

COMPARATIVE STUDIES OF SKIN HYPERSENSITIVITY

Z. Krajina, Ž. Poljak and F. Kosoković, Zagreb, Yugoslavia

In studying vasomotor rhinitis for many years we found that our patients were mostly intellectuals and workers exposed to dust, while peasants, who mostly gravitate to our clinic, had rarely the symptoms of vasomotor rhinitis. In some areas of our country the peasants are affected by the infection of paranasal sinuses, which have the infectious ethiology. That is the reason that in our study of the respiratory mucous membrane we made it our task to examine the intracutaneous tests on inhalant allergens in different kind of people. We chose the same groups of people only in connection with their occupation, not paying attention to the fact whether in these groups were presented any allergic diseases or troubles of the upper respiratory tracts. The age of our cases was between 20 and 40 years, when the intracutaneous reactions are the most prominent.

The word hypersensitivity indicates a state of specifically altered reactivity depending on an antigen-antibody reaction. In respiratory allergy external exogenic allergens which come on the nasal mucosa can lead to the positive local or general cutaneous reaction in the case of individuals with the allergic disposition in manifest or latent form. Especially greater exogenic exposition leads to positive reactions in the individual with the latent predisposition which is present in 20-30% of all population. Meanwhile, besides this exogenic factor there exist a lot of endogenic disturbances on the base of neurovegetative disbalances, which can accelerate the development of these positive reactions. Parasympathicomimetic state supports the development of anticorps but the sympathicomimetic reaction has the reverse effect. In the experimental animals the damage of hypothalamus leads to the change of these cutaneous reactions. This means that many stresses, beginning from the close environment of city agglomerations, different occupations and psychogenic charges can, through the neurocirculatory mechanisms, change the reactive capacity of organism and in this way the reactive capacity of the respiratory mucous membrane. Often we find the changes of these reactions in the same individual after certain diseases or other biologic changes inside the organism. The best example is the different age of patients, which shows less or greater inclination to these positive or negative cutaneous reactions. Rackemann and Simon, Grow and Herman, Herxheimer, Mc Invoy, Sutton, Utidjian and Utidjian were cited, all of whom reported that about 50% of nonallergic individuals had some positive skin reactions. Pearson, on the other hand, found the incidence of positive skin reactions in nonallergic individuals to be under 5%. Curran's and Goldman's study of the incidence of positive skin tests in 100 nonallergic subjects using nine allergenic extracts revealed one or more positive reactions in 9% of

the subjects when the scratch and endodermal methods were combined. These results are compared with an incidence of one or more positive reactions in 90% of a group of allergic patients and 50% of a group of nonallergic individuals who came from allergic families.

In our studies we were putting ourselves the following questions:

1. The relationship in skin hypersensitivity in different groups of people (peasants, workers and intellectuals). With the workers we used two groups in relation to the different pollution of air in factory.
2. Pathological objective finding of the nasal mucosa related to skin hypersensitivity.
3. Pathological symptoms of the nose of the patients related to skin hypersensitivity.
4. Relationship of positive smear of eosinophils in the nose to the skin test and to the clinical finding of the nose.

In our investigations we intended to have quantitatively the same groups but the objective reasons did not let us stick to these intentions.

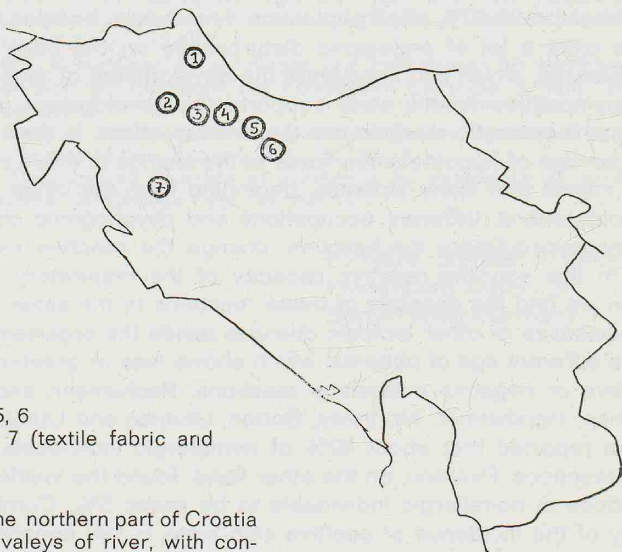
CONCLUSIONS

1. We made skin tests on 11 respiratory allergens in 936 people of different occupation (peasants, workers and intellectuals). The people are living in the northern part of Croatia (Figure 1).
2. The people were not chosen by the symptoms or the resp. illness, but at random from these different groups. Age was between 20 and 40 years.
3. In correlation with the examined number we found positive skin test in

Figure 1

Legend a

1. Cakovec
2. Zagreb
3. Cazma
4. Voćin
5. V. Zdenci
6. Sl. Pozega
7. Bihać



Peasants: 1, 3, 4, 5, 6

Intellectuals: 2, 4, 7 (textile fabric and wood industry)

All places are in the northern part of Croatia and Bosnia in the valeys of river, with continental climate.

Table 1. Comparative study of skin hypersensitivity

	Peasants 300	Workers		Intellectuals
		A: 181 (less exposed to dust 0-1000 part. in cc)	B: 223 (more exposed to dust 2000-4000 part. in cc)	A: 178 students B: 54 other intel. occupation 232
Positive	70 (23,33%)	94 (52%)	130 (58,3%)	131 (56%)
Negative	230 (76,67%)	87 (48%)	93 (41,7%)	101 (44%)
1. House dust	49	82	121	113
2. Animal's hair	17	11	27	19
3. Feathers	25	17	46	60
4. Linen of herbal origin	11	27	33	44
5. Linen of animal origin	3	7	20	16
6. Grass pollens	2	3	6	12
7. Tree pollens	4	7	13	7
8. Bacterial vaccine	6	2	6	6
9. Moulds	6	12	15	13
10. Monilia albicans	4	2	9	10
11. Tobacco	3	4	8	13
	130 (43%)	174 (96%)	304 (136%)	313 (134%)
Monovalence:	34	62	52	51
Polyvalence:	36	68	42	80
Physical allergy: 1 case (negative)		The length of working occupation and skin hypersensitivity		Physical allergy: 1 case (negative)

Legenda:

Positive = positive intradermal test
 Negative = negative intradermal test

	Positive	Negative
0—3 yrs	41	40
Above 3 yrs	79	59

percentage as following: peasants 23,33%, workers exposed to less dust (A) 52% and exposed to more concentrated dust (B) 58,3% and intellectuals 56% (Table 1).

4. All positive skin tests together correlated to the examined number are following: peasants 45%, workers A 96%, workers B 136%, and intellectuals 134%. In this way there exists a real difference between the two groups of workers (Table 1).

5. The skin hypersensitivity corresponds to the length of the working occupation (Table 1).

6. Clinically we found 17 cases of vasomotor rhinitis and 14 cases of nasal polyposis. We could not find any correlation among objective finding of the nasal mucosa to the skin positive tests except nasal polyposis (13 positive and 1 negative). This statement is especially important for the pale and livid colour of mucosa because it is considered as the objective finding of allergy (Table 2).

7. The positive nasal symptoms as obstruction, secretion and itching cannot be considered allergic symptoms either (Table 3).

8. Scattered number of eosinophils in the nasal smear is not always the

Table 2. Pathologic objective finding of the nasal mucosa related to skin hypersensitivity

	Peasants		Workers				Intellectuals	
			A		B			
Pale mucous membrane	10+	—19	2+	—5	0+	—2	8+	—5
Livid mucous membrane	15+	—23	5+	—3	8+	—12	6+	—7
Injected mucous membrane	2+	—1	4+	—2	4+	—2	7+	—4
Edema of the mucous membrane	1+	—7	2+	—1	4+	—6	4+	—3
Rhinitis anterior	3+	—5	1+	—0	5+	—2	4+	—4
Rhinitis catarrhalis	10+	—11	7+	—4	21+	—15	2+	—3
Polyposis nasi	8+	—1	3+	—0	1+	—0	1+	—0
Rhinitis atrophicans	4+	—6	3+	—3	3+	—6	2+	—1
Rhinitis vasomotoria	1+	—1	1+	—0	3+	—5	2+	—4

Legenda

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Table 3. Pathological symptoms of the nose of the patients related to skin hypersensitivity

	Peasants		Workers				Intellectuals	
			A		B			
Obstruction of the nose	14+	—23	4+	—3	26+	—8	35+	—13
Secretion	4+	—4	7+	—2	7+	—3	28+	—11
Bleeding	5+	—6	0+	—0	12+	—2	0+	—0
Itching	1+	—5	0+	—0	2+	—0	12+	—3
Pain	6+	—7	1+	—0	3+	—2	0+	—0
Crusts	0+	—1	0+	—0	0+	—0	0+	—0
Frequent cold	4+	—4	5+	—1	8+	—5	12+	—3
Inflammation of sinuses	2+	—11	1+	—4	3+	—8	9+	—4

Legenda

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Table 4. Relationship of the positive eosinophils smear of the nose to the skin test and to the clinical finding of the nose

(317 smears)

Eosinophils	Skin test		Positive clinical finding of the nose	
Small number: 42	26+	—12	25	
Large amount: 11	10+	—1	11	

Legenda

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Table 5. Deviation of the nasal septum related to positive finding of the nasal mucosa and to the subjective troubles of the nose

Septum deviation of greater degree	Positive finding of the nasal mucosa	Subjective troubles
180	63 (35%)	37 (20%)

indicator of nasal allergy. The large amount of eosinophils in the nasal smear is the indicator of nasal allergy (Table 4).

9. At the same time we examined the correlation of the pronounced deviation of nasal septum to the positive finding of the nasal mucosa and to the subjective troubles. In 180 cases of nasal septum deviation there were 63 positive findings of the nasal mucosa (35%) and 37 with subjective nasal troubles (20%), (Table 5).

SUMMARY

Three groups of people (peasants, workers and intellectuals) were tested intracutaneously with 11 inhalant allergens. Routine ENT examinations were performed at the same time and random nasal smears were obtained as well. The results are given.

RÉSUMÉ

Trois groupes d'hommes (paysans, ouvriers et intellectuels) ont été testés souscutanés avec 11 allergènes respiratoires. En même temps les examens otorhinolaryngologiques de routine ont été réalisés et au hasard des prélèvements nasal ont été aussi pratiqués. Les résultats sont donnés.

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4 Salata, 41000 Zagreb, Yugoslavia.

This work was supported by the Council for Science Work of Croatia.