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Individuals Exhibiting Conspicuous Nevus (Lentigo Simplex) Are Resistant to Allergic Rhinitis/Conjunctivitis (Pollinosis), but Those Who Do Not Show Increased Susceptibility to Pollinosis

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Abstract: We investigated 115 individuals in Tokyo from two groups of persons with conspicuous nevi on the head, neck, and arms, etc. (nevus-positive group) and persons who do not exhibit such nevi (nevi-negative group) interviewing them to determine whether they suffered from allergic rhinitis/conjunctivitis (pollinosis) and examining them for the presence and extent of nevi. There was a distinct correlation: only 5 persons among 85 individuals of the nevus-positive group suffered from pollinosis, and all 30 people in the nevus-negative group had pollinosis. Thus, individuals exhibiting conspicuous nevi are resistant to pollinosis, but those who do not show increased susceptibility to pollinosis.

Key words: Nevus, Resistance, Pollinosis, Allergic rhinitis/conjunctivitis, FTS

Members of the younger generation in Japan have been showing an increased rate of developing rhinitis/conjunctivitis (mainly Japanese cedar pollinosis). Pollinosis has become a common disease that seriously disrupts the daily activities of those suffering from it (Akihiko Nakamura et al. (8): Allergic rhinitis epidemiology in Japan. Average nation-wise morbidity was 16.2%). In addition to the usual symptomatic therapy for pollinosis, several new therapies have been developed or are currently being investigated: curative therapy through desensitization with peptides (2), developed from data on the T cell epitopes of Japanese cedar pollen allergens, and DNA vaccination that inhibits the cytokine production of Th2 cells or induces the activation of Th1 cells (11). We have been studying the application of FTSnonapeptide for the non-specific immunotherapy against pollinosis, which has so far been applied for restoration of various organ injuries (3–7, 9, 10, 12–14).

Generally, epidemiological studies on susceptibility

and resistance to certain diseases have focused on the effect of food compositions, etc. Reports from different parts of the world have indicated that individuals eating salt-rich diets suffered from hypertension and that there were few patients suffering from arteriosclerosis in countries where people ate bluish fishes as one of their staple foods. We think, however, that a physiologically more significant strategy in this era of molecular biology would be to determine what genetic, biochemical, and background characteristics individuals suffering from a specific disease have in common with each other. Obtaining such data on the relationship between disease resistance and the genetic and immunological constitutions of individuals and their history of pathological conditions should lead to the development of essential therapeutic strategies for diseases.

The first author (AA) had noticed that persons with conspicuous nevi on the head, neck, and arms, etc. (nevus-positive group) hardly suffer from pollinosis, and conversely, there are many pollinosis sufferers among individuals who do not exhibit such nevi (nevi-negative

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Abbreviations: FTS, Facteur thymique serique; Th1, T helper 1; Th2, T helper 2.

Table 1. Rate of individuals suffering from pollinosis of nevus-positive group and nevus-negative group

Nevus-positive or -negative group		Numbers of individuals suffering from pollinosis		
		Male	Female	Total
Nevus-positive group*	Pollinosis	3 ^{a)}	2 ^{b)}	5
	Total interviewees	31	54	85
Nevus-negative group*	Pollinosis	9	21	30
	Total interviewees	9	21	30

^{a)} Including 2 persons with only one but distinct nevus.

^{b)} Including a person with only one but distinct nevus.

* $P < 0.0000001$ (chi-square test).

group) (1). To verify and extend these observations, he examined individuals in Tokyo from these two groups (115 persons in total: 40 males and 75 females that typified these two groups), interviewing them to determine whether they suffered from pollinosis and examining them for the presence and extent of nevi.

There was a distinct correlation: only 5 persons (3 males and 2 females) among 85 individuals (31 males and 54 females) of the nevus-positive group suffered from pollinosis, and all 30 people (9 males and 21 females) in the nevus-negative group had pollinosis as shown in Table 1. Statistically significant difference ($P < 0.0000001$, chi-square test) was found between the nevus-positive group and the nevus-negative group.

The ages of the examined individuals ranged between 17 and 60 years, with persons under 30 accounting for 70 out of the 115 individuals (61%). In the first examination, individuals showing nevi whose presence and extent were difficult to assess (i.e., those belonging to the "intermediate" group) were excluded from the study. In this study, the intermediate group was defined as those people with characteristics situated between people with conspicuous nevi (few distinct nevi, or many small or large nevi) and those without.

Using these criteria, the present study was then extended by the second (KW) and third (SK) co-authors who examined the presence and extent of nevi, particularly individuals suffering from pollinosis, in their prefectures. Our total data combined clearly proved that most of persons suffering from pollinosis had a scarce number (particularly only one) or no nevi on their head, neck, and arms, etc. (manuscript in preparation).

It can be said from these remarkable facts, which have not yet been covered in the literature to date, that individuals exhibiting conspicuous nevi are resistant to allergic rhinitis/conjunctivitis (pollinosis). Our observations indicate that there is a veiled bio-defense activity of nevi against pollinosis. This also suggests that people whose nevi-producing systems are weak are susceptible to pollinosis. Furthermore, this suggests that the

systems producing nevi and those inducing the onset of pollinosis are competing with each other, and thus nevi may inhibit or delay the onset of pollinosis.

New strategies for prevention of pollinosis and treatments for those already suffering from pollinosis can be conceived from the present findings by scientists in various research fields. These observations also raise possibilities for new experimental approaches to solve yet-unanswered questions in immunology.

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