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OCCUPATIONAL DISEASES OF THE SKIN AND
RESPIRATORY ORGANS IN PERSONNEL WORK-
ING IN THE PRODUCTION OF CERTAIN
MEDICATIONS

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Foreign Technology Division
Wright-Patterson Air Force Base, Ohio

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

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

OCCUPATIONAL DISEASES OF THE SKIN
AND RESPIRATORY ORGANS IN PERSONNEL
WORKING IN THE PRODUCTION OF CERTAIN
MEDICATIONS

A. N. Alenina, I. F. Nikonets,
I. S. Ivanova and Yu. L. Makarenko
(Moscow)

Occupational allergic diseases of the upper respiratory tract and of the skin in the chemicopharmaceutical industry have been observed in workers engaged in the production of antibiotics, vitamins, sarcolysin, caffeine, novocaine, acrichin, and many other preparations. (Taras; Baldi; E. K. Kranig). According to data from V. Goranov et al., occupational diseases - eczema and bronchial asthma - were noted in 3% of the workers in a plant for antibiotic production. The possible development of occupational diseases of the skin at establishments engaged in producing alkaloids of the morphine group was reported by White (1925), Pignot, and Dores et al.

Handwritten note: A correlation of these diseases with personnel in the drug industry is observed.

We found no data in the literature on occupational diseases of the skin in personnel working on the production of codeine.

F. S. Nul'man (1964), studying the working conditions and health of workers occupied in loading ampules with amnopone [Translator's note: Russian word амнопон [amnopon] not found in available references] revealed bronchial asthma in 7 out of

62 subjects and diseases of the skin in 19. Unfortunately the author did not study the specific sensitivity of the skin in the workers and therefore it is difficult to say just which of the alkaloids was the etiological factor in the development of the allergic state.

We observed allergic occupational diseases of the upper respiratory tract and of the skin in personnel working in the production of morphine and codeine. Dynamic observation was carried out of 119 persons. These were mainly women of young and middle age.

Bronchial asthma was diagnosed in 16 persons (14 women and two men). Working conditions subjected all of them to the effect of morphine dust. The time from beginning of contact with it to the development of the first signs of the disease was usually fairly short. Thus, eight workers fell ill within a few months after beginning work. However, along with cases of rapid sensitization, in certain workers the periods from the beginning of work to development of the first signs of disease were more prolonged. Thus, two workers fell ill after one-three years, two more after three-five years, and four some five-seven years after initial contact with morphine. It should be noted that these periods are defined with consideration of the time for development of typical symptoms of bronchial asthma; such symptoms as sneezing, tickling in the throat, and minor coughing appeared earlier in the majority of the patients.

Prolonged observation (five to ten years) was carried out for four patients, three-five years four others, and up to three years for nine persons. All of the workers were placed in jobs where there was no contact with morphine dust. As a result a state of remission set in for ten of the patients.

The periods of remission differed. Stable absence of symptoms for six months took place in three patients, for up to one year in three, two years in two, three years in one, and six years in one. Five patients transferred to different jobs did not develop remission, although a certain easing of symptoms and a reduction in their severity was noted. Apparently in a number of cases this was connected with work organization which was not altogether reasoned out. Thus, transfer of such workers to sections where they came in contact with stimulating substances which might maintain bronchitis phenomena cannot be considered a correct move. In other cases even proper organization work did not lead to stable remission, which may be connected with the development of polyvalent sensitization.

Besides the individuals with typical bronchial asthma, we were able to single out a group of 19 workers who presented identical complaints relating to sneezing, tickling in the throat, and dry coughing, manifested only during time in the shop and disappearing during nonworking hours. During objective examination phenomena of vasomotor rhinitis were found in 15 of them, while no pathological manifestations were noted in the others. Considering the common nature of the genesis of bronchial asthma and vasomotor rhinitis, it is possible, with some reason, to classify the isolated group of workers as suffering allergic reaction and to establish detailed medical observation of them.

Occupational diseases of the skin were detected in 22 workers, among whom 15 were diagnosed as having dermatitis and seven as having eczema. Besides this, dryness and insignificant desquamation of the skin of the wrist, accentuation of the follicular apparatus, minor erythematous inflammations, and cracks on the fingers and side surfaces of the hands were noted in seven workers. We interpreted these changes as early (premorbid) lesions of the skin.

Dermatosis occurred in 13 of the workers as a result of contact with morphine; among these 11 dealt with precipitation operations during the action of the reaction mass and, while two came in contact with morphine powder. In codeine production diseases of the skin were manifested in eight equipment operators under the combined effect of wet and dry preparations. The period of work prior to the onset of the disease varied from a few months to 20 years. Inflammatory phenomena were localized mainly on exposed portions of the body - the face and the upper extremities.

The clinical picture and course of the indicated skin diseases did not have any particular features distinguishing them from occupational dermatoses arising due to the action of other chemical substances.

In order to establish the etiological factor in the development of the occupational dermatoses which were found, we studied the specific sensitivity of the skin to morphine (2%) and codeine (2%) by means of drop and compressed skin tests. Elevated sensitivity was manifested by eight persons, of whom six were suffering from occupational dermatosis, one showed signs of occupational disease of the skin in the past, and one female worker denied having any of the listed skin diseases.

These investigations made it possible to establish that morphine and codeine are classed as allergins, since diseases caused by them are accompanied by the development of specific increases in sensitivity. Detection of various allergic diseases in the workers (vasomotor rhinitis, bronchial asthma) serves as confirmation of this fact.

It is characteristic that during investigation of skin sensitivity to alkaloids symptoms of bronchial asthma developed after the skin tests in two workers with undamaged skin but who

suffered from bronchial asthma in the remission stage.

The obtained data made it possible to recommend a set of measures directed toward improving the health aspects of working conditions and reducing and preventing occupational diseases of the skin.

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