these drugs for less than three months in the ten-year period is contrasted with the

19	20	21	22	23	24
JC	AK	MM	EM	EM	JM
62	25	48	47	57	28
61	66	64	64	63	63
120	136	133	133	129	118
158	180	204	214	210	172
38	44	71	81	79	54
130	*130*	*155*	*160*	*160*	*145*
154	189	203	213	203	174
130	*140*	*155*	*160*	*155*	*145*
−4	+8	+1	−1	−7	+2
=	+6	=	=	−5	=
=	+4	=	=	*−3*	=

Group C: lost less than 10% of ideal weight

25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
AP	GR	JS	IS	FW	MA	MB	CB	AH	HH	WH	EM	GM	HP	RR	HS	MS	GS	MW
61	61	55	34	57	29	30	30	24	16	70	27	48	46	26	45	61	61	25
58	70	62	62	59	59	63	65	66	63	60	67	70	60	66	68	59	72	65
112	169	123	122	115	105	121	127	130	110	118	134	157	118	140	160	115	184	137
162	224	164	152	146	238	190	175	189	154	154	192	196	147	182	176	136	217	175
50	55	41	30	31	133	69	48	59	44	36	58	39	29	42	36	21	33	38
145	*135*	*135*	*125*	*125*	*225*	*155*	*140*	*145*	*140*	*130*	*140*	*125*	*125*	*130*	*110*	*120*	*120*	*130*
167	217	160	141	147	290	207	242	208	212	166	231	217	167	198	197	144	230	191
150	*125*	*130*	*115*	*125*	*275*	*170*	*190*	*160*	*190*	*140*	*170*	*140*	*140*	*140*	*125*	*125*	*125*	*140*
+5	−7	−4	−11	+1	+52	+17	+69	+19	+58	+12	+39	+21	+20	+16	+21	+8	+13	+16
+5	−5	*−3*	−5	*+1*	*+50*	*+15*	*+55*	*+15*	*+50*	*+10*	*+30*	*+15*	*+17*	*+10*	*+15*	*+7*	*+7*	*+10*
+3	*−3*	−2	−7	+2	+22	*+9*	*+39*	*+10*	*+4*	*+8*	*+20*	*+11*	*+14*	*+9*	*+12*	*+6*	*+6*	*+9*

number of patients who had taken them for longer periods, the proportion of successful patients is significantly greater in the higher consumption group ($p<0 \cdot 01$).

Family history

A positive family history was taken to be obesity in parents or siblings as defined by the patients, although this can be criticized on the grounds that it was based on the patient's subjective opinion.

Sixteen out of 25 (64 per cent) of the successes and 13 out of 18 (72 per cent) of the failures had a family history of obesity.

Use of anorectics

The total period of use of anorectics is compared with the long-term results, the patients being grouped into those who had never taken such drugs in the ten-year period, those who had taken them for less than 12 months in total, and those who had had them for over one year in total in the ten-year period. Groups A and B, the successful and partially successful, are compared with the unsuccessful patients of Group C (Table 5).

Table 4. Tranquillizer and antidepressant use and results.

Tranquillizer use	*Groups A and B: successful and partially successful*		*Group C: unsuccessful*	
Nil	3 *(19)*	7 *(44)*	13 *(48)*	17 *(63)*
Less than 3 months	4 *(25)*		4 *(15)*	
3 months to 1 year	5 *(31)*	9 *(56)*	5 *(18.5)*	10 *(37)*
More than 1 year	4 *(25)*		5 *(18.5)*	

Table 5. Total periods of use of anorectics and final results.

Anorectic use	*Groups A and B: successful and partially successful*	*Group C: unsuccessful*
Nil	5 *(31)*	10 *(38)*
Less than 1 year	10 *(63)*	8 *(29)*
More than 1 year	1 *(6)*	9 *(33)*

The results without anorectics are similar in both groups and there is a preponderance of failures in the small numbers who took anorectics for more than one year; but for those who took anorectics for less than one year there is a preponderance of successful patients.

However, the only successful or partially successful patient who took anorectics for more than one year with permanent weight loss achieved the greatest weight loss of any patient in the study. After deciding to forego medication and keep to her own régime of eating less, she lost 21kg (47lbs), and although still 45 per cent overweight she is satisfied with her present, much improved outline.

Initial weight loss

Practice policy was to try the effects of diet alone before introducing anorectics, but despite this 17 patients were prescribed anorectics and a reducing diet at the same time, including two who were already taking anorectics when the practice was taken over. The remaining 26 patients who had a preliminary spell on diet only were divided into those who had lost weight on diet only, and those who had no weight loss. Nine out of 14 (79 per cent) successful patients and 13 out of 16 (81 per cent) unsuccessful patients lost weight on diet only, which is at variance with Craddock's finding that the response to diet alone for three months gave a good indication of long-term results.

Most anorectics have been shown to produce

substantially greater weight loss initially than placebos, and these results confirm this: only three out of 27 (11 per cent) failed to lose weight initially on anorectics.

Craddock used anorectics on patients who failed to lose weight on diet alone but found that none achieved satisfactory permanent weight loss. This study shows little difference between long-term successes and failures, no matter what the initial response to diet alone, and that neither this factor nor weight loss on diet with anorectics gives any help in forecasting long-term results.

Discussion

Feinstein (1960) surveyed 161 articles on the management of obesity and concluded that "identical dietary programmes had markedly different results when used by different physicians". Long-term follow-up suggests that no matter what the initial dietary management of obese patients, the results in hospital clinics and average general-practice care are similar, with about ten per cent of patients being partially successful and about 60 per cent of the patients initially involved either retaining their original weight or gaining weight.

However, general practitioners whose routine management is combined with long-term and continuing interest, can produce long-term results considerably better than the proportions stated.

This series demonstrated a significant positive correlation ($p<0 \cdot 01$) between the use of tranquillizers and antidepressants and successful weight loss, but further studies involving larger numbers of patients will be required to confirm this. No correlation was shown with age or family history of obesity.

This study suggests that obese patients should be managed by diet alone until weightloss stops, followed by anorectics until ideal weight is reached, or weight loss stops. No evidence has been found to suggest that the long-term result depends upon a successful initial response to diet alone. It is doubtful if anorectic use for more than a total of 12 months has any lasting effect, but the continuing active support and encouragement of an interested general practitioner can have a considerable long-term benefit.

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	(£75 per week)	(£95 per week)

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