

PRO EXPERIMENTIS

Clinical Investigations on the Relation Between Macromolecular Transport and Chemical Sensitization

Our procedure, based on macromolecular transport by the lymphatic system of the human skin, was submitted to clinical investigations. The tests were performed in the manner described¹. The patch tests were carried out according to Jadassohn-Bloch. For concentrations and solvents see BURCKHARDT². The following substances were used: (1) turpentine, (2) sublimate, (3) potassium bichromate, (4) formaldehyde, (5) *para*-phenylenediamine, (6) nickel sulphate, (7) Novocaine, (8) *Oleum rosarum*, (9) soda, (10) industrial spirits, (11) *para*-ethoxy-chrysoidine, (12) diamino-phenol, (13) benzene,

(14) lead acetate, (15) thioglycolic acid, (16) iodine, (17) copper chloride, (18) penicillin, (19) sulphonamide, (20) streptomycin, (21) carbon disulphide, (22) Vioform, (23) cement, (24) trichloro-ethylene, (25) coal-tar.

In view of the fact that the four types (T₁, T₂, T₃, T₄) of transport could only be found in subjects over 20 years of age, the individuals examined could be divided according to their age into 2 groups: those over and those under 20.

Patch tests with substances 1–7 were performed on each subject. It was found that the patch-positive individuals – over 20 years – always belong to one of the first three groups (T₁, T₂, T₃), never to the fourth one (T₄). As the application of a greater number of allergens gives more certain information about the allergized state of the subject, the patch test was applied to 20 individuals belonging to the fourth type with the other 18 substances, too, and as control it was also applied to the 30 subjects belonging to the first three types not reacting positively to substances 1–7. The examinations demonstrated again that only the subjects belonging to the three first types were patch-positive. Those belonging to type 4 again gave negative patch tests (see Table). In adults belonging to each of the 4 types in 20–20 patients suffering from allergic and non-allergic diseases of the skin, the transport measurements performed during the illness and after recovery gave identical results.

By comparison of the macromolecular transport and the patch tests, as well as on the basis of the case history of the subjects examined, our test seems suitable for recognizing in individuals over 20 years of age the disposition for sensitization and for performing screening tests.

Zusammenfassung. Die Makromoleküle der am langsamsten transportierenden Individuen reagierten auf die Läppchenproben sämtlich negativ, ein positives Ergebnis wurde nur bei den schneller transportierenden Personen erhalten.

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Evaluation of examinations performed on 376 subjects (285 men and 91 women) aged 20–84 years

	Grades (= Types)			
	T ₁	T ₂	T ₃	T ₄
Occupation				
Industrial and commercial workers	42	79	54	40
Clerks	19	49	9	39
Agricultural workers	10	23	5	7
Total	71	151	68	86
<i>Purpura allergica</i>	–	–	2	1
Prurigo group	–	2	1	–
<i>Urticaria</i>	8	7	–	2
Quincke's oedema	1	–	–	1
Eczema group (except mycotic dyshidrosis)	25	45	17	7
<i>Mycotic dyshidrosis</i>	4	7	7	–
Other non-allergic diseases (except pemphigus group)	33	90	41	75
Positive allergic anamnesis	25	41	21	10
1–7. Sensitive against one or more chemicals listed under these numbers	25	63	11	∅
8–25. Sensitive against one or more chemicals listed under these numbers	2	2	1	∅

(30 subjects of types T₁, T₂ and T₃ and 20 of type T₄ were examined)

¹ L. FORRÓ and A. NAGY, Exper. 21, 420 (1965).
² W. BURCKHARDT, in A. MARCHIONINI, *Handbuch der Haut- und Geschlechtskrankheiten* (J. JADASSOHN, Ergänzungswerk; Springer, Berlin-Göttingen-Heidelberg 1962), vol. II/1, p. 387.

A New Method: Contribution to the 'Typing Problem' in Homotransplantation

According to the literature, the rejection in the case of homotransplants is a result of an immune reaction. The pathway of the antigen in the organism leads through the lymphatic vessels. If the donors are selected by some method, a prolonged survival could be observed^{1–3}.

FORRÓ and NAGY⁴ demonstrated with their procedure, consisting of an intracutaneous injection, that, from the

point of view of macromolecular transport of the lymph apparatus of the skin, adults can be ranged into four groups. By means of this test the donors and acceptors were selected. Among the four groups, homotransplanta-

¹ L. BRENT and P. B. MEDAWAR, Brit. med. J. 2, 269 (1963).
² P. B. MEDAWAR, Bull. War Med. 4, 1 (1943).
³ B. R. STARK, Bull. N.Y. Acad. Med. 34, 561 (1958).
⁴ L. FORRÓ and A. NAGY, Exper. 27, 480 (1965).