A retrospective cost-effectiveness analysis of the treatment of onychomycosis in general practice
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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
Anti-fungal treatment regimens for onychomycosis in general practice.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Patients receiving treatment for onychomycosis.

Setting
General practice. This study was carried out in the UK.

Dates to which data relate
Effectiveness data were collected from studies published between 1985 and 1994. Resource use data were collected between January 1994 and June 1996, using the CompuFile Doctors Independent Network database, comprising 370 GPs in 100 practices. Cost data were collected from 1997 sources. The price year was not reported.

Source of effectiveness data
Effectiveness data were derived from a literature review.

Link between effectiveness and cost data
Although the effectiveness data were derived from a literature review, the study also retrospectively assessed the computer records of 100 GPs to assess treatment time, number of GP consultations, incidence of hospital referrals and minor surgery for each of the four agents assessed.

Modelling
No modelling was undertaken.

Outcomes assessed in the review
The review assessed the following outcomes: success rates, number of prescriptions, number of days therapy received, number of consultations, proportion of hospital referrals, and minor surgery.
Study designs and other criteria for inclusion in the review
Not stated.

Sources searched to identify primary studies
Not stated.

Criteria used to ensure the validity of primary studies
Not stated.

Methods used to judge relevance and validity, and for extracting data
Summary statistics from individual studies.

Number of primary studies included
At least 4 studies were included.

Methods of combining primary studies
Efficacy rates were based on a meta-analysis of average success rates.

Investigation of differences between primary studies
Not stated.

Results of the review
The success rates were as follows:

terbinfine, 81%; griseofulvin, 26%; amorolfine lower, 11%; amorolfine higher, 41%; and tioconazole, 22%.

The number of prescriptions were:
terbinfine, 3; griseofulvin, 4.7; amorolfine, 2.3; and tioconazole, 2.3.

The total number of days of therapy received were:
terbinfine, 102; griseofulvin, 211.5; amorolfine, 110.4; and tioconazole, 163.3.

The number of consultations were:
terbinfine, 3.5; griseofulvin, 5.3; amorolfine, 3.2; and tioconazole, 3.5.

The incidence of hospital referrals were:
terbinfine, 15%; griseofulvin, 21%; amorolfine, 23%; and tioconazole, 20%.

The number of minor surgery cases per 1,000 were:
terbinfine, 13.7; griseofulvin, 5; amorolfine, 9.5; and tioconazole, 40.

Measure of benefits used in the economic analysis

E NHS Economic Evaluation Database (NHS EED)
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The success rate was used as the measure of benefits.

**Direct costs**
Costs were not discounted although patients were followed up for 24 months. Quantities and costs were not reported separately. Direct costs included costs of prescriptions, GP consultations, hospital referrals, and minor surgery. The quantity/cost boundary adopted was that of the health service. The estimation of quantities and costs was based on actual data. Drug costs were taken from the Monthly Index of Medical Specialities. Costs for GP consultations were derived from average National Health Service cost data, and costs for hospital referrals were taken from regional cost data. The price year was not reported.

**Statistical analysis of costs**
Not reported.

**Indirect Costs**
Not included.

**Currency**
UK pounds sterling (€).

**Sensitivity analysis**
A sensitivity analysis was conducted on the success rate and costs.

**Estimated benefits used in the economic analysis**
The success rate were: terbinafine, 81%; griseofulvin, 26%; amorolfine (higher and lower efficacy rate), 41% and 11%; and tioconazole, 22%.

**Cost results**
Direct costs per patient were: terbinafine, 209; griseofulvin, 93; amorolfine (lower and higher), 128 and 128; and tioconazole 114.

**Synthesis of costs and benefits**
The cost per success was: terbinafine, 258; griseofulvin, 356; amorolfine (lower and higher), 321 and 1,161 respectively; and tioconazole, 520. These results were insensitive to changes in the success rate or costs.

**Authors' conclusions**
The analysis of real life data in general practice confirms that the use of terbinafine appears to maximise primary care resources in terms of cost-effectiveness.

**CRD COMMENTARY - Selection of comparators**
A justification was given for the comparators used, namely the availability of a range of anti-fungals. You, the user of the database, should decide if these are widely used health technologies in your own setting.

**Validity of estimate of measure of benefit**
The authors did not state that a systematic review of the literature had been undertaken. Effectiveness estimates were
combined using meta-analysis and narrative methods. The estimates of effectiveness were derived credibly from the primary studies. The estimation of benefits was obtained directly from the effectiveness analysis. This choice of estimate was justified.

Validity of estimate of costs
All categories of costs relevant to the perspective adopted were included in the analysis. The costs associated with adverse drug reactions were not considered. Although some costs were omitted from the analysis, these are unlikely to affect the authors' conclusions. Costs and quantities were not reported separately. No statistical analysis of quantities was conducted although a sensitivity analysis of costs was conducted. The price year was not reported, limiting the generalisability of the cost results.

Other issues
The authors did make appropriate comparisons of their findings with those from other studies. The issue of generalisability to other settings was not addressed. The authors did not present their results selectively. The study assessed patients receiving treatment for onychomycosis and this was reflected in the authors' conclusions. The authors did not, however, take into account the long-term consequences of treatment failure.

Implications of the study
By using terbinafine, GPs in the UK have an opportunity to improve the management of onychomycosis, with improved outcomes for patients, a decreased workload for themselves and reduced use of hospital referral services.

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