the spleen may indicate that extramelanocytic, 'nonspecific' or 'accidental' oxidation of dopa may occur—at least after injection of large amounts of this compound.

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Flare-up of Contact Dermatitis to Picryl Chloride in the Mouse

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Abstract. In mice sensitized to picryl chloride, external challenge with the antigen was followed 2 weeks later by an intraperitoneal injection of picryl sulphonic acid. This resulted in a flare-up of the previous dermatitis.

Key words: Contact dermatitis; Mice; Picryl chloride; Flare-up

It is well known that many exacerbations of allergic contact dermatitis are caused by systemically administered antigen (2, 3). Pathogenetic studies on such reactions are difficult to perform in man. We report here an attempt to design an animal model for "endogenous contact dermatitis".

MATERIAL AND METHODS

Animals: Female NMRJ albino mice weighing about 30 g and 2 months of age were obtained from Anticimex AB, Stockholm. *Drugs:* Picryl chloride (PCh) purchased from BDH, Poole, U.K.; picryl sulphonic acid (PSA) obtained from Sigma Chemical Co., St. Louis, USA, dissolved in saline immediately before use; croton oil dissolved in ether.

Sensitization and external challenge were carried out according to Möller (6). Thus all mice were sensitized by a single painting on the abdomen with PCh 7% in ethanol and challenged one week later by painting their left ears with PCh 0.5% in olive oil (control: right ears, oil only).

Internal challenge was performed by intraperitoneal injection of PSA 5 mg/kg bodyweight in 0.25 ml saline, this being the highest tolerable dose. The interval between external and internal challenge was 2–3 weeks, except in one experiment with an interval of 11 weeks. The animals were sacrificed 24 h later and the wet weight of both ears was registered (6). For *controls*, see Table I. In one type of control ear, painting with croton oil substituted the external challenge with PCh in order to obtain a toxic dermatitis. Application of 0.1% was found suitable as it produced a dermatitis of similar wet weight and duration to the allergic contact dermatitis.

The Student's *t*-test was used for statistical evaluation.

RESULTS

As earlier shown (6) painting with PCh in sensitized mice regularly resulted in a contact dermatitis. Our

Table 1. *Flare-up of contact dermatitis to picryl chloride (PCh) in the mouse after internal challenge with picryl sulphonic acid (PSA)*

Wet weight of ear tissue (mean of 5 animals) and percentual difference left/right ear

	Animal group no.				
	1	2	3	4	5
External challenge (left ear)	PCh	PCh	–	–	Croton oil
Internal challenge	PSA	NaCl	PSA	NaCl	PSA
Mean w.w. % of left ear	61.1	56.2	56.9	55.3	59.4
S.D.±	0.8	1.5	2.0	1.1	1.6
% difference left/right ear	10.5	3.1	0.5	2.6	5.1

experimental results are given in Table 1, from which it may be seen that the dermatitis had subsided after 2 weeks: there is no difference between groups 2 and 4, i.e. between animals which had endured a contact dermatitis and those which had not.

After the 2-week interval the animals were internally challenged with PSA. As may be seen from the table the injection with PSA in animals having had an allergic contact dermatitis (group 1) induced an increased ear wet weight (61.1 %) in comparison with that of animals given saline only (56.2 %). This difference is highly significant ($p<0.001$). The ear wet weight did not increase in the control groups 3–4 not externally challenged but injected with PSA and saline, respectively. The control animals which had endured a toxic dermatitis showed a high mean ear wet weight after internal challenge with PSA; the increase (group 5 vs. 3) was not statistically significant, however.

In animals externally challenged with PCh on the left ear and internally challenged with PSA (group 1) the mean wet weight of the left ear was 10.5 % higher than that of the control ear. This left/right difference was 5.1 % in animals which had sustained a toxic dermatitis before internal challenge (group 5).

In a long-term experiment in which the interval between external and internal challenge was extended to 11 weeks the result was similar to that in the short-term experiments (type group 1 vs. 2): mean wet weight 59.2 % in animals challenged with PSA vs. 55.2 % in those given saline ($p<0.01$).

DISCUSSION

During experimental work on allergic contact dermatitis to arsphenamine in guinea pigs, Sulzberger (8) observed a flare-up at the site of previous contact dermatitis, following intracardiac injection of the antigen. This phenomenon has been repeatedly confirmed (4, 5, 7). In chromate-sensitized guinea pigs, Polák & Turk (7) induced a flare-up by intravenous injection of the antigen 2 weeks after external challenge.

In the present study an attempt was made to provoke an analogous flare-up in mice. For this we used a quantitative method to register the inflammatory reaction. PCh was used for sensitization and external challenge but not for internal challenge, as it is poorly soluble in water. Instead we injected the chemically related PSA which can induce tolerance to PCh contact allergy by stimulating the production of specific T suppressor cells (1).

As may be seen in Table 1, PSA (but not saline) induced a flare-up of a previous contact dermatitis to PCh. This flare-up could be provoked with equal strength as long as 11 weeks after external challenge, which is in contrast to the results of Polák & Turk (7) in their guinea pig experiments. However, the PSA-provoked flare-up in our model does not appear to be entirely specific, as our results indicate a possible reactivation of a previous toxic dermatitis as well.

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The Prevalence of Psoriasis in Denmark

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Abstract. A representative random sample comprising approximately 4000 Danes, 16–99 years old, were questioned as to present or previous psoriasis eruption by non-medical, professional interviewers. Based on the information obtained, the point prevalence for men was 4.2%, for women 3.3%. 88% of those who believed themselves to be suffering from psoriasis stated that they had been treated by doctors for psoriasis and 71% by dermatologists and/or dermatological departments. The difference found between men and women is not statistically significant. The actual prevalence has been adjusted according to an estimated overcalculation of some 25% based on the number of false-positive answers to questionnaires in a twin study. The prevalence for men is thus adjusted to 3.2% and for women to 2.5%. The number of adult psoriatics in Denmark is estimated at approximately 113000, of whom 71000 suffer from mild psoriasis and 42000 from more severe psoriasis.

Key words: Psoriasis; Epidemiology; Prevalence

Epidemiological data are essential for the planning of health care and disease control, and as a basis for studies concerning identification of genetic and environmental etiological factors.

In the Nordic countries, population surveys with special reference to psoriasis have been made in the Faroe Islands and in Sweden (2, 4). Lomholt's study from the Faroe Islands (4) is unique, since it is based on a complete census of all households in a well-defined region, including about one-third of the total Faroese population. The overall prevalence of psoriasis in these persons was 2.8%, with no sex difference.

In Denmark, systematic population surveys concerning the prevalence of psoriasis have never been made. Therefore, we have participated with questions in an interview survey covering a random sample of approximately 4000 Danes. This study differs from previous Nordic population studies in not being a disease-centered survey but an examination of Danes who were contacted with the aim of obtaining especially sociological data.

MATERIAL AND METHODS

Danmarks Statistik and the Danish Social Research Institute regularly perform interview surveys during the months of January, May and October covering a representative sample of the Danish population. These surveys are utilized by scientists, public authorities and institutions. In October 1978 we participated in an interview survey where questions about psoriasis were included.

The actual study sample was drawn from the total Danish population (excluding the Greenlandic and Faroese populations) between age 16 and 99 years; a multistage sampling procedure was used, based on stratification of the total population as to sex, age, geographical distribution and urbanization degree in order to render the sample representative of the Danish general population (3, 5).

The number in the random sample was 4977 (6). These persons were visited at their home address by non-medical, professional interviewers and were questioned according to standardized procedures. The interviews were performed from October 3rd through October 20th, 1978.

In total, 3892 interviews were made (78.2%). Drop-out was due to: refusal of visit (12.8%), persons not met (2.4%), and other reasons (6.5%). A relatively lower percentage of respondents was obtained in the capital (68%);