Cost-effectiveness of clozapine: a UK clinic-based study
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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
Clozapine for schizophrenia and schizoaffective disorders.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
The study focuses on schizophrenic and schizoaffective members of society.

Setting
The practice setting was the Maudsley and Bethlem Hospital, London, UK. The economic analysis was carried out at the Institute of Psychiatry, London.

Dates to which data relate
Both effectiveness and cost data were collected between 1992 and 1997 (approximately). (Note: Date parameters were set for individual clients dependent upon when they themselves started clozapine treatment. Data 3 years prior to this date were obtained as well as data after the period of treatment commencement). 1993/4 prices were used.

Source of effectiveness data
The estimates for the cost-effectiveness of pre- and post-clozapine treatment were obtained from a single study.

Link between effectiveness and cost data
Retrospective costing was undertaken on the same patient sample as that used in the effectiveness study. Prospective data were recorded post-clozapine take-up.

Study sample
26 study subjects were chosen on the basis of consecutive clozapine clinic registrations (24 with schizophrenia and 2 with schizoaffective disorder, under DSM-III-R definitions). The mean age was 36.6 years (range: 23 - 61), the age at illness onset was 21.6 years (range: 15 - 35), and the duration of illness pre-clozapine was 10.7 years (range: 1 - 25). There were 19 male and 7 female subjects. 17 were of Caucasian origin, 8 were Afro-Caribbean, and 1 was of mixed race. All subjects had begun clozapine treatment due to inadequate responses to conventional neuroleptics and 3 subjects had a degree of learning disability. No power calculations or NNT calculations were stated.
Study design
This was a before-and-after study. 2 patients failed to continue on clozapine treatment (non-compliance with monitoring and leaving the area they lived in).

Analysis of effectiveness
The effectiveness analysis in the clinical study was based on treatment completers only. It should be noted, however, that those subjects who dropped out of the analysis had their costing information included in the final analysis in order to avoid biasing the results towards cost savings. Primary health outcomes assessed were clinical ratings, in-patient days, general service usage, and employment status (all shown pre- and post-clozapine use).

Effectiveness results
Four clinical assessment scales were applied:

(1) the Global Assessment Scale (GAS) where clients' mean pre-clozapine score was 28.7 and post-clozapine score was 48.7, (P<0.001 on paired t-test);

(2) the Brief Psychiatric Rating Scale (BPRS) where clients' mean pre-clozapine score was 67.5 and post-clozapine was 43.6, (P<0.001 on paired t-test);

(3) the Quality of Life Scale (QLS) where clients' mean pre-clozapine score was 24.0 and was 54.2 post-clozapine, (P<0.001 on paired t-test);

(4) the Abnormal Involuntary Movements Scale (AIMS) where clients' mean pre-clozapine score was 6.6 and post-clozapine score was 1.8, (P<0.001 on paired t-test).

In-patient day reductions/increases (+/-) due to clozapine use were as follows:

general adult psychiatry (non-BMT), -9.4;

general adult psychiatry (BMT), -10.4;

intensive care psychiatry, -1.1;

forensic psychiatry,-24.2.

The main general service mean attendance reductions/increases (+/-) were:

general adult psychiatry (day-patient), -33.3;

day care (including occupational therapy), -50.6;

depot clinic, -23.7;

clozapine clinic, +21.9.

Post-clozapine, 12 subjects were unemployed compared with 21 pre-clozapine, 3 more had found both sheltered work and voluntary work, 1 part-time, and 2 full-time employment.

Clinical conclusions
Clozapine is clinically affective in schizophrenia sufferers causing significant improvement in quality of life over the period of analysis. This was relative to increasing the employment prospects of the study participants.
Measure of benefits used in the economic analysis
The measure of benefit was quality of life, although specific details were not given by the authors.

Direct costs
No discounting was stated. Quantities and prices were not analysed separately. Costs were given from the perspective of a health service and included hospitalisation, accommodation, and service use. These costs were obtained from the hospital Accounts Department (periods spent within the Trust), Netten, 1994 (periods outside the Trust), specialised community residences, and carers (for daily living costs and benefits received). 1993/4 prices were used.

Statistical analysis of costs
Not performed.

Indirect Costs
Not calculated.

Currency
UK pounds sterling (£).

Sensitivity analysis
No sensitivity analysis was performed.

Estimated benefits used in the economic analysis
Pre-clozapine, quality of life was estimated at 24.0, compared with 54.2 post-clozapine (P<0.001 on paired t-test).

Cost results
The mean total annual cost pre-clozapine was 36,604, whereas the post-clozapine total was 32,836.

Synthesis of costs and benefits
The synthesis of costs and effectiveness was not clearly explained by the authors. Pre-clozapine cost-effectiveness was estimated at 15.2 (cost per unit benefit, unspecified), compared with 33.0 post-clozapine.

Authors' conclusions
Clozapine may be more cost-effective than typical antipsychotics in cases of treatment-resistant schizophrenia, even with higher prescription and monitoring costs.

CRD COMMENTARY - Selection of comparators
The decision to analyse data pre- and post-clozapine treatment was justified.

Validity of estimate of measure of benefit
The measure of benefit was unclear in its conclusions around quality of life and also cost-effectiveness.

Validity of estimate of costs
Detailed costs around service provision, accommodation, etc., were provided and their sources described. However,
they were not discounted.

**Other issues**
Overall, a clear, detailed and interesting study with implications for the cost-effectiveness of clozapine treatment. However, no power calculations were used to determine the sample size, which the authors concluded was small (although this may provide a more practical picture of the patterns of treatment and the resulting costs around schizophrenic patients as opposed to larger, less detailed studies). Also, sensitivity analysis was omitted from the study which meant that the assumptions within the analysis could not be modified to simulate different scenarios, effectiveness, costs, etc. It is often difficult to attribute benefits or change in patients’ states using retrospective data.

**Implications of the study**
The authors recommend further community-based studies comparing the cost-effectiveness of clozapine with that of other atypical antipsychotics. This should be accompanied by adequate quality of life assessment, and (prospective) costings, perhaps with a larger (randomised) study sample.

**Source of funding**
Unsponsored.

**Bibliographic details**

**PubMedID**
9337946

**Other publications of related interest**


**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Adult; Antipsychotic Agents /economics; Clozapine /economics; Cost-Benefit Analysis; Day Care, Medical /economics; Drug Costs; Employment; Employment, Supported; England; Female; Hospitalization /economics; Humans; Male; Middle Aged

**AccessionNumber**
21997001192

**Date bibliographic record published**
31/03/1999

**Date abstract record published**
31/03/1999