AD-785 189

FEATURES OF THE DIAGNOSIS AND CLINICAL TREATMENT OF NONINFECTIOUS ALLERGIC BRONCHIAL ASTHMA

Ya. M. Zonis

Foreign Technology Division
Wright-Patterson Air Force Base, Ohio

15 August 1974

UNCLASSIFIED
Security Classification

DOCUMENT CONTROL DATA - R & D AD 705 159

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author)
Foreign Technology Div sion
Air Force Systems Command
U. S. Air Force

2a. REPORT SECURITY CLASSIFICATION
UNCLASSIFIED

2b. GROUP

3. REPORT TITLE
FEATURES OF THE DIAGNOSIS AND CLINICAL TREATMENT OF NONINFECTIOUS BRONCHIAL ASTHMA

4. DESCRIPTIVE NOTES (Type of report and inclusive dates)
Translation

5. AUTHOR(S) (First name, middle initial, last name)
Ya. M. Zonis

6. REPORT DATE
May-June 1970

7a. TOTAL NO. OF PAGES
11

7b. NO. OF REFS
5

8a. CONTRACT OR GRANT NO.

b. PROJECT NO

c.

d.

9a. ORIGINATOR'S REPORT NUMBER(S)
FTD-MT-24-1263-74

9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)

10. DISTRIBUTION STATEMENT
Approved for public release; distribution unlimited.

11. SUPPLEMENTARY NOTES

12. SPONSORING MILITARY ACTIVITY
Foreign Technology Division
Wright-Patterson AFB, Ohio

13. ABSTRACT
06

DD FORM 1 NOV 68 1473

UNCLASSIFIED
Security Classification

EDITED MACHINE TRANSLATION

FTD-MT-24-1263-74 15 August 1974

AT 2230958

FEATURES OF THE DIAGNOSIS AND CLINICAL TREATMENT OF NONINFECTIOUS ALLERGIC BRONCHIAL ASTHMA

By: Ya. M. Zonis

English pages: 7

Source: Kazanskiy Meditsinskiy Zhurnal, Nr. 3, May-June 1970, pp. 55-57

Country of Origin: USSR
Requester: FTD/PDTR
This document is a SYSTRAN machine aided translation, post-edited for technical accuracy by: Dean F. W. Koolbeck
Approved for public release; distribution unlimited.

U. S. BOARD ON GEOGRAPHIC NAMES TRANSLITERATION SYSTEM

Block	Italic	Transliteration	Block	Italic	Transliteration
А а	*А а*	A, a	Р р	*Р р*	R, r
Б б	*Б б*	B, b	С с	*С с*	S, s
В в	*В в*	V, v	Т т	*Т т*	T, t
Г г	*Г г*	G, g	У у	*У у*	U, u
Д д	*Д д*	D, d	Ф ф	*Ф ф*	F, f
Е е	*Е е*	Ye, ye; E, e*	Х х	*Х х*	Kh, kh
Ж ж	*Ж ж*	Zh, zh	Ц ц	*Ц ц*	Ts, ts
З з	*З з*	Z, z	Ч ч	*Ч ч*	Ch, ch
И и	*И и*	I, i	Ш ш	*Ш ш*	Sh, sh
Й й	*Й й*	Y, y	Щ щ	*Щ щ*	Shch, shch
К к	*К к*	K, k	Ъ ъ	*Ъ ъ*	"
Л л	*Л л*	L, l	Ы ы	*Ы ы*	Y, y
М м	*М м*	M, m	Ь ь	*Ь ь*	'
Н н	*Н н*	N, n	Э э	*Э э*	E, e
О о	*О о*	O, o	Ю ю	*Ю ю*	Yu, yu
П п	*П п*	P, p	Я я	*Я я*	Ya, ya

* ye initially, after vowels, and after ъ, ь; e elsewhere. When written as ё in Russian, transliterate as yё or ё. The use of diacritical marks is preferred, but such marks may be omitted when expediency dictates.

FEATURES OF THE DIAGNOSIS AND CLINICAL TREATMENT OF NONINFECTIOUS ALLERGIC BRONCHIAL ASTHMA

Ya. M. Zonis

Scientific Research Allergological Laboratory (Chief - Ya. M. Zonis, Cand. of Med. Sciences) of the Kislovod Health-Resort Council

In recent years the number of victims of allergic diseases, including bronchial asthma, has grown significantly both in our country and abroad.

In the period 1966-1969 we had 193 patients with infectious allergic bronchial asthma under our observation (100 men and 93 women, ranging in age from 18 to 64 years); these patients had no severe complications involving the bronchopulmonary apparatus and no right-ventricular deficiency. Thirty persons had been ill for up to 2 years, 108 from 2 to 10 years, and 55 for more than 10 years.

Of these 16.5% had close relatives suffering from allergic diseases. In 37.2% of the patients extrapulmonary allergic diseases had preceded the bronchial asthma and such diseases had accompanied it in the same number of the patients.

The major complaints were as follows: attacks of asthma (96.7%) or difficulty in breathing, mainly during physical exercise or in the morning upon arising (93.3%), and coughing (63.2%) with expectoration of up to 30 ml of sputum in a 24-hour period (27.5%). In the overwhelming majority of patients the attacks of asthma occurred only (or predominantly) within the home (93.8%) and at night (79.3%); they were significantly less frequent out of doors. In 18.1% of the patients attacks occurred up to 3-4 times per day; they were less frequent in the other 81.9%. Sneezing, tickling in the throat, difficulty in breathing, or attacks of asthma due to inhalation of household dust during housecleaning or during changing of bed linen were observed in 48.7% of the patients; the same effects were caused by production dust in 8.3%, dust from cotton and woolen articles in 8.3%, from various odors in 76.7%, and during time spent in the yard or in the woods during the blossoming period in 24.9%. Phenomena associated with medicinal allergy were noted in 29.0% of the patients and phenomena related to food in 37.8%. Respiratory difficulty occurred in many patients after intake of alcohol.

High sensitivity of the patients, detected by questioning, was confirmed by data from 731 skin tests with various allergens, which we carried out by the scarification method in 182 patients.

Skin reactions in all of the subjects were manifested within 20 min after the tests. The results were evaluated in terms of the size of the blister at the point of scarification. Allergens manufactured by the Central Scientific Research Allergological Laboratory of the Academy of Medical Sciences, the Institute of Vaccines and Sera named after Mechnikov (Moscow and Ufa), and by our laboratory were used.

Tests with household dust gave positive results in 73.4% of the patients; those with epidermal allergens in 23.2%, and those with pollens in 14.9%. There were reactions to 2-3 allergens of an epidermal or plant nature in 34.4% of the patients; this is

apparently explained by the presence in the substances of a common allergen. The most intensive skin reaction was noted during testing with the allergen from household dust.

In the majority of patients with positive skin tests the data from the anamnesis indicated sensitivity to the administered substances - especially in the case of household dust. Individuals with positive reactions to pollen showed aggravation of the disease most frequently in the summer months; the patients connected the deterioration in their condition with blooming of grasses and trees and with time spent in woods or yards. However, as a rule the patients could not precisely name the type of plant causing attacks of asthma; only the skin tests made it possible to establish the etiological factor. Among patients with positive reactions to the administration of epidermal allergens detailed collection of anamneses made it possible to establish a connection of the disease with this allergen in only 12 persons. Patients sensitive to *Daphnia* did not note any sensitivity to it, despite the fact that all of them had aquariums in their living quarters.

The test were negative in 67.2% of the subjects examined. At the same time data from questioning revealed sensitization to noninfectious allergens. This particular result of skin tests is explained by the apparent absence of sufficient allergenic activity of the extract applied owing to technical error during its manufacture or to "nonpathogenicity" of the material from which the extract was prepared. In this case we observed the same thing that Ordman pointed out: the allergen from household dust collected on the shore possessed higher activity than that from regions located far from the ocean. Farmer (1964) also emphasizes that household dust collected in cities with high humidity and contamination of the air is more pathogenic.

It should possibly be noted that the reactivity of the patient changes with the seasons. Thus Parrot-Ganudo (1966) describes a bronchial asthma patient with an allergy to household

dust in whom the provocation test was positive in October and negative in the summer months. Finally, the quantity of nonbacterial allergens which we applied was limited; in connection with this the negative results of the testing did not eliminate a diagnosis of noninfectious bronchial asthma as established by anamnesis and by clinical data.

In 46.7% of the patients there was no parallelism between the anamnesis data and the skin testing.

Forty-nine patients from the group with allergy to household dust received 0.02 ml of allergen intracutaneously (on the inner surface of the forearm); the dilution was 1:10,000,000. The magnitude of the blister which formed was compared with the concentrations of allergen administered. It was noted that the degree of sensitization of the patients to household dust was high and depends on sex, age, and the length of existence and nature of the course of the disease. The level of sensitivity was higher in persons with frequent attacks of asthma than in patients in a state of remission.

According to literature data provocative inhalation tests are of decisive significance in the diagnosis of atopic asthma. This test was carried out with 62 patients by having them inhale the allergen of household dust in a threshold concentration. The subjective state was considered every 10 min for an hour. Spirography was used to determine indices of bronchial obstruction. The test results were found to be positive in forty patients. The degree and time for reduction of the magnitude of the spirographs were independent of the course of the disease and from the functional state of the external respiration apparatus. However, reduction of the indices of bronchial capacity was more distinct in persons marked by sensitivity to household dust and also in those suffering from chronic bronchitis.

It was established by questioning that the disease set in suddenly with a severe attack of asthma, usually at night, in 54.9% of the patients. In 45.1% of the patients the phenomenon of bronchospasm was less distinct in the first stages of the development of the disease and was expressed as minor difficulty in breathing, usually during physical exercise, or as paroxysmal or pertussoid dry cough, usually at night. This condition continued for a period ranging from 1-2 up to several months and was usually evaluated as chronic bronchitis or catarrh of the upper respiratory tract. But the further course of the disease indicates that the described condition was the initial manifestation of bronchial asthma (or per A. D. Ado, the asthmoid syndrome).

Asthma occurred without visible causes in 33.7% of the patients, with its onset coming after chilling in 7.3%, after acute disease of the upper respiratory tract or pneumonia in 27.5%, and against a background of mildly expressed chronic bronchitis in 24.9%. The phenomena of mildly expressed chronic bronchitis, usually aggravated in the fall and winter months, were established in 57.0% of the patients.

Repeated examinations over the period of a month revealed 2 and more signs characteristic for toxic-infectious processes (subfebrile temperature, elevated leukocyte count, accelerated ESR, alterations in the proteinogram with elevated α_2-globulin fraction) in 28 patients. At the same time the subjective state of the patients was fully satisfactory. Skin tests with bacterial allergens in dilutions of 1:10 and 1:100 were positive.

No X-ray indications in the form of segmental or fine-focal infiltrative changes were noted. Apparently this is due to the mildly expressed activity of the inflammatory process in the patients under observation. Besides this, as asserted by A. A. Gerasimova (1965), in the majority of cases during bronchial asthma this process injures interstitial tissue.

Analysis of the anamnesis, allergological observation, and study of symptoms of the inflammatory process made it possible to single out three types of relationship between infectious processes in the lungs and infectious-allergic bronchial asthma:

1) the process in the bronchopulmonary apparatus activates sensitization of the organism by noninfectious allergens, mainly as the result of nonspecific injury to the mucous membranes of the bronchi, promoting penetration of the allergens into the organism of the patients;

2) acute nonspecific disease of the respiratory tract provokes the appearance of bronchial asthma in individuals previously sensitized by noninfectious agents;

3) the inflammatory process in the bronchopulmonary apparatus arises secondarily, as the result of disturbance of the functional state of the bronchial tree.

Thus during bronchial asthma of a noninfectious nature an infection can be a promoting or challenging factor and also a complication.

Pulmonary emphysema was detected in 46.2% of the patients. Pulmonary insufficiency of stage I was found in 78.3% of the patients and st. II in 4.1%; phenomena of pulmonary insufficiency were not noted in 17.6%.

Consideration of data from diagnosis and clinical practice dealing with infectious-allergic bronchial asthma aids in selecting treatment procedures, methods for specific hyposensitization of the organism, inactivation of the inflammatory process in the bronchopulmonary apparatus, and improved functioning of the external respiration apparatus.

BIBLIOGRAPHY

1. Адо А. Д. В кн.: Современная практическая аллергология. Медгиз, М., 1963; В кн.: Бронхиальная астма. Медицина, М., 1969.—2. Герасимов Л. А. В кн.: Морфология, физиология, и патология органов дыхания. Медицина, Л., 1965.—3. Farmer P. V congreso internacional de alergologia. Madrid, 1964, 380.—4. Ordman D. Ibid, 343.—5. Parrot-Ganudo J. Acta allergologica, 1966, XXI, 1, 272.