

# Astma and COPD

## Diagnoses and prescriptions in Swedish primary care

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### ABSTRACT

**Aims:** The overall aim of this thesis was to evaluate the quality of the diagnoses and the prescribing of medication to patients with asthma and COPD (Chronic Obstructive Pulmonary Disease) in Swedish primary care. The specific aims were to study the adherence to recommended guidelines and quality indicators in diagnosis and treatment of patients with asthma and COPD and to survey the relationship between the diagnosis of asthma/COPD and the prescribing of asthma/COPD medication.

**Methods:** All visits to health care centres in Skaraborg, Sweden, are documented in computerized medical records constituting the Skaraborg Primary Care Database (SPCD). In a register-based retrospective observational study, all patients were identified; patients diagnosed with asthma or COPD during 2000–2005 ( $n = 12,328$ ) and all individuals with at least one prescription of asthma/COPD medication issued during 2004–2005 ( $n = 14,101$ ) regardless of diagnoses. In a detailed analysis for a 5 % random sample ( $n = 945$ ) data from patients' medical records were manually extracted. Information on performed investigations at initial visits and at follow-up was collected and compliance with procedures as recommended by national guidelines was used for quality assessment. For prescriptions information about indication, number and type of prescriptions was retrieved.

**Results:** Among 499 patients with asthma 167 (33 %) were investigated with spirometry or Peak Expiratory Flow (PEF) during initial visits in agreement with guidelines. Correspondingly, 40 out of 124 patients with COPD (32 %) were investigated with spirometry. During follow-up evaluation in agreement with guidelines was performed on 130 (60 %) of patients with asthma and on 35 patients out of 77 (45 %) with COPD. The prescribing of inhaled corticosteroids (ICS) reached quality target, still every second patient with asthma made an acute visit during follow-up.

Asthma/COPD medication was prescribed in primary care to approximately 6 % of the total population in Skaraborg. In total 54 % of the medication users had recorded diagnoses of asthma, COPD or both. Consequently 46 % had no recorded asthma/COPD diagnosis. The incongruence between diagnosis and medication was present in all age-groups. Among patients with recorded asthma 37 % had no medication prescribed.

#### Conclusions:

- There is incongruence between diagnoses of asthma or COPD and prescription of medication, consistent in all age-groups, which indicates that the levels of asthma/COPD medication cannot be used as proxy for asthma/COPD disease prevalence.
- Asthma/COPD medication is often prescribed outside recommendations and used both as a diagnostic tool and in an off-label manner.
- Patients with asthma seem to be inadequately treated, since approximately one third of all patients with recorded diagnoses of asthma are non-medicated, one third use medication sparsely and only one third use medication continuously.

- Adherence to recommended guidelines is low since only one third of the patients with diagnoses of asthma or COPD during initial visits, and about half of the patients during follow-up, had a clinical evaluation, including spirometry or PEF, in agreement with recommendations.
- The prescribing of ICS-treatment reaches the quality indicator target, still patients with asthma seem to be uncontrolled in their disease, since acute visits were common, indicating that treatment targets are not reached and that adherence to medication is low.
- There is substantial room for quality improvement in the clinical evaluation of patients with asthma and COPD and there is a need to observe the extent of off-label prescribing in asthma/COPD medication.

**Keywords** asthma, COPD, diagnostic guidelines, quality indicators, prescribing, off-label

ISBN 978-91-637-0389-8