Fluticasone propionate: an audit of outcomes and cost-effectiveness in primary care
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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
Fluticasone propionate (FP) for the treatment of asthma.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Asthmatics registered at the authors' general practice office.

Setting
The practice setting was in the community. The economic analysis was carried out at the University of East Anglia, Norwich, UK.

Dates to which data relate
Effectiveness data were collected between 1993 and 1994. Resource data were obtained from 1994 estimates. 1994 prices were used.

Source of effectiveness data
The evidence for FP effectiveness was derived from a single study.

Link between effectiveness and cost data
Costing was undertaken from study-monitored activity around drug prescriptions, as well as management costs per patient.

Study sample
No method of subject selection was stated other than that those included were registered asthmatics at the authors' practice, and that they were first prescribed FP in 1993 (FP group) or 1994 (control group). No power calculations were stated in the determination of the study sample size. Group sizes were: 21 (FP first prescribed in 1993) and 24 (FP first prescribed in 1994). The second group of FP recipients was chosen in order to control for non-drug effects during the study (i.e. changes in clinical procedures or practice staff). No exclusions or refusals to participate were reported.
Study design
Non-randomised retrospective cohort study. No loss to follow-up was stated.

Analysis of effectiveness
The analysis of the clinical study was not clear. Primary health outcomes in the study were asthma management figures. Baseline comparisons around gender, smoking, and asthma duration were broadly similar (no results reported). The median dosage of inhaled corticosteroid was the same for both groups.

Effectiveness results
Peak expiratory flow (PEF) measurements increased by a mean difference of 9.1% (P=<0.001) in the FP group (little change in the control group). The median number of short-acting bronchodilator prescriptions was halved from 8 to 4 (P<=0.001) in the FP group. The proportion of FP patients prescribed 10 items or more fell by 19% (39). The median number of oral prednisolone prescriptions among FP patients fell from 1 to 0 (P=0.037), with zero courses increasing by 42% to 71%. Mean annual GP consultation figures fell by 50% to 2 (P=0.001) in the FP group, compared with the control group (remaining at 2 throughout). Mean asthma nurse attendance decreased over the period from 4 to 1 (P=0.006) in the FP group, in comparison with the control group where nurse attendance increased (mean difference 0.9, P=0.3). In the FP group the percentage of patients making five or more GP visits fell from 48% to 10% whilst the percentage of patients seeing the asthma nurse three or more times decreased from 72% to 34%.

Clinical conclusions
For asthmatics with persistent symptoms and frequent exacerbations, FP therapy can result in improved clinical outcomes.

Measure of benefits used in the economic analysis
The authors did not provide a summary measure of benefit. As such the benefits were assumed to be equivalent to the effectiveness results.

Direct costs
Direct costs included medication and management costs, based on practice and local authority estimates from 1994.

Currency
UK pounds Sterling (£). No conversion was performed.

Sensitivity analysis
Not performed.

Estimated benefits used in the economic analysis
Peak expiratory flow (PEF) measurements increased by a mean difference of 9.1% (P=<0.001) in the FP group (little change in the control group). The median number of short-acting bronchodilator prescriptions was halved from 8 to 4 (P<=0.001) in the FP group. The proportion of FP patients prescribed 10 items or more fell by 19% (39). The median number of oral prednisolone prescriptions among FP patients fell from 1 to 0 (P=0.037), with zero courses increasing by 42% to 71%. Mean annual GP consultation figures fell by 50% to 2 (P=0.001) in the FP group, compared with the control group (remaining at 2 throughout). Mean asthma nurse attendance decreased over the period from 4 to 1 (P=0.006) in the FP group, in comparison with the control group where nurse attendance increased (mean difference 0.9, P=0.3). In the FP group the percentage of patients making five or more GP visits fell from 48% to 10% whilst the percentage of patients seeing the asthma nurse three or more times decreased from 72% to 34%.
Cost results
Total intervention costs were not reported directly. Estimates from the diagrams produced by the authors were: (1) FP group year 1 = 380 (235 medication and 145 management); (2) FP group year 2 = 380 (325 medication and 65 management); (3) Control group year 1 = 220 (160 medication and 60 management); (4) Control group year 2 = 275 (205 medication and 70 management). FP average change in total costs per patient was 0.5% (medication costs increased by 39% on average whilst management costs fell by 64%). Average total costs in the control group rose by 28% (medication = 27%, management = 31%).

Synthesis of costs and benefits
Not performed.

Authors' conclusions
The limitations of the study make concrete conclusions impossible. However, the study suggests that for asthmatics with persistent symptoms and frequent exacerbations, FP therapy can result in improved clinical outcomes and cost-effectiveness.

CRD COMMENTARY - Selection of comparators
The reason for the selection of comparators was clear (i.e. to control for non-drug effects).

Validity of estimate of measure of benefit
The validity of benefits used in the analysis was weakened both because of the nature of the analysis itself (non-randomisation, absence of sensitivity analysis, etc.), and by the assumption that reductions in costs between the treatment and control groups with corresponding outcome improvements implies cost-effectiveness.

Validity of estimate of costs
Details were given of the sources of cost estimates, resource use, and prices (although references were not explicit).

Other issues
noted by the authors, the overall validity of the analysis results was hampered by the methodology used (lack of randomisation, etc.). The paper was easy to read, brief and to the point. However, it will be interesting to see whether or not the prospective, clinically-controlled, double-blind study currently being undertaken, substantiates or refutes the results of this study.

Implications of the study
These results are based on what the authors recognise is a study design with limitations. However the results of an ongoing RCT will validate, or otherwise, the findings reported in the present study.

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