

of arterial blood (table 2) showed an appreciable increase in oxygen partial pressure and oxygen saturation and a slight fall in alveolar-arterial oxygen difference.

Two months after the course of ACTH treatment the patient was readmitted and died within 24 hours, apparently of rapidly progressive heart failure. Postmortem¹¹ examination revealed extensive and severe fibrotic changes in the lungs, with emphysematous blebs. In

TABLE 3 (case 4).—Data Concerning Pulmonary Function of Patient L. H. as Studied by Bruce and Associates¹² in 1948

Vital capacity, L.....	2.09
Residual volume, L.....	1.97
Respiratory dead space, L.....	0.189
Alveolar ventilation, L./min.....	5.49
Arterial pO ₂ , mm. Hg.....	68
Arterial pCO ₂ , mm. Hg.....	42
Alveolar-arterial difference	47
Mean pulmonary artery pressure, mm. Hg.....	23.5

TABLE 4 (case 4).—Results of Studies of Pulmonary Function

Patient L. H., man Age, 28 yr. Height, 173 cm.	Weight, 62.2 Kg. Body surface area, 1.74 M. ² All respiratory volumes, BTPS	Diagnosis: Pulmonary granulomatosis of beryllium worker			
		Aug. 23, 1950	Sept. 6, 1950	Jan. 22, 1951	March 5, 1951
Minute volume, L./min.....	11.12	15.40	10.16	10.35	
Respiratory rate, resp./min.....	24	23	20	25	
Tidal volume, L.....	0.46	0.67	0.51	0.415	
Inspiratory reserve volume, L.....	1.27	1.59	1.58	1.76	
Expiratory reserve volume, L.....	0.76	0.28	0.56	0.616	
Vital capacity, L.....	2.50	2.54	2.65	2.80	
Expected vital capacity, L.....	4.24	4.24	4.24	4.24	
Residual volume, L.....	3.08	3.48	2.02	2.74	
Residual volume ÷ total volume, %.....	55.3	58.0	43.3	50.0	
Alveolar ventilation, L./min.....	5.67	7.14	6.94	5.24	
Respiratory dead space, L.....	0.22	0.36	0.21	0.197	
Maximum breathing capacity, L./min.....	94	104	80	100	
Expected maximum breathing capacity, L./min.....	125	125	125	125	
Total capacity, L.....	5.57	6.02	4.67	5.54	
Alveolar pO ₂ , mm. Hg.....	115	120	122	110	
Arterial pO ₂ , mm. Hg.....	66	72	80	86	
Arterial pCO ₂ , mm. Hg.....	32	34	29	36	
Alveolar-arterial difference, mm. Hg.....	49	48	42	24	
Serum CO ₂ , vol. %.....			47.13	51.29	
pH	7.48	7.47	7.47	7.41	
Arterial blood CO ₂ content, vol. %.....	43.48		38.43	42.04	
Arterial blood O ₂ content, vol. %.....	20.41	20.43	21.10	20.35	
Arterial blood O ₂ capacity, vol. %.....	22.12	21.94	21.43	21.42	
Arterial blood O ₂ saturation, %.....	91.2	92.0	97.3	94.0	

I. Therapy: ACTH 8/25/50—25 mg./day; 8/26/50-9/4/50—100 mg./day; 9/5/50—50 mg./day.

Eosinophil count: 0-17/mm.³

II. Therapy: ACTH 2/16/51-2/27/51—100 mg./day.

Eosinophil count: 162/mm.³ before ACTH; 0/mm.³ during ACTH.

17-Ketosteroids excretion: 3.9-6.3 mg./24 hr.

some areas the only recognizable tissue was bronchial or bronchiolar epithelium, the alveoli and alveolar septums having been completely replaced by fibrotic tissue. There were atheromatous plaques in the pulmonary artery. The myocardium showed peculiar granulomatous changes with giant cells, lymphocytes, monocytes and fibrous tissue. The lesion was sarcoid-like but was not typical of sarcoid.

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