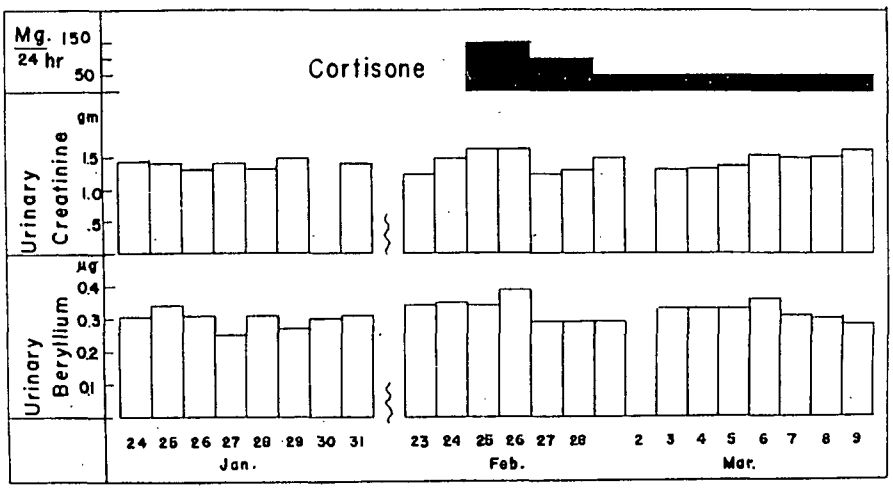
vitro. As an example of this one might cite the cases of nonoccupational disease in persons who had been exposed to unbelievably small concentrations of beryllium [2] and whose lungs, according to Dutra, Cholak and Hubbard,[3] contained concentrations of beryllium which on the average were about 10 times smaller than that necessary to bring about noticeable inhibition of alkaline phosphatase. More convincing in this respect than the data about the total concentration of beryllium in the lung are observations indicating that in cases of granulomatosis the small amount of beryllium which is found in the tissues is essentially insoluble in body fluids. This is well demonstrated by the following data concerning one of our patients who had inhaled fluorescent powder and who came to autopsy nine years after the cessation of his exposure. On several occasions during the year preceding his death, no beryllium could be detected in his urine. His lungs, however, still contained 7.8 μg. of beryllium per 100 Gm. of wet tissue. This evidence of beryllium in the lung as long as nine years after exposure, in a person who did not excrete detectable quantities of beryllium, indicates virtual insolubility of the



The influence of cortisone on the urinary excretion of beryllium in pulmonary granulomatosis.

beryllium, which presumably was present as silicate or oxide. Under such conditions, any interference with enzyme action by soluble beryllium is difficult to conceive.

One concludes, therefore, that the mechanism of the toxicity of beryllium compounds in chronic granulomatosis is still unknown and cannot be explained on the basis of any of the known biochemical reactions of beryllium. The problem is similar to, and as elusive as, that concerning other pneumonoconioses which are caused by insoluble particles.

An important question which was raised earlier in this conference is whether increased elimination of beryllium can be brought about by administration of cortisone. We have heard conflicting data. Those presented by Dr. Kline indicated that the excretion of beryllium was not influenced by the administration of the

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