Joint consultation for high-risk asthmatic children and their families, with pediatrician and child psychiatrist as co-therapists: model and evaluation

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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
The design and implementation of a joint consultation programme for the treatment of high-risk asthmatic children and their families, based on the simultaneous intervention of paediatrician and child psychiatrist as co-therapists.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised high-risk asthmatic children and their families. 'High-Risk Asthma' was defined according to specific criteria, which were provided in the text.

Setting
The setting was hospital. The economic study was carried out in Belgium.

Dates to which data relate
The effectiveness and resource use data were gathered in the period between 1986 and 1990. The price year was unclear.

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

Link between effectiveness and cost data
The costing was performed on the same patient sample as that used in the effectiveness analysis. It was unclear whether the costing was performed prospectively or retrospectively.

Study sample
Power calculations were not used to determine the sample size. The study sample consisted of 41 children, 25 boys and 16 girls, from 39 families; the mean age was 11.4 (standard deviation, SD=5.2) years. All children were regarded as being in a High-Risk Asthma situation.

Study design
This was a before-and-after study carried out in a single centre. The duration of follow-up was 4 years: 2 years before the introduction of the joint consultation programme, and 2 years after the implementation. No loss to follow-up was reported.

**Analysis of effectiveness**

The following clinical outcome measures were included:

- The child's symptom score, based on the Aas score of symptom severity (see Other Publications of Related Interest);
- A therapeutic score, based on the increase in medication required;
- A compliance score;
- Blood levels of theophyllin;
- An autonomy score;
- The number of hospital admissions; and
- The number of days in hospital.

The Spearman rank correlation coefficient was used to assess the correlation between different scores.

**Effectiveness results**

The mean symptom scores were 4 (SD=2) and 1 (SD=1) for the 2 years pre- and post-intervention, respectively, (p<0.001).

The corresponding values for other outcome measures were as follows:

- Therapeutic score, 4 (SD=3) and 3 (SD=1), (p=0.007);
- Compliance score, 1 (SD=1) and 3 (SD=1), (p<0.001);
- Theophyllin level in the blood, 5.6 (SD=3.5) and 9.2 (SD=4.8) microg/mL, (p=0.01);
- Autonomy score, 0 (SD=1) and 2 (SD=2), (p<0.001);
- Number of hospital admissions, 1 (SD=2) and 0 (SD=0), (p<0.001); and
- Number of days in hospital, 17 (SD=20) and 2 (SD=8), (p<0.001).

The correlation (r) between the symptom score and compliance score was significant (r=0.499, p<0.001). No significant correlation was found between the symptom and therapeutic scores.

**Clinical conclusions**

A single group evaluation of 41 children, pre- and post- joint intervention, demonstrated significant improvements in the symptom score, the therapeutic score, the compliance score, the autonomy score and drug monitoring. The improvement was illustrated by a significant decrease in hospital admissions and in the number of days spent in hospital.

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

No summary benefit measure was identified in the economic analysis, and only separate clinical outcomes were reported. This study should, therefore, be classified as a cost-consequences analysis.
Direct costs
Costs were not discounted even though 2 years' follow-up was considered for each health technology. Some quantities were reported separately from the costs, but cost items were not reported separately. The cost analysis covered both the hospital and psychiatric costs. The perspective adopted in the cost analysis was unclear. The cost of the hospital stay was based on the rate charged each year and on the duration of the stay. The cost year was unclear. The cost of paediatric consultation was not included in the cost analysis since it was deemed to be common to both pre- and post-intervention periods.

Statistical analysis of costs
No statistical analysis of costs was performed.

Indirect Costs
Indirect costs were not considered.

Currency
Belgian Francs (Bfr). The exchange rate was US$1 = 37 Bfr.

Sensitivity analysis
No sensitivity analysis was conducted.

Estimated benefits used in the economic analysis
Not applicable.

Cost results
The mean hospital costs for the 2-year period before the onset of the intervention were 133,576 Bfr. The mean hospital and psychiatric costs for the 2-year post-intervention period were 16,159 and 18,467 Bfr, respectively. This gave a mean total cost of 34,626 Bfr, which represented a cost-saving of 98,950 Bfr compared to the 2-year pre-intervention period.

Synthesis of costs and benefits
Costs and benefits were not combined since the use of the joint consultation approach was the dominant strategy.

Authors' conclusions
The authors concluded that it is possible for doctors of the body and of the mind to share consultation work, with a positive impact on both the patient's health and the cost of treatment.

CRD COMMENTARY - Selection of comparators
The reason for the choice of the comparator was clear. You, as a database user, should consider if this joint treatment for high-risk asthmatic children is relevant and feasible in your own setting, and if there are other possible alternative strategies.

Validity of estimate of measure of benefit
The internal validity of the estimates of effectiveness cannot be reasonably assured due to the non-randomised design adopted for the study, although it is accepted that this was due to ethical reasons. However, the strong and statistically-
significant results in favour of the joint treatment increase the robustness of the authors' clinical conclusions.

**Validity of estimate of costs**
An investigation from a societal perspective, including both direct and indirect costs for children's families, might have been interesting. Moreover, the use of sensitivity analysis would have been useful in order to generalise the findings of this study to other settings.

**Other issues**
The authors themselves underlined the limitations of the study design and sample size, and highlighted uncertainties surrounding the factors affecting the cost-effectiveness analysis.

The use of sensitivity analyses would have been useful to address the issue of generalisability. However, appropriate comparisons were made with other studies.

Since asthma is a chronic disease, a cost-utility framework may have been more appropriate than the cost-effectiveness format adopted.

**Implications of the study**
Further prospective, randomised studies on more stable patients are needed to confirm the efficacy of joint consultation in the context of childhood asthma.

**Source of funding**
None stated

**Bibliographic details**

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9439938

**Other publications of related interest**
Aas K. Heterogeneity of bronchial asthma. Allergy 1981;36:3-10.

**Indexing Status**
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Adolescent; Asthma /complications /economics /psychology /therapy; Belgium; Child; Child Psychiatry; Child, Preschool; Family Therapy; Female; Follow-Up Studies; Health Care Costs; Humans; Length of Stay /economics; Male; Models, Psychological; Patient Compliance; Pediatrics; Professional-Family Relations; Prognosis; Program Evaluation; Psychology; Psychotherapy; Referral and Consultation /organization & administration /utilization; Risk Factors; Severity of Illness Index; Statistics, Nonparametric; Stress, Psychological /complications /psychology /therapy

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