Costs and benefits when treating obesity
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Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

Health technology
Performing surgery (using banding or vertical banded gastroplasty, or gastric bypass) in the treatment of obese patients.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Obese subjects.

Setting
The practice setting was primary care. The economic study was carried out in Sweden.

Dates to which data relate
Effectiveness and resource use data related to the period 1993-1995 (approximately). The fiscal year was not explicitly stated.

Source of effectiveness data
The evidence for final outcomes was derived from an ongoing single study (Swedish Obesity Study).

Link between effectiveness and cost data
Costing was prospectively undertaken on the same patient sample as that used in the effectiveness analysis.

Study sample
No power calculations were stated. Each study group consisted of 1,150 patients (out of 4,400 health-examined, 5,500 accepted, and 7,300 applicants).

Study design
The study design was not explicitly specified. The study was being carried out in 700 centres. Follow-up was at least 2 years for 700 subjects in each group. At 2 years, the surgical group had a follow-up rate of 95% versus 85% in the control group.
Analysis of effectiveness
The principle (intention to treat or treatment completers only) used in the analysis of effectiveness was not explicitly stated. The primary health outcomes were reduction in body weight, reduction in cardiovascular risk factors (insulin, glucose and triglycerides, blood pressure, and total cholesterol), incidence of risk factors such as cases of diabetes and the cure rate for patients with risk factors at baseline (diabetes and hypertension). The authors reported that data on mortality, myocardial infarction or stroke rates would not be available until approximately 10 years later.

Effectiveness results
Surgical patients (with banding or vertical banded gastroplasty) had a reduction in body weight of 30kg, and those receiving gastric bypass had a reduction of 40kg over 2 years. Conventional treatment at 480 of 700 primary health care centres did not, on average, result in any weight loss. The rate of reduction in insulin, glucose and triglycerides, blood pressure, and total cholesterol in the surgical group was 60%, 25%, 10%, and 5%, respectively. The control group experienced no improvement. The surgical group had a 0.5% rate of 2-year incidence of new cases of diabetes as opposed to 7% in the control group. The cure rate for patients having diabetes and hypertension was 68% and 43%, respectively, in the surgical group versus 16% and 22% in the control group.

Clinical conclusions
A 30kg weight loss resulted in a 14-fold risk reduction in terms of cases of diabetes. 3- to 4-fold risk reductions were observed with respect to the development of hypertension, hypertriglyceridemia and development of low HDL cholesterol.

Measure of benefits used in the economic analysis
The average number of hypertensive and diabetic patients over 10 years was the main benefit measure in this paper. The improvement in income due to better health was treated as another potential benefit resulting from treatment strategies (full details were not given).

Direct costs
Costs were not discounted. Quantities were reported separately from the costs in two general categories of annual number of hospital days and visits to a doctor. The direct costs of obesity were not reported in detail, but the costs due to number of hospital days, visits to a doctor, and outpatient care were discussed. Direct costs due to cases of hypertension and diabetes were reported in the paper, and were derived from official figures. The cost boundary adopted was not explicitly specified. The date of the price data was not explicitly stated.

Indirect Costs
The number of sick-leave days and lost working days due to disability in the two study groups was discussed (but not reported in detail). No further information was given regarding the indirect costs of the alternative treatment strategies.

Currency
Swedish kroner (SEK). A conversion to US dollars was performed.

Sensitivity analysis
No sensitivity analysis was performed.

Estimated benefits used in the economic analysis
Over 10 years the average number of hypertensive and diabetic patients was 39 and 6, respectively, per 100 surgically-treated patients as opposed to 65 and 25 per 100 conventionally-treated patients. The two study groups were reported to have almost identical monthly income (SEK10,000) both for the year before inclusion and during the three subsequent
Cost results
Direct costs were estimated to amount to about SEK16.5 million/100 surgical patients over 10 years and SEK15.5 million/100 control patients/10 years.

Synthesis of costs and benefits
Costs and benefits were not combined.

Authors' conclusions
The authors concluded that there was insufficient information to make a complete calculation because the project has only run for two out of its ten years. In particular there was no information on premature death, myocardial infarction, stroke or musculoskeletal problems over the full 10 years. The authors did conclude that health related quality of life was much worse in the control group after 2 years. However, it remains to be seen whether, in the long run, this will produce an increased incidence of psychiatric disorders. Long-term (10 year) data on sick-leave frequency and disability pensions in both groups needs to be available before the cost-effectiveness of obesity treatment can be fully evaluated.

CRD COMMENTARY - Selection of comparators
The reason for the choice of the comparator is clear.

Validity of estimate of measure of benefit
The internal validity of the estimates of benefit can not be objectively assessed because insufficient information was provided about the study design.

Validity of estimate of costs
Resource utilisation was not systematically reported separately from the costs, although, adequate details of the methods of cost estimation were given. Since the details were not available, because of the ongoing nature of the study, the authors were unable to provide a comprehensive picture of the direct and indirect costs associated with the surgical and conventional treatment of obesity.

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