

Tab. 2. Baseline characteristics of subjects (n = 494)

Characteristic	
Sex (n, %)	
Male	238 (48%)
Female	256 (52%)
Mean Age, years (SD; median)	
All	39 (16; 37)
Male	37.9 (16.5; 37)
Female	40.1 (15.9; 37.5)
Mean age at the time of asthma diagnosis, years (SD; median)	
All	32.5 (16.6; 31)
Male	31.8 (17.1; 29)
Female	33.2 (16.2; 32)
Mean asthma duration, years (SD; median)	
All	6.3 (7.3; 4)
Male	6.0 (6.5; 4)
Female	6.6 (7.9; 4)
Active smokers (n, %)	72 (14.6%)
Family history of asthma occurrence (n, %)	256 (51.8%)
Positive allergic status (n, %)	
Inhaled allergens	165 (33.4%)
Drugs/medication	58 (11.7%)
Food	37 (7.5%)
Insect bite	5 (1%)
Occurrence of day-time symptoms at baseline (n, %)	459 (93%)
Occurrence of night-time symptoms at baseline (n, %)	401 (81%)
Limitation of daily activities (n, %)	330 (67%)
Pulmonary function testing at baseline (n, %)	
Mean prebronchodilator FEV1 (l)	2.4
% predicted	77
Without ventilatory disorder	105 (21%)
Mild obstructive ventilatory disorder	184 (37%)
Moderate obstructive ventilatory disorder	156 (32%)
Severe or very severe obstructive ventilatory disorder	31 (6%)
Combined ventilatory disorder	18 (4%)
Asthma medication at baseline (n, %)	
ICS alone	58 (11.7%)
ICS + LABA	416 (84.2%)
Montelukast	31 (6.3%)
Tiotropium bromide	5 (1%)
Theophylline	34 (6.8%)
Systemic corticosteroids	9 (1.8%)
Antihistamines	215 (4.4%)
Comorbidities	
Allergic rhinitis	38%
Chronic bronchitis or chronic obstructive pulmonary disease	29%
Cardiovascular disease	16%
Atopic dermatitis	9%
Gastrointestinal and metabolic disorders	7%
Thyroid gland disorders	2%
Tuberculosis	1%
Rheumatologic disorders	1%
Depression	0.6%
Chronic idiopathic urticaria	0.2%
Other	9%

ICS = inhaled corticosteroids
LABA = long-acting β 2-adrenoreceptor agonist
FEV1 = forced expiratory volume at first second

t-test, analysis of variance or Chi-square test of independence. The dependence of qualitative variables

was measured using a Spearman correlation coefficient, with an appropriate test of significance of the

coefficient being calculated as well. Multivariable logistic regression was used to calculate the odds ratio (OR), with a 95% Confidence Interval (CI), and by a test of significance for specified parameters. The significance level was set at the level $\alpha = 0.05$. For the subsequent logistic regression analysis, we used the parameters from the baseline logistic regression with a significance of $p < 0.1$.

Results

Four hundred and ninety-four adult asthma patients were enrolled in the study with a nearly equal proportion of males and females. Baseline characteristics of the subjects are shown in Table 2. The mean age at the time of asthma diagnosis was 32.5 (SD 16.6) years. The mean disease duration was 6.3 years (SD 7.5, median 4 years). There were no significant differences in age at diagnosis or the duration of the disease ($p = 0.379$, $p = 0.418$, respectively) between males and females. Over a half of the patients (52%) had a positive family history of asthma, particularly the younger ones. However, their proportion decreased with increasing age ($p = -0.197$, $p < 0.001$). Of the 494 patients, 74 (15 %) were active smokers irrespective of gender ($p = 0.271$). With increasing age, an increasing proportion of smokers was observed ($p = 0.101$, $p = 0.028$).

We assessed comorbidities according to available medical records with a focus on ten diseases: allergic rhinitis; either chronic bronchitis or chronic obstructive pulmonary disease (COPD); cardiovascular diseases; atopic dermatitis; gastrointestinal and metabolic diseases; thyroid gland disorders; rheumatic diseases; depression; and chronic idiopathic urticaria. The majority of patients suffered from at least one comorbid condition, with 27% having no recorded comorbidity, 49% having at least one, and 25% at least two comorbidities. The most frequent comorbidities were allergic rhinitis (38%) and chronic bronchitis or COPD (29%).

The impact of therapy and education on asthma control

Day-time and night-time asthma symptoms At the baseline visit, 93% of the patients reported day-time symptoms related to asthma and 81 % reported night-time symptoms. Over the study treatment period, the occurrence of day and night symptoms decreased markedly ($p < 0.001$) (Fig. 1).