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INCIDENCE OF ALLERGIC DISEASES IN GENERAL PRACTICE

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The symptoms of allergic disorders depend upon the antigen-antibody reaction in the shock organ. Von Pirquet defined allergy as an "acquired specific altered capacity to react." Even after 50 years of research in this field, Pepys (1953) points out that this statement is still valid.

The findings of a collagen lesion in serum sickness, periarteritis nodosa, lupus erythematosus, and rheumatic fever, and the improvement in these conditions after cortisone or A.C.T.H. therapy, suggest that allergic reactions might play some part in their aetiology. We decided to investigate the incidence of five of the common allergic diseases in our practice—namely, bronchial asthma, allergic rhinitis, urticaria, atopic eczema, and drug allergy.

The practice, an industrial one comprising about 4,000 patients, is carried on from two surgeries. Details of attendances and treatment are recorded daily in each surgery. The period of this investigation was from September 1, 1952, to September 1, 1953.

Diagnosis of the Allergic Diseases

Only a brief account of the diagnosis and differential diagnosis of allergic diseases is given.

The general practitioner has the best opportunity of diagnosing common allergic diseases. A careful history-taking is most important, and should include the main complaints, details relating to the cause of illness, past medical history, family and social history, environmental background, and history of previous treatment. History-taking has been emphasized by Tuft (1949), Herxheimer (1952), Sheldon *et al.* (1953), and other allergists. The therapeutic application of adrenaline and ephedrine in acute attacks of asthma and antihistamines in allergic rhinitis and urticaria is helpful in establishing the diagnosis.

We agree with Freeman (1950) that x-ray examination of the chest in asthma is not essential. Laboratory investigations, skin tests, and estimations of vital capacity are more useful for the management of the patients than for diagnosis. Cases of chronic bronchitis and emphysema were excluded.

In allergic rhinitis a history of recurrent attacks of rhinorrhoea, sneezing, itching in the eyes, nose, and pharynx, and a general feeling of fatigue are the complaints. Examination reveals bluish oedema of the nasal mucosa and sometimes polypi. Sheldon *et al.* point out that sore throat and enlargement of cervical lymph nodes are not common

in allergic rhinitis. The finding of large numbers of eosinophils in nasal smears helps in doubtful cases.

Urticaria may be acute or chronic: the acute type generally disappears within a few days or weeks; chronic urticaria may continue for months or years (Tuft, 1949; Sheldon *et al.*, 1953). The patient complains of an itching or burning sensation. The diagnosis is made on the finding of weals, which may vary in size and shape.

Atopic eczema was diagnosed by the finding of superficial cutaneous eruptions involving the flexural surfaces; adequate history is very important (Vickers, 1952; Sheldon *et al.*, 1953).

Drug allergy presents a great problem. A memorandum on the sensitivity of antibiotics (*Med. Offr.*, 1953) emphasizes the importance of this subject. Reports of deaths attributed to phenylbutazone have appeared in the medical and lay press. Penicillin may cause dangerous or even fatal reactions (Pick and Patterson, 1953; Siegal *et al.*, 1953). Drug allergy may develop after ingestion, parenteral injections, or contact with the offending agent, and it may manifest itself in the immediate or delayed type of reaction (Rackemann, 1953; Pepys, 1953; Sheldon *et al.*, 1953). The manifestations of drug allergy are various, the commonest being the skin lesions. The most serious, however, are agranulocytosis and thrombocytopenia, and thiouracil is the common cause of the former and "sedormid" (Grant, 1953) of the latter. Diagnosis depends on history, general examination, and cessation of symptoms on stopping the offending drug.

Differential Diagnosis

The diagnosis of straightforward cases of allergic disease, like many other medical or surgical conditions, is not difficult. The elderly hypertensive and arteriosclerotic patient with incipient cardiac failure gets attacks of dyspnoea; the child with recurrent attacks of bronchitis and bronchiolitis presents wheezing and cough. Periarteritis nodosa or Löfller's syndrome (Rubin, 1947) brings on asthma-like attacks. Here the eosinophil count is of great value. Bronchogenic carcinoma is getting common, and we encountered one patient suffering from it who self-diagnosed asthma.

Septal deflections, enlarged turbinates, enlarged tonsils and adenoids, infective sinusitis, and the common cold are the conditions mistaken for allergic rhinitis.

Children like to scratch the itchy urticaria weals; urticaria should then be differentiated from scabies or chickenpox.

In atopic eczema the secondary changes resulting from scratching and infection may lead to a variety of skin abnormalities: erythema, papules, wealing, scaling, pigmentation, and lichenification. Cases of seborrhoeic dermatitis and contact dermatitis were excluded.

Results of Observations

Table I shows the age and sex incidence of the five allergic diseases. Table II gives the percentage incidence of allergic diseases. Table III shows the duration of symptoms for each group. Drug allergy is of special interest

TABLE I.—Age and Sex Incidence of Allergic Diseases

Age	Asthma		Urticaria		Allergic Rhinitis		Atopic Eczema		Drug Allergy	
	M	F	M	F	M	F	M	F	M	F
0-1 ..	1		9	8			1			
2-4 ..	6		11	4	1		2			
5-9 ..	4	2	5	5		1	2			
10-14 ..	3	2	5	5	2					
15-19 ..	4		2	2		1				1
20-29 ..	3	2	1	2	2		1	2	1	
30-39 ..	6	9	4	1	6	4	6	1	2	2
40-49 ..	4	3	1	2	4	4	5	2	1	1
50-59 ..	4	9		3	1	3	1	1	1	2
60-69 ..		5		1	1		3			2
70+ ..	1			1						
Total ..	36	32	38	34	17	13	18	9	4	8
	68		72		30		27		12	

TABLE II.—Incidence of Allergic Diseases

	Asthma	Urticaria	Allergic Rhinitis	Atopic Eczema	Drug Allergy
Allergic cases	32.5%	34.5%	14.4%	12.9%	5.7%
Total practice of 4,000 patients	1.7%	1.8%	0.8%	0.7%	0.3%

TABLE III.—Duration of Symptoms in Allergic Patients

Duration	Asthma		Urticaria		Allergic Rhinitis		Atopic Eczema		Drug Allergy	
	M	F	M	F	M	F	M	F	M	F
< 1 month	4	3	28	25			1		4	8
1- months	4	1	1	2			4	1		
3- "	2		1	2	1		4	2		
6- "	1	1					3	2		
1- year	2	4	3	3		2	2	2		
2- years	4	2	4	1	3	2	1	2		
3- "	3	5				2	2			
5- "	10	7	1	1	8	4	1			
10- "	4	6			4	2				
15- "	3	1			1					
20- "	1	1								
30+ "	2	2								

TABLE IV.—Details of Patients Suffering from Drug Allergy

No.	Sex	Age	Drug	Route of Administration	Manifestations
1	F	43	Phenylbutazone	Oral	Generalized urticaria
2	F	62	"Sulphatriad"	"	Skin rash, conjunctivitis
3	F	51	"Artane"	"	Generalized urticaria
4	M	35	A.T.S.	Intramuscular injection	Generalized urticaria, joint pains
5	F	67	Methylthiouracil	Oral	Agranulocytosis
6	M	28	Penicillin	Intramuscular injection	Generalized urticaria
7	F	57	"Acriflex"	Local application	Skin rash
8	F	18	Diphtheria immunization	Intramuscular injection	Generalized urticaria
9	F	35	Auristillae phenolis	Local application	Skin rash of face
10	M	56	Morphine hydrochloride	Subcutaneous injection	Circulatory collapse
11	F	38	Acetylsalicylic acid	Oral	Asthma
12	M	37	Streptomycin	Intramuscular injection	Generalized urticaria

TABLE V.—Patients with Collateral Allergy

No. of Patients	Sex	Main Complaint	Other Complaints
5	M	Asthma	Allergic rhinitis
12	F	"	"
1	F	"	Urticaria
2	F	"	Atopic eczema
2	F	Urticaria	Allergic rhinitis
1	M	"	Urticaria
1	M	Atopic eczema	"
1	M	Allergic rhinitis	Atopic eczema
1	F	"	"

from the therapeutic point of view, and details of the patients suffering from it are given in Table IV. Table V shows the patients with collateral allergy—that is, suffering from more than one form of allergic disease simultaneously. Such patients have been listed once only. They are included in the group which covers the most serious of their complaints—for example, a patient with severe recurrent attacks of asthma and also hay-fever is listed with the asthma cases. This is done to avoid duplicating the figures and to keep a true picture of the incidence.

Discussion

The figures given in the tables may not represent the actual incidence of the allergic conditions in this country, but they do give the true figures for this section of the population who come to the average surgery for these complaints.

Asthma.—Of 68 asthma cases, 45 fall within the working-age group (20 to 70 years), and 37 suffered from asthma for over five years. Although we are not discussing the management of asthmatics we would like to mention that our attitude towards these patients was similar to that which

the average practitioner takes with his epileptic patients. They were encouraged to stay at work, kept under constant supervision, and invited to pay frequent visits to the surgery, not only for treatment, but to report their progress. The results were good, and most of them are usefully employed.

Urticaria.—Out of 72 patients 32 were under 5 years of age. As is well known, "spots" usually compel most parents to attend the surgery promptly, hence the high proportion of small children in this group. Table III shows that 53 cases were of the acute variety, lasting less than four weeks. Some mothers could trace the offending allergen to foods. Sheldon *et al.* (1953) explain the greater incidence of food allergy in children by the fact that small children appear to absorb undigested food particles more readily than adults.

Allergic Rhinitis.—As stated before, these figures may not represent a true picture of this condition. The general public tend to neglect or ignore the usual allergy, and the children who undoubtedly suffer from it are labelled as "tonsils and adenoids." Doctors often make this mistaken diagnosis. There were only 30 cases, and only one had the condition for less than six months. The rest had suffered for two years or more. One child under 5 was diagnosed, and only four patients aged 5 to 19. There were 23 cases over the age of 30. Table V shows that 20 allergic patients had allergic rhinitis as collateral allergy and were therefore not included in these figures.

Atopic Eczema.—This condition tends to occur with acute exacerbations, and the figures support this clinical finding. Only five children were affected by it, and 22 patients were over 20. Seventeen patients had this condition for less than one year, and only six had it for more than two years.

Drug Allergy.—In this group 12 patients suffered from definite drug allergy. In each case the symptoms lasted less than a month; 11 of the patients were over 20 years of age. The list of offending drugs becomes longer every day, and the incidence of drug allergy must vary with the habits of individual doctors in drug prescribing. The unjustified use of well-recognized potential drug allergens without clear indication will greatly alter these figures—for example, penicillin ointments and creams for all types of skin blemishes or sulphonamide tablets for elevation of temperature. We tend to avoid antibiotics in local applications, and do not use heavy metals and other drugs recognized to give a high incidence of drug allergy, especially if alternative measures will suffice. In fairness to the drug manufacturers it should be stated that certain drugs are often blamed as allergens when some inactive ingredient in the pill or medicine is the actual allergen. Indeed, some useful drugs have been banished into oblivion because of slight reactions which may have been wrongly attributed to their use. Lastly, drug allergy may give rise to some very serious and sudden reactions, and this should be kept in mind when drugs are given parenterally.

Summary

Observations were made for a period of twelve months on the incidence of five allergic conditions: asthma, urticaria, allergic rhinitis, atopic eczema, and drug allergy in a general practice.

Tables give the details of these observations.

The findings and their significance are discussed.

Special note is made of drug allergy.

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