

new form of health services? And, if proved beneficial, will there be the necessary commitment to put them into practice?

*Serviço de Imunoalergologia Hospital S. João e

Serviço de Bioestatística e Informática Médica da Faculdade de Medicina da Universidade do Porto
Alameda Hernani Monteiro
4202-451 Porto
Portugal

Tel: +35 191 476 7661

Fax: +35 122 509 8670

E-mail: jfonseca@med.up.pt

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Concurrent allergic diseases: a cross-sectional study in a French population

I. Annesi-Maesano*, A. Beyer, F. Marmouz, P. Mathelier-Fusade, D. Vervloet, V. Bauchau

Key words: allergic rhinitis; asthma; comorbidity; dermatitis; urticaria.

Epidemiological (1–3), clinical and immunological studies (3, 4) have consistently provided evidence

for an association between asthma and allergic rhinitis (AR). While comorbid associations between

AR and sinusitis, conjunctivitis, otitis media, or nasal polyposis have also been reported (3), the extent to which concurrent conditions increase the burden of allergic disease is unknown. It is also unclear whether comorbid relationships exist across organ types, i.e. between allergic respiratory disease/s and allergic skin disease/s and food allergies.

We conducted a cross-sectional study to explore the relationships between a wide spectrum of allergic disease. A total of 1819 specialists in France (612 dermatologists, 510 ENT specialists, 372 pneumologists and 325 allergy specialists) enrolled 3939 adult patients presenting for treatment of allergic disease, between February 2003 and July 2003. Following informed consent, both the patients and doctors completed a questionnaire, which included the patient's diagnosis at the time of enrolment, history of any concurrent allergic diseases occurring within the past 12 months, and parental history of allergies and other possible risk factors for disease. Only subjects with data from both the doctor and the patient questionnaires were included in the analysis of the risk of comorbid disease and the prevalence of current and comorbid allergic disease. Risk of comorbid disease was assessed by calculating the odds ratio (OR) using a logistic regression model,

Allergic patients have an increased risk for comorbid allergic disease.

after adjustment for age, gender, smoking, maternal and paternal smoking, and maternal smoking during pregnancy.

Table 1 shows the results for 3916 evaluable patients (mean age 38 years; 62% female). The majority suffered from allergic respiratory and skin conditions (AR 54.8%, asthma 13.3%, atopic dermatitis 11.7%, contact dermatitis 7.2% and allergic urticaria 6.1%). Conjunctivitis, sinusitis, nasal polyposis, anaphylactic shock and Fernand-Widal syndrome were diagnosed less frequently (1.6%, 1.0%, 0.9%, 0.4% and 0.4% of the population, respectively) and food allergy rarely (0.2% of the population). Overall, 67% of the patients suffered from at least one other concurrent allergic disease. Patients suffering from a current allergic respiratory condition (including asthma, AR) or a current skin condition (including atopic dermatitis, allergic urticaria and contact dermatitis) predominantly suffered from and were at greater risk for comorbidity with another allergic respiratory or skin condition respectively. In this regard, the prevalence of concurrent AR was about 1.7-fold greater in patients suffering from asthma (82%), compared with patients suffering from atopic dermatitis, allergic urticaria or contact dermatitis (mean 49%). The risk of suffering from concurrent AR was significantly increased 4.5- to 7.0-fold in patients suffering from asthma (OR = 1.57) compared with patients suffering from atopic dermatitis (OR = 0.24), allergic urticaria (OR = 0.35) or contact dermatitis (OR = 0.22). A similar pattern for prevalence and risk of concurrent AR was noted for patients with nasal polyposis, sinusitis and conjunctivitis, compared with patients suffering from skin allergies. Although the small proportion of patients with food allergy suffered mostly from concurrent AR (81%), they also demonstrated increased risk for comorbidity with any of the other allergic conditions.

Our observations of a high risk of concurrent AR and conjunctivitis are in accordance with those of others (5, 6), as are those for the increased risk of comorbid AR and asthma (1–4). Collectively these findings suggest that the

Table 1. Distribution of current and concurrent allergic disease in an adult population

Current disease	Percentage of population	Percentage of patients with concurrent allergic disease (OR; 95% CI)						
		Asthma	Allergic rhinitis	Conjunctivitis	Atopic dermatitis	Allergic urticaria	Contact dermatitis	Food allergy
Asthma	13.3		82 (1.57; 1.30–1.90)	37 (1.14; 0.97–1.34)	15 (0.72; 0.58–0.88)	11 (0.86; 0.68–1.08)	9.7 (0.56; 0.44–0.71)	5 (1.88; 1.28–2.76)
Allergic rhinitis	54.8	32 (1.57; 1.30–1.90)		43 (6.80; 5.31–8.70)	12 (0.24; 0.20–0.28)	9.6 (0.35; 0.28–0.43)	9.1 (0.22; 0.18–0.27)	4 (1.47; 0.91–2.38)
Conjunctivitis	1.6	31 (1.14; 0.97–1.34)	93 (6.80; 5.31–8.70)		12 (0.49; 0.40–0.60)	12 (0.50; 0.40–0.63)	9.6 (0.75; 0.59–0.93)	5 (1.81; 1.24–2.64)
Atopic dermatitis	11.7	24 (0.72; 0.58–0.88)	49 (0.24; 0.20–0.28)	23 (0.49; 0.40–0.60)		13 (1.01; 0.77–1.32)	19 (1.54; 1.21–1.95)	5 (1.42; 0.91–2.20)
Allergic urticaria	6.1	24 (0.86; 0.68–1.08)	52 (0.35; 0.28–0.43)	29 (0.50; 0.40–0.63)	18 (1.01; 0.77–1.32)		17 (1.01; 0.76–1.35)	7 (1.99; 1.27–3.12)
Contact dermatitis	7.2	19 (0.56; 0.44–0.71)	46 (0.22; 0.18–0.27)	22 (0.75; 0.59–0.93)	24 (1.54; 1.21–1.95)	15 (1.01; 0.76–1.35)		5 (1.12; 0.67–1.85)
Food allergy	0.2	40 (1.88; 1.28–2.76)	81 (1.47; 0.91–2.38)	47 (1.81; 1.24–2.64)	25 (1.42; 0.91–2.20)	26 (1.99; 1.27–3.12)	19 (1.12; 0.67–1.85)	
Anaphylactic shock	0.4	23	36	18	5	14	5	0
Sinusitis	1.0	28	85	38	16	12	13	3
Nasal polyposis	0.9	36	80	18	10	6	4	2
Fernald-Widal syndrome	0.4	61	55	12	6	15	12	12

ORs are mirrored in the table.

ORs and% concurrent disease were not computed for rare diseases.

underlying immunopathological mechanisms may be similar in respiratory allergic conditions. Indeed, the finding that individuals with a given allergic disease type have a higher risk of suffering from concurrent conditions within the same disease type (i.e. respiratory or dermal) provides support for this hypothesis and further suggests that the underlying mechanisms may be similar within, but not across, 'organ types'.

*EPAR

INSERM U707

Medical School Saint-Antoine

27, rue de Chaligny

F75571 Paris CEDEX

Tel: + 33 1 44738445

Fax: + 33 1 44738462

E-mail: annesi@u707.jussieu.fr

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Munksgaard

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