Use of salmeterol/fluticasone combination (seretide) in an asthma clinic: a pragmatic open study from primary care

Clark C E

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
The use of a salmeterol-fluticasone combination (Seretide) inhaler for treating asthma.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised patients with asthma who attended a nurse-run asthma clinic in a rural dispensing general practice. Patients were eligible if they were taking regular inhaled corticosteroid treatment (i.e. they were on step 2 to 3 of the BTS asthma guidelines).

Setting
The setting was primary care. The economic analysis was conducted in Devon, UK.

Dates to which data relate
The dates to which the effectiveness and resource data related were unclear. However, it would appear that the study from which the effectiveness data were gathered was conducted between 2000 and 2001. The price year was not reported.

Source of effectiveness data
The effectiveness data were derived from a single study.

Link between effectiveness and cost data
The costing was carried out prospectively on the same sample of patients as that used in the effectiveness study.

Study sample
The use of power calculations was not reported. Eligible patients were identified from a rural population of 1,850 registered at the author’s surgery. Of these patients, 204 (11%) had a recorded diagnosis of asthma and, during the study period, 70 (34%) attended the nurse-run asthma clinic. The inclusion criterion in the Seretide group was stable but symptomatic asthma (i.e. symptom scores of at least 2). Patients with controlled asthma at step 2 were designated as the control group. Of the 70 eligible patients, 20 were excluded because of dementia, prior adverse reaction, below step 2, on step 4.5, or poor compliance. A total of 50 patients were included in the analysis, of which 20 received Seretide and
30 received usual care. In January 2001, the Seretide Evohaler was introduced. Then, patients attending for follow-up were offered the choice of changing to the Evohaler if they wished.

**Study design**

This was a (prospective) observational study that was conducted in a single centre. There were two periods of follow-up. The mean duration was 9 months for the first period and 19 months for the second. No loss to follow-up was reported in the control group, whereas one patient discontinued Seretide due to cough and discomfort. All of the patients were reviewed at the first follow-up. At the second follow-up, 90% of the Seretide group and 87% of the control group were reviewed.

**Analysis of effectiveness**

Although the author reported that an intention to treat approach was used, it would appear that the basis of the analysis of the clinical study was, in fact, treatment completers only. The primary health outcomes used in the analysis were symptom scores, peak flow (PEF) measurements, prescriptions for relief bronchodilators, and mean daily inhaled steroid dosage. The patients did not differ significantly in their age or gender distribution, PEF, salmeterol use or smoking status. Due to the inclusion criteria, patients in the Seretide group had significantly higher symptom scores at entry than the others, 4.2 versus 1.5, (p<0.001).

**Effectiveness results**

At 9 months, the symptom scores were unchanged in the comparison group, but were significantly reduced in the Seretide group to a level below that seen in the control group.

The symptom scores for the Seretide group were reduced from 4.2 at baseline to 1.2 at 9 months and 1.4 at 19 months. The symptom scores for the comparison group were 1.5 at baseline, 1.8 at 9 months and 2.1 at 19 months. No test statistics to compare the relative effects were reported.

No significant changes were observed in PEF or in prescriptions of oral steroid courses in the 6 months before (first and second follow-up periods).

The mean number of bronchodilators in the previous 6 months was significantly reduced in the Seretide group, compared with the control group, after 9 months. At entry, the mean number of bronchodilators was 2.7 in the Seretide group versus 2.3 in the control group, (p=0.56). At 9 months, the number was 0.7 versus 2.1, (p=0.007). However, the difference was no longer significant at 19 months, 1.2 bronchodilators (Seretide group) versus 2.1 bronchodilators (control group), (p=0.10).

The mean equivalent daily dosages of beclomethasone at entry were significantly higher in the Seretide group (908) than in the control group (648), (p=0.041). Compared with baseline, this was significantly reduced at both 9 and 19 months for the Seretide group, 476 (9 months) versus 908 (baseline), (p=0.002), and 467 (19 months) versus 908 (baseline), (p=0.008).

**Clinical conclusions**

Seretide was effective in treating symptomatic asthma in primary care and in reducing symptom scores, reliever use and mean daily steroid requirements.

**Measure of benefits used in the economic analysis**

No summary benefit measure was used in the economic evaluation. The evaluation was, in effect, a cost-consequences analysis.

**Direct costs**
Discounting was not carried out because the costs were incurred during less than 2 years. The cost boundary adopted was not stated. The direct costs included drug costs only. The unit costs were not presented separately from the quantities of resources used. The source of resource use was unclear, but it is likely that the resource use data were collected during the study period. The costs of the drugs were based on the actual costs to the National Health Service. The price year was not stated.

Statistical analysis of costs
Standard statistical tests were carried out to test the statistical significance of differences in cost estimates across the two groups (t-test). The costs were presented as the mean value per 6 months of follow-up.

Indirect Costs
The indirect costs were not included.

Currency
UK pounds sterling (£).

Sensitivity analysis
No sensitivity analysis was performed.

Estimated benefits used in the economic analysis
See the 'Effectiveness Results' section.

Cost results
The mean cost of the previous 6 months' treatment for patients started on Seretide was not significantly higher at entry (146.85, 95% confidence interval, CI: 69.90 - 223.80) than that for the comparison group (82.74, 95% CI: 48.80 - 116.60), (p=0.12).

At 9 months, the mean cost of 6 months' treatment for patients started on Seretide was significantly higher (165.27, 95% CI: 134.65 - 195.89) than that for the comparison group (80.92, 95% CI: 47.73 - 114.11), (p=0.001).

At 19 months, the mean 6-month treatment costs for Seretide were 67.92 less (95% CI: 21.24 - 114.60; p<0.01) and were significantly lower than at 9 months.

Synthesis of costs and benefits
Not applicable.

Authors' conclusions
Seretide is effective in treating symptomatic asthma. When symptoms are taken into consideration, it also appears cost-effective, and the treatment costs are reduced after extended follow-up without a loss of benefit.

CRD COMMENTARY - Selection of comparators
The rationale for the choice of the comparator was clear. It represented the standard treatment for asthma in the author's setting. You should decide whether it represents a valid option in your own setting.

Validity of estimate of measure of effectiveness
The basis of the analysis of effectiveness was a (prospective) observational study, which was not really appropriate for the study question. The study sample may not be representative of the study population because the patient selection process was not randomised. In addition, selection bias is likely to have been high due to this lack of randomisation (patients in the control group had significantly lower symptom scores at entry and smokers were enrolled only in the control group). A double-blind, randomised controlled trial would have been more appropriate for the study question. Given the relatively small size of the study, there was limited power to detect small but clinically important differences in the effectiveness outcomes. Thus, caution is required when transferring the results of the analysis to other centres, owing to variability in standard patterns.

**Validity of estimate of measure of benefit**
No summary benefit measure was used in the analysis because, in effect, a cost-consequences analysis was conducted.

**Validity of estimate of costs**
The author did not state the perspective adopted in the study. Only the drug costs were estimated. The cost of the bronchodilator was not included. However, this exclusion would not have changed the results obtained since the estimation of costs was conservative (i.e. the estimation favoured the Seretide group). Daily dosages were reported but not the unit costs. The price year was also not reported. These facts hinder the reproducibility of the results in other settings. The costs were treated stochastically and a statistical analysis was carried out. No discounting was performed since the follow-up period was less than 2 years.

**Other issues**
The author compared their findings with those from one other study and described the differences in both the methods and results. The generalisability of the results was addressed to some extent. The author highlighted one limitation of the study, the small sample size. The author does not appear to have presented the results selectively and the conclusions reflected the scope of the analysis. However, this study had more than one weakness. A more precise cost analysis and a more appropriate study design are necessary to enhance the validity of the results.

**Implications of the study**
According to the author, asthmatics attending a primary care nurse asthma clinic, who have persistent symptoms despite inhaled corticosteroids, can benefit from changing to Seretide. The author emphasised the fact that careful and regular follow-up is necessary to achieve the minimum maintenance dosage of inhaled steroid.

**Source of funding**
None stated.

**Bibliographic details**

**Other publications of related interest**

**Indexing Status**
Subject indexing assigned by CRD

**MeSH**