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QUALITY OF LIFE AND MARKERS OF INFLAMMATION

A STUDY OF ASTHMA IN PRIMARY CARE

av

PER OLOF EHRS

AKADEMISK AVHANDLING

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Abstract

Asthma is a chronic disease that usually is diagnosed and treated in primary care. Most patients have a mild to moderate disease.

Asthma is considered to be caused by inflammation of the airways. There are several conventional ways of measuring asthma severity and control: lung function, reversibility to a bronchodilator, provocation tests to investigate airway hyperresponsiveness, and measurement of exhaled nitric oxide (NO). In recent years, it has been common to incorporate an assessment of quality of life in research and practice. The aim of this thesis has been to assess the relationship between quality of life, as assessed by the Asthma Quality of Life Questionnaire (AQLQ), and these “objective” measures of airway inflammation in patients with mild disease.

In studies I and III we investigated these relationships and found no significant correlation between quality of life, as assessed by AQLQ, and those parameters in patients not treated with corticosteroids. However, in study I we found a significant correlation between quality of life and the answer to one single question about recent symptoms, as assessed by a visual analogue scale (VAS). We also found that females, smokers, ex-smokers and non-atopic patients had lower quality of life scores as compared to males, non smokers and atopic patients.

In study III we found a significant co-variation between exhaled NO and bronchial responsiveness to methacholine and dry air. About 75% of the patients had a positive methacholine test, 50% had elevated exhaled NO values, and approximately 30% were positive on the dry air provocation test. In study IV we wanted to find out if quality of life and markers of asthma activity are influenced by inhaled steroids in patients with mild asthma. Seventy patients with mild asthma, not treated with steroids, were treated with inhaled fluticasone (250µg bid) or placebo for three months, in a random, double blind study. Quality of life scores were high already before treatment and were not significantly altered by treatment. Fluticasone induced a decrease in methacholine responsiveness ($p=0.009$), but there was no significant difference between the groups. The bronchial response to dry air was reduced by fluticasone ($p=0.005$), but not by placebo ($p=0.02$ between groups). Exhaled NO decreased in the fluticasone group ($p=0.0002$), but not in the placebo group ($p=0.02$ between groups). There was a relationship between the small change in quality of life and the reduction of exhaled NO ($r=-0.43$; $p=0.013$). Otherwise change in quality of life did not correlate with other parameters measured. Thus improvement of asthma activity markers, following treatment with inhaled steroids, is not reflected by an improvement in quality of life for patients with mild asthma.

In study II we investigated two groups of primary care patients with mild asthma who regarded themselves symptom-free, as assessed by the visual analogue scale (VAS). At a first visit we found a lower quality of life in patients with an impaired lung function, so called poor perceivers. Three months of therapy adjustment in that group resulted in a substantial improvement in quality of life, up to the same level as with the patients having an initially normal lung function. Also lung function improved, but not up to the same level as in the other group.

In conclusion, we found that the majority of patients with asthma in primary care have high quality of life scores. We found no correlation between quality of life and parameters such as lung function, reversibility to a bronchodilator, bronchial reversibility to a direct and an indirect stimuli and exhaled NO in steroid-free patients with mild asthma. There was a fairly good correlation between quality of life and VAS. In patients with mild asthma three months of steroid inhalation altered bronchial responsiveness and exhaled NO-levels, but had no effects on quality of life. We have also shown that patients with mild asthma and impaired lung function, who regard themselves as free of symptoms, experience a clinical relevant improvement in quality of life following adjustment of therapy.

Key words: Mild Asthma, primary care, quality of life, airway inflammation, bronchial responsiveness, fluticasone.

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