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SENSITIVITY OF THE SKIN TO PENICILLIN
AND STREPTOMYCIN

Zh. I. Shved

Foreign Technology Division
Wright-Patterson Air Force Base, Ohio

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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
Й й	<i>Й й</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 ë in Russian, transliterate as yë or ë.
 The use of diacritical marks is preferred, but such marks
 may be omitted when expediency dictates.

GRAPHICS DISCLAIMER

All figures, graphics, tables, equations, etc.
 merged into this translation were extracted
 from the best quality copy available.

RUSSIAN AND ENGLISH TRIGONOMETRIC FUNCTIONS

Russian	English
sin	sin
cos	cos
tg	tan
ctg	cot
sec	sec
cosec	csc
sh	sinh
ch	cosh
th	tanh
cth	coth
sch	sech
csch	csch
arc sin	\sin^{-1}
arc cos	\cos^{-1}
arc tg	\tan^{-1}
arc ctg	\cot^{-1}
arc sec	\sec^{-1}
arc cosec	\csc^{-1}
arc sh	\sinh^{-1}
arc ch	\cosh^{-1}
arc th	\tanh^{-1}
arc cth	\coth^{-1}
arc sch	sech^{-1}
arc csch	csch^{-1}
—	
rot	curl
lg	log

SENSITIVITY OF THE SKIN TO PENICILLIN AND STREPTOMYCIN

Zh. I. Shved

Department of Hospital Therapy (Prof. P. K. Bulatov, Dir.)
I Leningrad Medical Institute imeni I. P. Pavlov

In recent years antibiotics have found ever-increasingly wide use in medical practice. At the same time the number of toxic and allergic reactions is increasing.

Besides causing severe allergic reactions, antibiotics can also sustain and aggravate the course of such diseases as chronic pneumonia and bronchial asthma.

Taking into account the urgency of the problem of allergic reactions to the administration of antibiotics, as well as the inadequate development of a method to detect them, we decided to study the sensitivity of the skin to streptomycin and penicillin, using intradermal tests in apparently healthy individuals and patients with bronchial asthma and chronic pneumonia.

Injected intradermally into the forearm were 10,000 or 5,000 units of penicillin and streptomycin in 0.1 ml of a physiological solution. At the same time, 0.1 ml of a physiological solution was injected into the other forearm as a control. The same series of penicillin and streptomycin was used in all tests.

The reaction was evaluated after 20-30 minutes. Its severity was judged by the dimensions of hyperemia. With hyperemia less than 5 mm the reaction was considered negative, from 5 to 15 mm - weak positive (+), from 15 to 25 - positive (++) and 25 mm or more - strong positive (+++).

A total of 70 persons between the ages of 20 and 50 years were examined. Of these 40 were healthy, 20 were patients with bronchial asthma against a background of chronic pneumonia and 10 suffered from chronic pneumonia. In order to avoid severe anaphylactic reactions, the tests were made on persons with no indications of high sensitivity to antibiotics in their anamnesis.

When the healthy individuals were examined 20 minutes after the injection of 10,000 units of penicillin and streptomycin, in 12 out of the 20 subjects a positive reaction was observed to the injection of the antibiotics. The maximum hyperemia measured 30 mm (+++) and was observed in only 1 person. Eleven in this group had never been treated with penicillin or streptomycin, but had only had contact with them.

When the dose of the injected material was reduced to half (5000 units), a positive reaction of the skin to penicillin and streptomycin was observed in 8 of 20 subjects. Maximum hyperemia - 25 mm (++) - was noted in 1 person with the injection of penicillin and the same size hyperemia (++) was observed in 3 persons with the injection of streptomycin.

In the examination of bronchial asthma and chronic pneumonia patients, a positive skin reaction after the injection of 5000 units of the antibiotic was found in 14 of 20 subjects in response to the injection of penicillin and in 12 after the injection of streptomycin. Maximum size of hyperemia with the injection of penicillin and streptomycin was 25 mm (++) .

When chronic pneumonia and bronchial asthma patients were given intradermal injections of 10,000 units of antibiotics, the reaction was positive in all 10 subjects; maximum hyperemia reached 40 mm (+++). In 1 patient, besides a pronounced local reaction (hyperemia at the site of the injection of 10,000 units of streptomycin measured 40 mm; pronounced edema), 2 minutes after the injection a general allergic reaction developed - severe edema of the face and hands, urticarial rash and intensified asthmatic condition. High sensitivity to penicillin had been noted in this patient since 1964, evident as skin itch-

ing. After the patient was given calcium chloride and dimedrol and the inhalation of novodrin the attack was accomodated. Edema of the face and hands lasted 2 days.

Higher sensitivity of the skin to antibiotics was found in patients with bronchial asthma and chronic pneumonia than in the group of healthy people; a larger number of positive and intense reactions was observed in the group of bronchial asthma patients.

In connection with this, the question arises of the necessity of carefully collecting anamnestic information on the toleration of medicines and the presence of allergic reactions in each bronchial asthma patient, with these facts being recorded in the case history. If case treatment with antibiotics is necessary in patients with this disease, the mandatory use of intradermal tests of antibiotics must be recommended before start of treatment. It is sufficient to inject 5000 units of the antibiotics (and not 10,000 or 20,000 units), as indicated in the directions.

It is very probable that antibiotics unfavorably affect the course of bronchial asthma in some patients. In order to reduce the allergizing effect of antibiotics it is advisable to prescribe them against a background of desensitizing drugs (aspirin, calcium chloride, dimedrol).