

The autoradiogram obtained after CaEDTA administration with cortisone, shown in Figure 1 (D), indicates a localization of Pm¹⁴⁷ closely similar to that of the control femur.

The autoradiographic observations indicate no marked effect of cortisone and CaEDTA treatments on localization of Pm¹⁴⁷ in femur. The concurrent lack of overall effect on the total amounts of Pm¹⁴⁷ in the several tissues indicates that neither cortisone nor CaEDTA have significant therapeutic value for removal of internally deposited promethium from rats.

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B. KAWIN⁷

Department of Agricultural Chemistry, Michigan State University, E. Lansing, March 4, 1958.

Zusammenfassung

Junge erwachsene weibliche Ratten, welche Einspritzungen von radioaktivem Promethium (Pm¹⁴⁷) erhalten hatten, wurden mit dem Kalziumsalz von Äthylendiamintetraessigsäure (CaEDTA) und/oder Cortison behandelt. Die Behandlungen vergrößerten die Blutkonzentrationen von Pm¹⁴⁷ ein wenig. CaEDTA-Behandlung verkleinerte die Menge von Promethium in der Leber um 20%, aber in anderen typischen weichen Zellgeweben und im Schenkel veränderte keine der Behandlungen die allgemeine Verteilung von Pm¹⁴⁷. Das autoradiographische Bild zeigt, dass die örtliche Verteilung von Pm¹⁴⁷ derjenigen von anderen lanthaniden Elementen ähnlich ist.

⁷ Present address: Biology Operation, Hanford Laboratories, General Electric Company, Richland, Washington.

The Electrophoretic Distribution of Protein-Bound Carbohydrates in Asthma Bronchiale

To investigate the electrophoretic distribution of protein-bound carbohydrates (PBC) in cases with bronchial asthma, we studied 26 patients with this disease. For each case, electrophorograms of serum-proteins (stained with bromphenilblue) and of PBC (stained with P.A.S. according to Köiw¹ with our modification) were performed, together with the absolute eosinophil count. The routine laboratory results (blood count; sedimentation rate, urine, etc.) were normal.

¹ E. Köiw and A. GRÖNWALL, Scand. J. clin. Lab. Invest. 4, 244 (1952).

No difference of interest was found in the serum protein patterns, but the analysis of the electrophoretic distribution of the PBCs gave unusual results. In 12 cases out of 26, the PBCs of the albumin-fraction were found to be definitely increased, while 11 of these cases had an eosinophil count of over 6% relat. The PBCs of the α -2-globulins were also increased in 12 cases, in no correlation to the eosinophilia. A (possibly compensatory) decrease of the β - and γ -globulin PBS fractions was observed. Our results are presented in the table.

The frequency of the so-called albuminotropic type of PBC distribution is evident. This observation offers a new point of view in the allergic etiological conception of asthma bronchiale. Usually, the antibodies (in allergies and infections) are supposed to travel with the γ -globulines. This is the case in urticaria, where increased protein-bound hexoses in this fraction are found³.

The albuminotropic type is rather rare and can be seen in gravity² and in a few infectious diseases⁴, for example typhus abdominalis, where it is considered as a sign of anergy or loss of defence powers of the organism. As a rule, in asthma bronchiale, a slight increase of the protein-bound hexoses and serum mucoproteins is found⁵.

As asthma bronchiale can be considered a powerful and long-lasting stress, exhaustion of the suprarenal (corticoid) activity is found very often. A low excretion of neutral 17-ketosteroids and reducing corticosteroids is usual⁶. Such a relative hypocorticism can be the cause of the albuminotropic (or anergic, exhaustive) type in the PBC distribution.

The difference between asthma bronchiale and other allergic conditions with regard to the therapeutic effect of antihistaminic drugs could possibly be explained by the electrophoretic differences in the antibodies.

J. KELLEN and T. KOLOŠ

Laboratory of the National Spa Nový Smokovec and Laboratory of the National Spa Štrbské Pleso (Czechoslovakia), June 3, 1958.

Zusammenfassung

Bei Asthma bronchiale wurde in annähernd der Hälfte der Fälle die Verteilung der Polysaccharidproteine nach dem «albuminotropen Typ» gefunden. Derselbe ist in der Regel bei allergischen Zuständen nicht vorhanden und kann als elektrophoretische Abweichung der Antikörper interpretiert werden.

² F. ALLERGRA, Arch. ital. dermatol. sifilogr. venerol. 28, 36 (1956).
³ Z. STARY, Hoppe-Seylers Z. 288, 55 (1956).
⁴ Z. STARY, F. BURSA, O. KALEOGLU, and M. BILEN, Med. Mschr. 7, 497 (1953).
⁵ F. GALLETTI and G. GELLI, G. Pneumologia I, 3, 265 (1957).
⁶ H. LEUBNER, F. GABL, and I. RABL, Allergie und Asthma 3, 79 (1957).

	Electrophoretic patterns										Eosinophil count
	of proteins					of PBC					
Fractions	Albumin	α_1	α_2 globulins	β	γ	Albumin	α_1	α_2 globulins	β	γ	
No. of cases											
Increased	2	4	3	2	5	12	9	12	1	2	14 (>6%)
Decreased	2	2	2	5	2	3	3	2	9	8	
Normal	22	20	21	19	19	11	14	12	16	16	12