

Allergic Rhinitis in Danish General Practice

Prevalence and Consultation Rates

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The prevalence rate of allergic rhinitis and the consultation rate caused by this disease were studied in 131 general practices covering a population of 450,000 persons in Denmark. During a 1-year period starting June 1977 all consultations with or without symptoms were recorded.

Allergic rhinitis was defined as paroxysmal sneezing and rhinorrhoea with or without conjunctivitis, and without signs of infection.

Results are presented from three groups of practices classified by self-estimated completeness of reporting. 11–15 per thousand of the total population contacted a practice during the 1-year period (males: 12–17‰, females: 10–13‰). The highest prevalence rate occurred at 10–19 years of age, and allergic rhinitis was common from five to 44 years of age. The prevalence rate was higher among males up to the age of 30, after which age it was a little higher among females. About two-thirds of the patients consulting had at least one consultation per year with symptoms present.

The number of contacts came to 4.4 per patient per year and 20–25% of these were with symptoms.

Key words: allergic rhinitis; consultation; Danish; general practice; prevalence.

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CLINICAL ASPECTS

The threshold for seeking general practice because of allergic rhinitis is determined by several factors, some of which are related with the disease, some with the patients, and some with the policy of investigation and treatment adopted. More than three-quarters of all consultations are made without symptoms present. This indicates that policy-related factors play a major role in the consultation rate. It might be considered whether this is appropriate in view of the benign course of this disease.

Allergic diseases comprise an important part of the work in general practice. Recent improvements in diagnosis and treatment have increased the need for knowledge about their impact upon general practice.

The aim of this study is to investigate the prevalence and the consultation rate of patients suffering from allergic rhinitis in Danish general practice.

Definitions

Allergic rhinitis is defined as paroxysmal sneezing and rhinorrhoea with or without conjunctivitis, and without sign of infection.

Prevalence rate is defined as the number of persons per 1000 of the practice population who contact a general practice because of problems related with allergic rhinitis during a year, thus giving a 1-year prevalence rate.

Consultation rate is defined as number of consultations per allergic rhinitis patient per year.

PATIENTS AND METHODS

The main points concerning methods and selection of patients are described below. A detailed description of methods and material will be published in a separate article (7). During a 1-year period starting in June 1977, information was collected at all consultations concerning patients with allergic rhinitis from 131 volunteer general practices contacted through the Danish College of General Practitioners.

The practices covered 450,160 persons (8.8% of the Danish population) whose age distribution was similar to that of the total Danish population. Completeness of recording was estimated by the practitioners at the end of the year. Each doctor was asked to form an estimate of the number of cases reported as a percentage of the number of cases which occurred. The following options were offered: Less than 50%, 50–74%, 75–90%, or more than 90%. The practices were further separated into two groups: one which recorded all cases day and night, and one which functioned only during the daytime.

Thus the 131 practices were classified as follows: Group A comprised all 131 practices. Group B comprised 85 practices that estimated their reporting rate as between 91 and 100%. This group represented 250,431 persons (4.9% of the Danish population). Group C comprised 29 practices that recorded full-time. This group covered 73,398 persons. Group C was part of Group B, as its recording rate was more than

90%. The practices were also classified geographically and by the doctors' estimate of the urban/rural ratio of the clientele.

Results are presented concerning patients and consultations.

RESULTS

Patients consulting with or without symptoms

Table 1 shows the total number of patients in groups A, B and C. Fig. 1 presents a graphic distribution of the patients in group B. It appears that allergic rhinitis gives rise to consultation with general practitioners from early childhood until old age, and rather more frequently between the age of five and 45. The highest prevalence rate occurs between 10 and 19 years of age, and especially among boys, whose rate is double that of girls. Until the age of 30, allergic rhinitis occurs more often among males, but after that age it is slightly more common among females. The age and sex distributions were identical in town and country and in all geographical regions. Prevalence varied geographically and according to degree of urbanization (Table 2). The prevalence rate of allergic rhinitis in the capital was two to three times the rate in some provincial areas. In urban regions the prevalence rate was more than twice as high as in rural areas.

Patients consulting with symptoms

The number of patients consulting at least once during the observation year because of symptoms made up eight per 1000 (males: 9‰, females 8‰), i.e. a little less than two-thirds of

Table 1
Prevalence of allergic rhinitis. Total number and rates per 1000 of the practice populations in three groups of practices

	Men		Women		Men + Women	
	Abs.	Per 1000	Abs.	Per 1000	Abs.	Per 1000
A. All practices	2697	12	2786	10	4883	11
B. Practices recording 91–100 %	1812	15	1475	11	3287	13
C. Practices recording full-time	611	17	490	13	1101	15

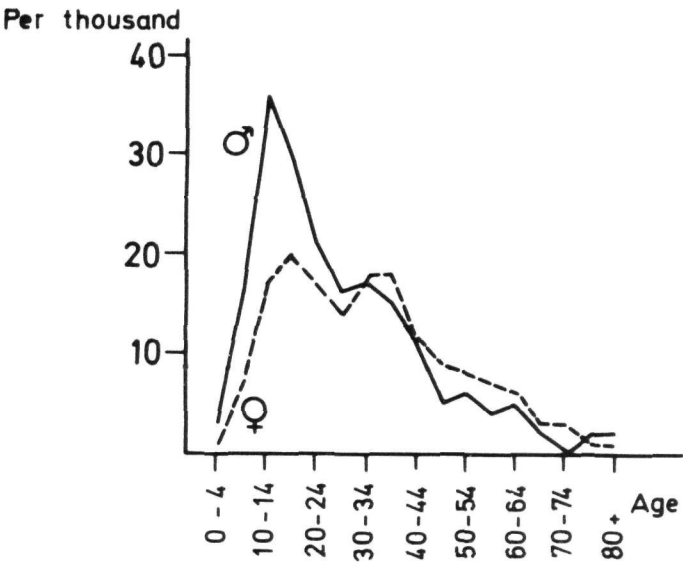


Fig. 1. Prevalence rates for allergic rhinitis. Age and sex distribution. Practices recording 91–100 % (group B).

all patients consulting. The variation by geography and urbanization and the distribution by age and sex in this group was similar to that of the whole patient group.

Consultations with or without symptoms

Patients with allergic rhinitis consulted general practitioners 4.4 times a year on average. Men and women consulted with the same frequency.

Fig. 2 shows distribution by age. The highest consultation rate – 5.6. per year – is seen at the age of highest prevalence.

The number of consultations out of working hours comprised 1% of all consultations for allergic rhinitis. This applied to all types of practices – full-time recording as well as part-time recording.

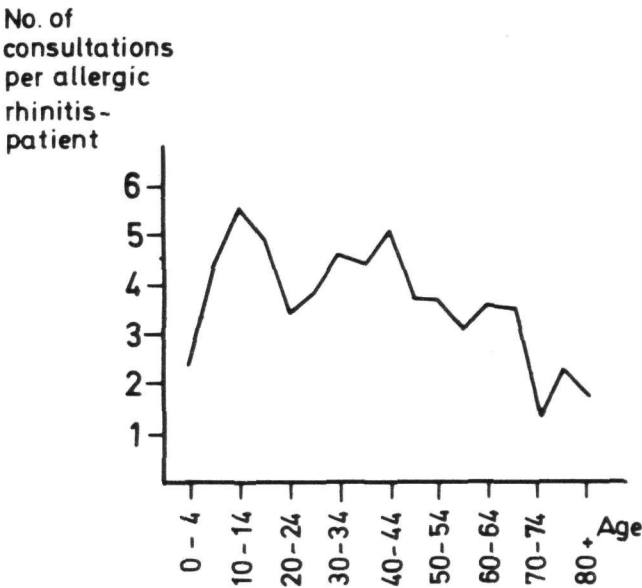


Fig. 2. Average number of consultations per allergic rhinitis patient per year. Age distribution.

Consultations with symptoms

The number of consultations with symptoms amounted to 20–25% of all consultations, thus the consultation rate with symptoms was 1.0. This figure varies little with age.

DISCUSSION

The work load in general practice generated by allergic rhinitis is determined by several factors, among which age and sex are well known. This study shows that geographical and urban/rural circumstances also play an important role. The majority of consultations are unrelated to actual symptoms, but have usually to do with desensitization, repeat prescription, or seeking advice from the practitioners. Thus the strate-

Table 2

Prevalence rates of allergic rhinitis in various geographical and urbanized regions. Practices recording 91–100 %

Urbanization-degree	Copenhagen and suburbs	Sjælland	Provincial areas		Total
			Fyn	Jylland	
100	18	19	–	5	17
66 2/3 – 99	22	15	8	13	15
33 1/3 – 66 2/3	–	13	7	9	9
1 – 33 1/3	–	10	–	7	8
0	–	9	2	7	7
Total	19	14	6	11	14

gy used in general practice for allergic rhinitis is a work load determining factor too. This study does not explain whether the significant geographical and urban/rural differences are related to real differences in the population or to a different approach to this health problem among the doctors or patients in various regions.

The lowest prevalence rate resulted from calculations based on all practices. One third of the practices estimated that they recorded less than 91% of consultations. The prevalence rates from these practices are less reliable than reports from other practices. The rates based on the most consistently recording practices should be considered the most reliable. Practices which recorded full-time reported a higher prevalence rate than all other practices. This cannot be explained solely by the longer working hours as consultations after normal working hours amounted to a mere 1%. It is probable that these practices have been particularly careful about recording. From this study one may conclude that the prevalence rate of allergic rhinitis in Danish general practice between June 1977 and June 1978 lay between 11 and 15 per 1000, and was probably nearer 15 than 11.

In a survey based upon a representative sample of the adult Danish population at about the same time as this study (6) 26 per 1000 of the persons interviewed reported contact with a general practitioner within the preceding year because of hay fever. This figure is one and a half to two times higher than the results of this study. A complete explanation of this finding cannot be given here. Criteria of inclusion in the two studies were different. The data of our study are based upon a professional evaluation of allergic rhinitis, while those of the population study are based upon a lay understanding of the meaning of the words hay fever and hay fever-like disease plus a description of the symptoms. It may be that doctors have applied a narrower interpretation of the condition studied than the interview persons of the population study.

The first British national morbidity study from general practice 1955–56 (3) showed a 1-year prevalence rate of hay fever of 5.0 per 1000. In 1970–71 the second morbidity study

showed a 1-year rate of 10.6 per 1000 (4), which is more similar to the findings of the present study. In Britain the number of patients consulting for hay fever has doubled from 1955–56 to 1970–71, although the overall consulting rate in British general practice has not increased (9). Other British studies from general practices have shown prevalence rates of hay fever of 15.4 (8), 12 (1) and 20 (2) per 1000.

The number of consultations concerning hay fever in the two British national morbidity studies were 1.3 and 1.6. per 100 persons of the population respectively. Even if the absolute number of consultations increased, there was a decline in the number of consultations per hay fever patient from approx. 2.5 to approx. 1.5. per patient per year. The Danish consultation rates as found in this study are about three times as high as those of the last British study. Figures from the British morbidity studies do not include contacts involving desensitization, while the Danish figures include contacts for any reason. More than three-quarters of all contacts in the present study were made for reasons other than symptoms, usually desensitization, which generally involves a series of contacts. Thus a reasonable agreement between consultation rates in Danish and British general practice has been established.

The condition studied is termed allergic rhinitis, even though an allergic aetiology may not be proven. This inconsequence in terminology reflects the general confusion of terms in this field. Mygind (9) has tried to clarify the terminology in this group of diseases. According to his proposals the terms vasomotor rhinitis and hay fever would be more convenient as they include non-infectious sneezing and rhinorrhoea, which is not always allergic and/or seasonal. We assume that this problem created no difficulties among the general practitioners during the data collection, as we have received no comments or questions about it.

The results cannot be considered representative of Danish general practice, even though the age distribution of the study population is similar to that of the total Danish population. The participating doctors were on average younger than the mean of general practitioners

in Denmark. This may indicate attitudinal differences concerning diagnostic and therapeutic procedures.

Professional statistical advice has been continually sought throughout the planning, execution and analysis of this project. As variation tendencies by geography, urbanization, age and sex are evident and based on rather large numbers of patients numerical statistical analysis has been considered superfluous.

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