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Background

Asthma is still one of the major health problems in industrialized countries. Although new drugs and evidence-based guidelines have been developed, no major change in morbidity and mortality can be recognized.

In 2002, the direct and indirect health care costs associated with asthma in Germany amounted to appr. 1.84 billion €. Main parts were hospital costs and indirect costs caused by invalidity.

The efficacy of pharmaceutical care services for asthma patients in Germany has been proven in a controlled intervention study in the city of Hamburg (Schulz M et al. J Clin Pharmacol 2001; 41: 668-76).

Objective

The aim of this intervention study was to evaluate the effectiveness of pharmaceutical care with regard to clinical, humanistic, and health economic outcomes in adult asthma patients.

Outcome Parameters

Clinical Outcomes

- Asthma severity
- Degree of dyspnea
- Lung function (FEV₁, VC, peak-flow)

Humanistic Outcomes

- Asthma-specific quality of life (QoL, Hyland)
- Inhalation technique (7-point checklist)
- Knowledge
- Self-efficacy
- Compliance (Morisky)

Health Economic Outcomes

- Drug consumption
- Disability days
- Hospital admissions

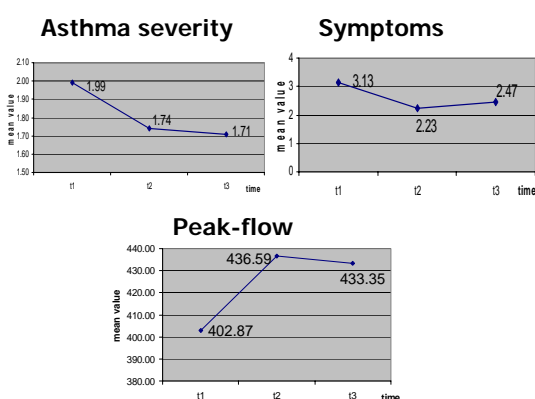
Design

Intervention study over 12 months. Pre-post-design with repeated measurements at 6 (t2) and 12 months (t3). At baseline (t1), 39 community pharmacies and 183 patients (18-65 years) diagnosed with asthma participated. 33 pharmacies (85 %) with a total of 128 patients (70 %) completed the study. In co-operation with the physician in attendance, five meetings between pharmacists and patients were scheduled (at baseline and at 2, 4, 6, and 12 months).

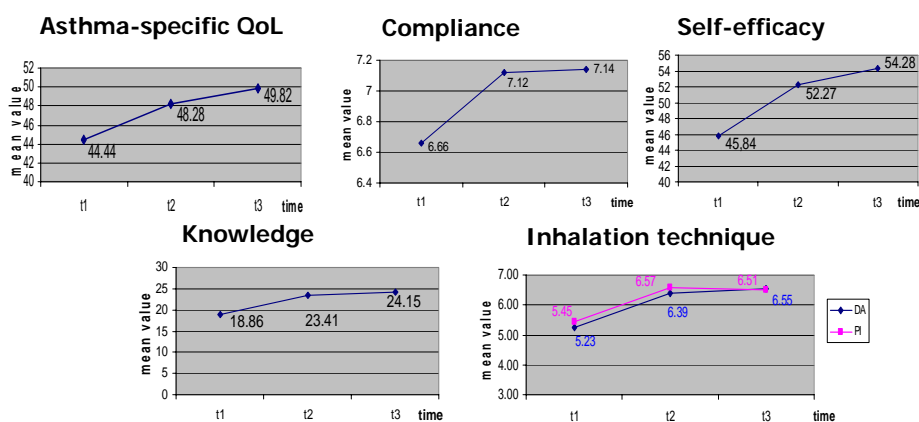
To evaluate economic outcomes, 2 big German statutory health-insurance funds (AOK and BARMER) provided 2-years' claims data for their insured patients (n=55) for the 1-year-period before and for the study year. A 1:10 matching was carried out to compare the results of the intervention group to a control group (AOK-data in a different state). Matching criteria were gender, age (± 5 years), date of recruitment and amount of DDDs (ATC: R03) during the study period.

Main Results

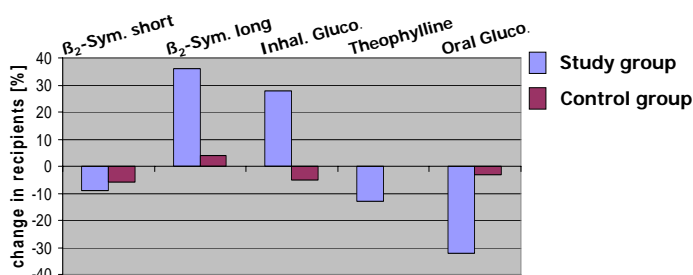
Clinical Outcomes ($p < 0.002$)



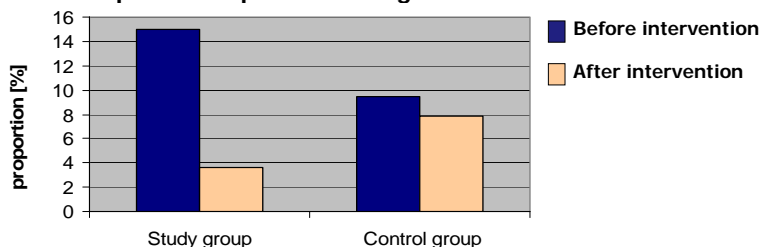
Humanistic Outcomes ($p < 0.0001$)



Health Economic Outcomes (n=55)



Proportion of patients being disabled



Conclusions

Pharmaceutical care for asthma patients (pts.) has a clear positive impact on humanistic and to some extent on clinical outcomes. Especially, factors vulnerable to pts. self-management improved. In co-operation with the prescriber, drug therapy changed towards evidence-based guidelines. Family pharmacy contracts with health-insurance funds provides remuneration for these services. To evaluate potential economic benefits, future research may focus on pts. with more severe asthma.