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ORIGINAL RESEARCH

# Childhood asthma: reasons for diagnostic delay and facilitation of early diagnosis—a qualitative study

Marianne Stubbe Østergaard\*

Department of General Practice, Panum, University of Copenhagen, Blegdamsvej 3, DK 2200 N, Denmark

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## KEYWORDS

Childhood asthma;  
Parents description;  
Doctors description;  
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Metaphors;  
Onomatopoeic;  
New asthma concept

## Summary

**Background:** Children with undiagnosed asthmatic symptoms account for much illness and hospitalisation. The aim of the study was to identify reasons for diagnostic delay in childhood asthma and to develop tools for early diagnosis.

**Methods:** A qualitative study, using semi-structured interviews with the parents of 30 children with asthma aged 2–15 years, combined with 15 GP interviews.

**Findings:** Asthma symptoms for most of the children started during their first year. The typical symptom pattern reported by parents consisted of insidious recurrent or continuous respiratory symptoms, particularly bad at night, often lasting several weeks or months, provoked or aggravated by common colds or foggy weather. In describing the symptoms, parents focussed on coughing and sputum production. As in other studies, the children's asthmatic diagnosis was obscured by excessive diagnostic emphasis on respiratory infections. The reasons for diagnostic delay seemed to be, typically, that doctors did not pay enough attention to the history of recurrent cough and unspecified respiratory symptoms, just as the parents' use of lay and onomatopoeic terms and metaphors for wheezing seemed to be misinterpreted. Furthermore some doctors relied more on the present symptoms and physical examination, although asthmatic patients may have normal auscultation on examination. Several doctors did not expect asthma in infancy.

**Conclusions:** The underlying reason for diagnostic delay could be that a former diagnostic definition of asthma, focussing on severe and dramatic cases, was still used by doctors. However, adapting to a new diagnostic concept for asthma, which highlights a history of periodic or chronic cough, wheeze and/or breathing difficulties and the typical asthma pattern in toddlers as shown in this study, may enable earlier diagnosis and treatment.

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## Introduction

Children with asthmatic symptoms account for a major proportion of paediatric hospitalisations

\* Tel.: +45 35327945.

E-mail address: [m.stubbe@gpmc.ku.dk](mailto:m.stubbe@gpmc.ku.dk).

[1,2], in which diagnostic delay and insufficient treatment of asthmatic symptoms appear to play an important part [3]. A Norwegian study reported that 75% of the children admitted for acute asthma were below four years of age [4]. The diagnostic delay in childhood asthma results in much disease, family strain, and high health care cost [5].

Diagnostic delay in childhood asthma (usually defined as the interval between the first visit to a doctor with respiratory symptoms and the established asthma diagnosis) of four years was described in 1930 [6] and 1978 [7]. Later, British general practitioners (GPs) reported median delays of 16 respiratory consultations [8] or of three years [9]. Recently in South Africa, three years of diagnostic delay was found in 50% of the asthmatic children studied [10]. Reasons given indicated that GPs trivialised the respiratory queries, overemphasised infectious diagnoses, hesitated to use the diagnostic term 'asthma', and often treated the symptoms with antibiotics [6–8].

Major conceptual changes in asthma have recently been instituted. International Consensus Reports and guidelines [1,11,12] proposed replacing the former definitions of asthma as "reversible air-flow obstruction" or "attacks of wheezing, breathing trouble and expiratory dyspnoea", by pragmatically defining asthma as "chronic or episodic cough, wheeze, and/or respiratory difficulties". Furthermore, looking at the natural history, asthma traditionally has been thought of as a disease starting in school years. However, based on epidemiological studies, more than 50% of asthma cases start before the age of 3 years [13].

Organisationally, Danish children are assigned to a GP and only attend a paediatric department after referral from the GP or after acute hospital admission. This study developed from the author's function as a GP-coordinator between general practice and the local paediatric department with a view to reducing the pressure on paediatric outpatient clinics.

The aim of this study was to identify fundamental reasons for diagnostic delay in childhood asthma and to identify tools for early diagnosis.

## Methods

The interviews were conducted in 1996 with parents of 30 children, aged from two to 15 years with a median age of six years, attending an outpatient paediatric clinic with an established asthma diagnosis based on symptoms and response to asthma

therapy. In parallel, fifteen GPs located in Copenhagen were interviewed.

Purposive sampling [14,15] ensured a wide spectrum of asthmatic children in relation to age, asthma severity (ranging from mild to severe), duration of the disease (ranging from one to ten years), as well as social background. It also ensured a spread of GPs in relation to sex, age and type of clinic.

The method was qualitative, based on grounded theory methodology [14], referring to the researcher's aim to develop descriptive analysis or theories embedded in the collected data. The study interviews were semi-structured, with open-ended questions, guided by a theme list. The main themes in the interviews with the parents were a retrospective description of the course of the child's asthma disease and the interaction with the health care system. The themes of the interviews with the GPs focused on their diagnostic process in relation to asthma. The interviews were audio-taped and transcribed verbatim.

The analytical steps were to:

- Assess the internal validity [15] of the parents' interview, comparing core data from the interviews with the paediatric medical records.
- Divide, code, and break the text of the parents' and the GPs' interviews, respectively and separately, into categories and sub-categories, extracting meaning, descriptions, and concepts from the categorised texts, and then correlate the extracted categories with the interview text.
- Make source triangulation, comparing the categories developed from the parents' and doctors' interview text. Most of the extracted categories emerged from both parents' and GPs' interviews.

In the research process, the conceptual changes in asthma became central theoretical analytical approaches for the research question.

## Results

### The diagnostic delay and use of infectious diagnoses

Prior to the asthma diagnosis, the families experienced numerous sick days and inconclusive visits to the doctor, and the diagnostic delay caused considerable emotional and social strain in the families. Only a few of the parents thought that patients' delay played a role.

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