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Short and long term evaluation of two structured self management programmes on asthma

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ABSTRACT: *Short and long term evaluation of two structured self management programmes on asthma. M. Neri, A. Spanevello, M. Ambrosetti, P. Ferronato, C. Cagna, P. Zanon.*

In recent years education programmes for adults have been developed focusing on improving patient self-management.

The aim of this study was to evaluate the efficacy of two different educational programmes on asthma at one year (short term efficacy) and three years (long term efficacy). Changes in pulmonary function (FEV_1), knowledge of disease and skill concerning inhalation technique were evaluated to determine the efficacy of the educational programme.

Forty patients were randomly assigned to the two different educational programmes. Twenty subjects (mean age 49±11 yrs; FEV1 79%±15 of predicted) were assigned to a basic educational programme, while the others (mean age 44±11 yrs; FEV_1 79%±14 of predicted) were assigned to an "asthma school" programme.

In both "basic" and "asthma school" groups there was a significant increase from baseline to one year ($p< 0.05$) and three years ($p<0.05$) in FEV_1, number of correct answers to the knowledge questionnaire, and number of correct steps during the inhalation procedure. No significant differences were found between the two groups at baseline, one year and three years for all three variables studied.

This study confirms that both educational programmes determine in asthmatics an improvement in lung function, knowledge of disease and skill for inhalation technique at one year and three years following commencement of the programme. A "basic" educational programme is as effective as an "asthma school" one.
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Keywords: Asthma, education programmes, self management.

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Introduction

In recent years a number of group education programmes on asthma for adults have been developed focusing on improving patient self-management. Randomised controlled trials of the effectiveness of such interventions have shown that these programmes have a significant impact on knowledge of the disease, technical skills regarding inhalation technique and morbidity. However, many of these studies evaluated the results after 6-12 months [1–8]) while few data are available showing the long term efficacy of educational programmes in adult asthmatics [9].

The aim of this study was to evaluate the efficacy of two structured self management programmes on asthma at the end of interventions (short term efficacy) and after three years (long term efficacy), focusing on pulmonary function, knowledge of disease andskill as regards inhalation technique.

Methods

Subjects

Forty patients whose asthma had been diagnosed, according to international published guidelines [10] at least 1 year previously were invited to take part in a programme for improving asthma self management. The main objectives of the intervention were systematization of drug therapy, with emphasis on preventive maintenance drug therapy, and training of the patients in the self-management of their asthma based on peak expiratory flow measurements. In all patients six medical examinations with spirometry were performed bimonthly as a follow-up until 1 year after enrolment.

Besides this basic intervention, 20 of the 40 patients enrolled were randomly assigned to an "asthma school" programme consisting of six lessons of 1 hour each based on the content of an educational booklet on asthma in line with the International Asthma Guidelines [10]. Accordingly, during the follow up the subjects were divided into two groups: the "asthma school" group (mean age 44±11 yrs; 9 females; FEV_1 79%±14 of predicted) and the "basic" group (mean age 49±11 yrs; 11 females; FEV_1 79%±15 of predicted). The study was approved by the Fondazione Maugeri Ethics Committee.

Study design

Patients were evaluated three times: at baseline, at one year and three years after enrolment.

During each assessment patients completed a self administered questionnaire on asthma knowledge (nine questions), were tested for the correct MDI inhalation technique by a step by step procedure (nine tests) and underwent spirometry. The efficacy of the educational programme was evaluated according to changes in pulmonary function (FEV_1), knowledge of disease and skill regarding inhalation technique.

Data collection and analysis

Descriptive data and results are expressed as mean±SD. To test for differences within groups, multivariate analysis for variance was applied. The Mann-Whitney U test was performed to compare different outcomes between subjects. A p value less than 0.05 was considered statistically significant.

Results

All subjects were tested at baseline and one year. Thirty-five patients (87%) were tested at three years, 18 (90%) of the "asthma school" group and 17 (85%) of the "basic" group. In the "asthma school" group 2 patients were not reachableable to be contacted. In the "basic" group 1 patient could not be contacted, 1 had died (stomach cancer) and 1 was excluded by the study committee (overlap with another educational intervention before the study completion). Patients who could not be contacted by telephone were found to have moved to other area of the country.

Comparison between groups

No significant differences were found between the two groups at baseline, one year and three years for all three variables studied (FEV_1, number of correct answers to the questionnaire and number of correct steps performed during the inhalation procedure) (table 1).

Comparison within groups

In both "basic" and "asthma school" groups there was a significant increase from baseline to one year and to three years in FEV_1, number of correct answers to the knowledge questionnaire, and number of correct steps during the inhalation procedure (table 1).

Discussion

This study was aimed at evaluating short and long term efficacy of two structured self management programmes on asthma in terms of pulmonary function, knowledge of the disease and technical skills on inhalation technique. Both the "asthma school" programme and the "basic" programme increased the FEV_1, the number of correct answers to a questionnaire and the number of correct steps of the inhalation technique after one year (short term) and three years (long term).

These data are in agreement with previous studies that showed a significant impact of different educational programmes in adult asthmatics on knowledge of the disease, technical skills for inhalation technique and morbidity. The lack of insertion among the outcomes of the number of visits to emergency rooms, number of days of hospitalization and number of asthma attacks could be a limitation of the present study [1–7]. However, the originality of this study is its demonstration that the efficacy of educational programmes in asthmatics remains even three years after the administration of the programme.

Moreover, simple and complex interventions show the same trend. This suggests that the clear communication of basic information during a regular clinical follow up, as recommended by international guidelines, could be sufficient for a long term self management of bronchial asthma.

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Table 1. – FEV_1, number of correct answers to the questionnaire (Knowledge) and number of correct steps performed during the MDI inhalation procedure (Technique) by the two groups at baseline,at one year and at three years following administration of the educational programme

Outcome	"asthma school" group	"basic" group	between group
FEV_1 baseline	79 ± 14	79 ± 15	NS
FEV_1 one year	86 ± 11 *	85 ± 16 *	NS
FEV_1 three years	85 ± 15 *	85 ± 17 *	NS
Knowledge baseline	4.4 ± 1.4	4.7 ± 1.1	NS
Knowledge one year	6.1 ± 1.2 *	5.7 ± 0.6 *	NS
Knowledge three years	6.6 ± 0.6 *	6.1 ± 1.0 *	NS
Technique baseline	7.6 ± 1.0	7.5 ± 1.5	NS
Technique one year	8.3 ± 0.8 *	8.2 ± 0.5 *	NS
Technique three years	8.3 ± 0.8 *	8.3 ± 0.6 *	NS

NS: not significant; $p < 0.05$ compared with baseline.

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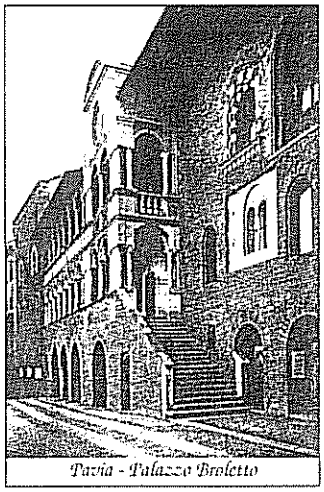

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