Results: This approach resulted in a significant enhancement of the quality of care criteria analyzed:

Documented in the medical record	Before (n = 115)	After (n = 93)	p
Recent facts of the disease	79 (69%)	88 (95%)	<0.001
Presence of follow-up	32 (28%)	84 (90%)	<0.001
Breathing rate on arrival	42 (36%)	54 (58%)	0.002
PEF before treatment	22 (19%)	82 (88%)	<0.001
PEF after treatment	8 (7%)	77 (83%)	<0.001
Steroid therapy	58 (50%)	71 (76%)	<0.001
Follow-up after ED discharge	19/90 (21%)	35/47 (74%)	<0.001

Discussion and Conclusion: Implementation of locally developed guidelines with the participation of all healthcare personal was time consuming but had a significant impact on the ED management of asthma patients. This program should be continued to even further increase the quality of patient care. The impact on clinical outcome is currently being assessed.

P1286

Undertreatment in asthmatic outpatients with mild bronchial obstruction

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Undertreatment is one of the reasons for symptoms, sleep disturbance and limitation of activities in asthmatics. Inhaled anti-inflammatory drugs, in particular steroids, are very effective in controlling asthma symptoms in patients of all ages and severity.

The aim of our study was to evaluate, in asthmatics with mild bronchial obstruction, the difference between the domiciliary treatments carried out by outpatients (Opts) and that prescribed by the specialists (Sps) based on the severity of symptoms referred.

A retrospective study of 112 consecutive Opts (51 males, 61 females; mean age: 29 yrs, range: 13–63) with % p FEV1 $\geq$ 70 (mean: 98%, range: 70–132%) was performed.

The patients' histories and disease severity score in the previous four weeks (DSS) were investigated and the therapy (level 0–4) used by the Opts and prescribed by the Sps was compared.

Spearman's rank correlation was used for nonparametric data.

Only 6 out of 112 (5%) Opts did not report symptoms of asthma (DSS equal to 0) after domiciliary treatment.

We found a significant difference between the therapy used by Opts at home and that prescribed by the Sps (median: home therapy = 0.5; Sps = 2; $p < 0.0001$, Wilcoxon test), even if a correlation did exist between them ($r = 0.39$, $p < 0.0001$). The total DSS was not associated with the therapy used by the Opts, unlike that of the Sps ($r = 0.24$, $p < 0.001$).

We found a significant correlation between the domiciliary therapy and day symptoms only ($r = 0.20$, $p < 0.03$) and shortness of breath due to exertion ($r = 0.19$, $p < 0.04$); on the contrary there was significant correlation between Sps' therapy and day symptoms ($r = 0.22$, $p < 0.01$), shortness of breath due to exertion ($r = 0.22$, $p < 0.01$) and also night symptoms ($r = 0.21$, $p < 0.02$).

In conclusion, in asthmatics with mild bronchial obstruction: 1) the treatment used by the Opts at home is different from that prescribed by the Sps and the their treatment level is indicated by the severity of day symptoms and shortness of breath due to exertion; 2) the anti-inflammatory therapy is not used regularly, therefore the night symptoms are probably still present.

P1287

Non-participation in early intervention with inhaled steroids in asthma and chronic obstructive pulmonary disease (COPD): The role of 'fear of steroids'. Results of the 'DIMCA' study

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Treatment of chronic airflow obstruction with inhaled steroids at an early stage has shown to preserve the lung function. However, long-term treatment with inhaled steroids may cause local and systemic adverse effects. We tested the hypothesis that 'fear of steroids' may be an important reason of non-participation in the 'DIMCA' project, a Detection, early Intervention and Monitoring program on COPD and Asthma. 1749 Randomly selected adult subjects derived from 10 general practices were invited to a screening program to detect asthma or COPD. 604 Subjects were selected on the basis of the presence of bronchial obstruction, reversibility of obstruction and bronchial symptoms. After a two-year monitoring period 241 patients with an increased lung function decline or bronchial hyperresponsiveness were invited to participate to an early intervention trial with inhaled steroids. Non-participants were sent a questionnaire about the reason(s) of non-participation. Together the screening, monitoring and intervention part of the study showed on average 28% non-participants. The most frequent reason for non-participation was a general resistance to take medication daily (50% of the non-participants of the intervention trial). Remarkably, a specific 'fear of steroids' was a reason for denial in only 8.6% of these non-participants. It was concluded that 'fear of (inhaled) steroids' seemed not to be an obstacle for early treatment of asthma and COPD.

P1288

The clinical control of asthma after adding airway hyperresponsiveness (AHR) to the guides of long-term therapy. A two-year randomised trial

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According to present guidelines (GINA), the level of anti-inflammatory treatment for asthma is solely based on symptoms and lung function. In a randomised parallel design we investigated whether a treatment strategy aimed at reducing AHR (strategy B) on top of improving symptoms, FEV_1 and peak flow (PEF) variability (strategy A) leads to more effective control. 75 Non-smoking adults with mild to moderate atopic asthma (18–50 yr; 23 newly detected; FEV_1 (mean ± SD): 92 ± 15 %pred) visited the chest physician, every 3 months during 2 yrs. Prior to each visit, methacholine PC_{20} (baseline: geom. mean ± SD: 0.63 mg/ml ± 2.11 DD) was assessed and the subjects recorded asthma symptoms, β_2-agonist usage and morning + evening PEF on a diary card, during 14 days. At each visit, in both strategies, controller medication with inhaled corticosteroids and/or prednisone (4 levels: no steroids, 400, 800, 1600 μg/day+2 wk prednisone) was adjusted according to a stepwise approach similar to GINA, and to which 4 corresponding classes of AHR were added. In 62% of all instances, AHR-class indicated the need for an increased medication level, which was only applied in strategy B. Improvements in FEV_1 and morning PEF (% personal best) were more pronounced in strategy B *vs* A (B: 5.0 %pred, 9.0% and A: 0.1%pred and 3.5 l/s, respectively; $p < 0.05$). The exacerbation rate was 2.2 times lower in strategy B *vs* A (Cox regression: $p < 0.05$). Furthermore, individual standard deviations over the last 1.5 yr period for FEV_1%pred, morning PEF, PEF-variability and PC_{20} were smaller in strategy B *vs* A (MANOVA: $p < 0.05$). We conclude that a treatment strategy aimed at reducing BHR on top of improving symptoms, FEV_1 and PEF-variability leads to more effective control of asthma, resulting in fewer exacerbations and less variable airflow limitation. This implicates a role for monitoring AHR in the long-term management of asthma.

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P1289

Use of a simple patient focussed asthma morbidity score

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Established and validated questionnaires have been shown to be useful research tools with which to assess asthma morbidity (Juniper 1993), but they too time consuming for routine clinical practice. We have used four questions that the doctor would usually ask in each consultation (covering nights waking, reliever inhaler use, daytime wheezing and disruption of activities) to produce an 8 point score that requires no extra time from the clinician. We have assessed this short questionnaire score (Q score) with the Juniper morbidity score (total score and symptom score), with levels of PEF, and with the UK asthma guidelines treatment step in 81 patients randomly selected from 3 general practices (mean (SD), age 44 (12), 26 male, PEF 345 (138), FEV1 2.2 (0.9)) and repeated the observations two weeks later in a subset of 21 patients.

The paired observations showed that both Juniper ($r = 0.87$) and Qscore ($r = 0.79$) were repeatable with similar variability. The Qscore was negatively correlated with the Juniper symptom score ($r = 0.79$, $p < 0.01$) and total score ($r = -0.73$, $p < 0.01$) and both Qscore and Juniper correlated with level of resting FEV1 (Q: $r = 0.44$, J: $r = -0.42$) and with the severity of asthma as indicated by the treatment step (Q: $r = 0.47$, J: $r = -0.36$. all $p < 0.01$) although there was considerable scatter for the latter. The Qscore correlates well with both the established longer questionnaire and also shows similar relationships to lung function and to severity. If it also shows sensitivity to changes in asthma status over the next year it may provide a practical tool with which to estimate asthma morbidity in routine practice.

P1290

Effects of patient education to the life quality in asthma patients: 3 years experience

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Acceptance and application of the International Asthma Report by most countries made asthma therapy more than a simple prescription. It may be expected that patient education in addition to drug treatment will improve the life quality and prognosis of patients. For this reason, we studied randomly selected 25 cases (group I) that given special education for 1 year and randomly selected 27 cases

	Group I	Group II
% KS	$77.6 \pm 12.0^{\circ}$	$53.8 \pm 10.5^{\circ}$
% DS	$97.4 \pm 6.10^{\tau}$	$92.9 \pm 15.6^{\tau}$
Aas score	$0.52 \pm 0.87^{*}$	$0.85 \pm 1.20^{*}$
N.SS	$1.20 \pm 0.60^{'}$	$1.60 \pm 0.90^{'}$
D.SS	$0.32 \pm 0.62^{\alpha}$	$0.81 \pm 1.21^{\alpha}$
QOL	$6.16 \pm 1.35^{\beta}$	$5.52 \pm 1.81^{\beta}$

$^{\circ}$ $p = 0.0000$ $^{\tau}$ $p > 0.05$ * $p < 0.05$ $^{'}$ $p = 0.07$ $^{\alpha}$ $p > 0.05$ $^{\beta}$ $p = 0.0001$