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Short communication

Disease perception and social behaviour in persistent rhinitis: a comparison between patients with allergic and nonallergic rhinitis

Background: Although the understanding of the pathophysiology and pharmacology of rhinitis has increased within recent years, few studies have examined the impact of rhinitis on patients' behaviour.
Aim: To compare perennial allergic rhinitis (PAR) and perennial nonallergic rhinitis (PNR) in terms of patients' perception of their disease and its psychosocial concomitants.
Methods: Thirty-one PAR patients and 32 PNR patients responded to a standard symptom list and were interviewed in-depth regarding their complaints and the impact of rhinitis on their daily lives.
Results: PAR and PNR patients reported similar somatic and psychosocial complaints. In both disease groups the adverse effects of rhinitis were reported to be substantially limiting, particularly in social contacts, the impact appearing to be more severe in the women.
Conclusion: Rhinitis has a severe impact on the daily lives of patients, women reporting more severe psychosocial effects. Disease perception and social adjustment appear to not depend appreciably on whether or not an objective diagnosis of rhinitis can be established.

O. Rydén[1], B. Andersson[1], M. Andersson[2]

Departments of [1]Psychology and [2]Otorhinolaryngology, Lund University, Lund, Sweden

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Prof. Olof Ryden
Department of Psychology
Lund University
PO Box 213
SE 221 00 Lund
Sweden

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Rhinitis is a common disease increasingly prevalent in the industrialized world. Few studies have explored patients' own perception of it (1–5). Relevant information may be overlooked because of time limits imposed on medical history taking and incorrect responses being made to questionnaires (6). Perhaps more importantly, doctors and questionnaires both tend to ask for what is already known, such as standard symptomatology.

The present study explores two groups of rhinitis patients, one with persistent allergic rhinitis because of house dust-mites and the other with similar nasal symptoms but a lack of 'objective' diagnosis (7). The aim was to evaluate whether these groups differ in their perception of the disease and their ways of coping with it.

Material and methods

Patient selection

The patients comprised cases referred to the Allergy Section at the Department of Otorhinolaryngology, Lund University Hospital, Sweden. To be included a patient had to have received the diagnosis of persistent allergic rhinitis (PAR) to house dust-mites (a positive skin prick test to either *Dermatophagoides pteronyssinus* or *Dermatophagoides farinae* with a weal size at least as large as the histamine standard), but was to have no other positive skin prick test reactions. Patients with persistent nonallergic rhinitis (PNR) were not to have demonstrated any significant skin reactions in the skin prick test panel and there were to be no other apparent causes for their nasal symptoms. They were to have had clinical symptoms for at least 2 years. Ninety-nine patients were invited to participate. Sixty-three accepted (31 PAR, 32 PNR), 34 women (16 PAR, 18 PNR) and 29 men (15 PAR, 14 PNR) (mean age: PAR 34 years, PNR 43 years). The local ethics committee approved the study. All subjects gave their informed oral and written consent.

Procedure

The patients graded their nasal symptoms from 0 = not present to 5 = severe on the Allergy Clinic's standard symptom questionnaire and then participated individually in a semi-structured interview concerning their symptoms and their quality of life. The interviews, audio-recorded, lasted up to an hour. Semi-structured interviews have been shown generally to yield reliable and valid qualitative research data. They are employed particularly for gaining access to a patient's experiences by use of nonmedical language (8, 9).

Analysis of data

All answers were transcribed and were categorized based in terms of qualitative content. Chi-square and Fisher exact tests were used in comparing frequencies for the PAR and PNR groups and for women and men regarding the content categories. The *t*-test was

used in comparing means of the continuous variables. All *P*-values are two-tailed. Statistical analysis was performed using SPSS 10.0.

Results

Nasal blockage was the symptom on the clinic's scoring list considered most predominant and troublesome (PAR = 90%, PNR = 94%), the PNR patients reporting it to be more severe (3.6 *vs* 2.9, $P < 0.05$). The interviews also indicated sneezing to be more common in the PAR than the PNR patients (58% *vs* 19%, $P < 0.01$) and throat irritation, nasal dryness and headache to be fairly common generally (PAR = 23, 36 and 7%; PNR = 16, 44 and 25%).

A broad spectrum of irritants was reported, notably similar in the two groups, but the PNR patients were less able to specify triggers ($P < 0.04$). In answering the question 'What do you do to control or reduce your symptoms?' about three-quarter of the patients referred to medication. Prescribed medication alleviated symptoms in about half the patients (Table 1a). More PNR than PAR patients took either nonprescribed medication ($P = 0.02$) or no medication at all, referring to its having no effect or to their having only mild symptoms. Asked to judge the effectiveness of medication (Table 1b), more PNR than PAR patients ($P = 0.04$), reported minor effects or none at all.

About half of the PNR and a third of the PAR patients judged their quality of life to definitely have suffered, referring to negative mood effects and to not taking part in various activities (Table 2a). More than half of the patients in both groups said their symptoms often made them irritated or depressed (Table 2b). The finding that 52% of the PAR patients and 35% of the PNR patients restricted their choice of occupation or residence, and that their social life was limited, either privately or at work, especially in the PNR group (Table 3) suggested the intrusiveness of both groups' symptoms in daily life. A further inconvenience, particularly among the PNR patients, was that of explaining their symptoms to others, for instance when their condition was suspected of being infectious. Nearly two-thirds of the PNR patients as compared with 39% of the PAR patients said their symptoms were visible and that they were often asked whether their condition was infectious. About half of the PNR patients endeavoured to avoid questions about their symptoms and 41% referred to being allergic or hypersensitive (Table 4). Roughly a third of the patients said their condition was socially embarrassing and about a quarter of them reported that they were sometimes sick and unable to work because of their symptoms. They also experienced protracted throat or sinus infections associated with their rhinitis, which led to frequent and often extended periods of sick-leave.

Table 1. Interview responses regarding alleviation of symptoms due to prescribed medication and its effectiveness: (a) Are your symptoms alleviated by medication? (b) How effective is medication?

Interview responses	PAR (%)	PNR (%)
(a)		
Yes, prescribed medicine on a regular basis	17 (55)	13 (41)
Yes, prescribed medicine, but only rarely because of possible side-effects	9 (29)	4 (12)
Yes, nonprescribed medicine	2 (6)*	10 (31)
No, I do not need medicine or medicine or it has no effect	3 (10)	5 (16)
(b)		
Very effective, reduces symptoms by 80–100%	13 (42)	11 (34)
Fairly effective, reduces symptoms by 50–79%	8 (26)	4 (13)
Only a small effect, if any, reduces symptoms by 0–49%	3 (9)*	11 (34)
Effective but rarely takes it because of severe side-effects and/or fear of dependency	3 (10)	3 (10)
Takes no medication	4 (13)	3 (9)

* $P < 0.05$.

Table 2. Interview responses regarding quality of life and mood effects: (a) Has your quality of life been affected by your symptoms? (b) Has your mood been affected by your symptoms?

Interview responses	PAR (%)	PNR (%)
(a)		
Yes, definitely (feeling depressed, tired, or not taking part in activities)	9 (29)	15 (47)
To some extent	6 (19)	7 (22)
Don't let myself be kept down	7 (23)	3 (10)
No	9 (29)	7 (21)
(b)		
Yes, I'm easily irritated	16 (51)	18 (56)
Yes, I easily become depressed	3 (10)	7 (22)
Little or not at all	12 (39)	7 (22)

Table 3. Interview responses regarding social life and family relationships: Do your symptoms limit your relations with your, family, your friends or at work?

Interview responses	PAR (%)	PNR (%)
Yes, always or part of the time	10 (33)	17 (53)
Both privately and at work	4 (13)	8 (25)
Just privately	3 (10)	6 (19)
Just at work	3 (10)	3 (9)
I don't let myself be kept back	6 (19)	4 (13)
No	15 (48)	11 (34)

Table 4. Interview responses regarding the ability to explain symptoms to others: How do you explain your symptoms to other people?

Interview responses	PAR (%)	PNR (%)
I am allergic (PAR); I have VMR or I am hypersensitive (VMR)	18 (58)	13 (41)
Does not explain, consider symptoms insignificant	9 (29)	5 (15)
Avoids the question, does not explain	2 (7)*	14 (44)
Doesn't know	2 (2)	–

* $P < 0.01$.

The women more frequently than the men regarded their symptoms as being visible and as giving rise to questions by others ($P = 0.004$), more frequently experienced their symptoms as being trying rather than mild ($P = 0.03$), and as being socially embarrassing rather than neutral ($P = 0.04$), more often become irritated or depressed by their symptoms ($P = 0.004$), more often considered their quality of life to have been negatively affected ($P = 0.007$), and more frequently reported their symptoms to have become more severe in recent years ($P = 0.004$). The women took more active measures than the men to alleviate their symptoms, as judged in terms of the categories 'cleaning house', 'getting fresh air or rest' and 'avoiding irritants', as well as such standard measures such as 'taking medication', 'blowing one's nose' and 'removing rugs, etc. at home' ($P = 0.004$).

Discussion

To the best of our knowledge this is the first study to explore psychosocial characteristics in two groups of patients with upper airway diseases having similar symptoms but differing aetiology. The main finding is that use of in-depth interviews yielded additional information about the patients' diseases compared with that obtained by symptom scoring and quality-of-life assessments (1–5). The overall results indicate PAR and PNR patients to experience similar complaints and triggering irritants, and to take similar measures to prevent or alleviate their symptoms, coinciding patterns that can be expected to derive from physiological (10) as well as psychological (11, 12) factors.

A minority in each group observed a gradual mitigation in their symptoms in recent years, whereas the remaining patients experienced either no change or successively more pronounced symptoms. This agrees with Druce's (13) observation that perennial allergic rhinitis has a poor prognosis, whereas there is a lack of previous information regarding the natural course of PNR.

The emotional and social burden of their illness as reported by the patients corroborates and extends previous observations (1–5). Particularly notable is the finding that about a fourth of the patients in both groups had restricted their choice of occupation or residence in order to reduce their symptoms or avoid situations in which they experienced their symptoms as socially embarrasing. Furthermore, even if few patients, less than 10%, had been on sick leave because of their symptoms, many more than this maintained that they had recurrent airway and sinus infections, supporting previous observations of an association between PNR and respiratory tract infections (6).

Quite a few of the patients rarely or never took medication for their complaints, referring to side-effects or to its having no significant effects. More of the PNR than of the PAR patients took either nonprescribed medication or no medication at all but tended to be dissatisfied with its effectiveness. The heterogenous picture shown here may reflect either placebo or nocebo effects of the prescribed and the nonprescribed medication. Many of the patients failed to adhere to their doctors' advice and were not aware of the effects or of the proper use of various medications, such as the risk that decongestant sprays can cause persistent rhinitis. Others refrained from taking antihistamine tablets because of the presumed side-effects, particularly fatigue and dependency, which is notable as these side-effects are not associated with second-generation antihistamines (14). This finding underlines the importance of patient information and education.

The stronger subjective impact of rhinitis on the women appears not to have been reported before and may have several explanations. Rhinitis symptoms can be aggravated in response to the strain related to womens' multiple roles in work and at home (15). Reporting somatic complaints may be more compatible with their genus role, which may also help explain the women's greater susceptibility to the social aspects of rhinitis symptoms as well as their greater readiness to take action to prevent or alleviate symptoms. Clearly, the precarious situation of the female patients deserves attention from the care-givers involved.

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